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A Review of Local Economic and Employment Development Policy Approaches in OECD Countries: Policy Audits

Jonathan Potter,

Marco Marchese

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A Review of Local Economic and Employment Development Policy Approaches in OECD Countries

Part I:
Policy Audits

Contact details

OECD Centre for Entrepreneurship, SMEs and Local Development (CFE)
2 rue Andre-Pascal, 75775 cedex 16, Paris, France
www.oecd.org/cfe
CFE's Local Economic and Employment development programme
www.oecd.org/cfe/leed

OECD contact people for this report:
Jonathan Potter, Senior Economist, OECD LEED Programme
jonathan.potter@oecd.org
Marco Marchese, Policy Analyst, OECD LEED Programme
marco.marchese@oecd.org

NOTE ON THE REPORT SERIES

This report forms part of a series of four reports from the project carried out by the OECD with collaboration from the Welsh Assembly Government (WAG) "A Review of Local Economic and Employment Development Policy Approaches in OECD countries". The review has intended to provide WAG with a set of policy options and learning models to consider in the design of future development policies and strategies. The full set of reports is as follows:

- Executive Summary & Synthesis of Findings
- Part I: Policy Audits
- Part II: Policy Transferability to Wales
- Part III: Case Studies of Regional Economic Development Approaches

This report shows the results of Part I, presenting the twenty policy audits that describe specific interventions in the six policy fields of: labour market participation, skills development, economic and physical regeneration, business producitivity improvement, knowledge transfer and sector development.

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The project Steering Group members were:

Jonathan Price, Chief Economist

Gareth Morgan, Head of Economic Research

Gareth Edwards, Economic Advice Division

Neill Paul, First Ministers Office

Kevin Griffiths, Education Division

Julian Revell, Statistics Division

Jarlath Costello, Economics and Transport Division

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INTRODUCTION TO THE POLICY AUDITS

Marco Marchese
Organisation for Economic Co-operation and Development.

This section introduces the first of the three 'learning tools' (*i.e.* policy audits, transferability papers, regional case studies) envisaged by the "OECD-WAG Review of Local Economic and Employment Development Approaches in OECD Countries" and covers four areas: the nature of the policy audits; the selection process; an overview of the lessons learned; some general conclusions.

Nature of the policy audits

Audits are intended to be relatively short papers describing the main features (*e.g.* design, target groups, delivery arrangements, budget, etc.) and results (*i.e.* programme take-up, impact, etc.) of local policy interventions in OECD member countries selected because of their potential to inspire future policy development in Wales. Overall, twenty audits have been assembled and are presented in this report. The choice of the initiatives is the result of a selection process, briefly outlined in the following section, which has entailed a more detailed analysis of those interventions which have been considered of greatest relevance to Wales.

The selection process

The process started in September 2007 with the publication on the OECD-LEED website of a 'call for experts' in which academics and policy makers knowledgeable about innovative and/or successful policy initiatives in OECD member countries were called upon to submit a 'policy audit proposal' through a relevant application form. The text of the 'call for experts' was also circulated among the OECD LEED Programme contact list (over 3 500 members) and other forums, including via the newsletters of the European Association of Regional Development Agencies (EURADA) and the International Economic Development Council (IEDC) in North America. In addition, over 400 policy experts – mainly from the university and consulting worlds – were personally contacted to assess their interest in the project.

The experts were asked to propose initiatives in the following policy domains, selected by the OECD and WAG because of their relevance to policy challenges in Wales: a) business productivity improvement; b) labour market participation; c) skills development; d) economic and physical regeneration; e) strategic sector development; f) knowledge transfers. Experts were asked to briefly discuss the following points of the initiative in their proposals: *i*) context; *ii*) objectives and rationale; *iii*) activities; *iv*) implementation arrangements; *v*) impact and effectiveness; and *vi*) degree of innovativeness. In total, 118 proposals were received, 23 of which were policy interventions implemented in the UK and 95 of which were international. Of the 95 international proposals, 61 dealt with interventions in Europe, 28 in North America, and 6 in Australia/Asia. All the priority policy domains were covered in the proposals.

Thereafter, there was a joint selection process of the initiatives by the OECD secretariat and the WAG project steering group. Audit proposals were particularly assessed according to their quality and interest to Wales and similar regions. The selection process included a meeting in Cardiff in November 2007, which resulted in a shortlist of 25 proposals from which the final policy audits were to be chosen. At this meeting, it was agreed that a further assessment would be made of the quality of evaluation evidence available on the initiative. In particular, the short-listed experts were called on to classify the available evidence on the impact of the intervention according to a simple 4-point scale: a) views of programme managers or monitoring of information on take-up; b) views of the beneficiaries on the difference made by the intervention through a survey; c) quantitative comparison of outcomes of beneficiaries with typical non-beneficiaries; d) quantitative comparison of outcomes of beneficiaries with a matched control group of non-beneficiaries. It was determined to not proceed with proposals for which impact information was limited to the first point. Nearly all of the final selected proposals had evaluation information of the first and second type. Control group comparisons were generally unavailable. In the report, this therefore reflects the reality on the ground that evaluation evidence on the impact of innovative policy interventions is relatively difficult to find in many OECD countries.

The final outcome has been the identification of the 20 policy audits that make up this section of the report. At the geographical level, 13 audits describe interventions in Europe (Austria, Finland, Germany, Ireland, the Netherlands, Portugal, Sweden and the UK), 7 deal with interventions in North America (USA and Canada) and one focuses on an initiative in Asia (Japan). At the policy level, the classification is slightly more complicated because some of the six chosen policy fields are not mutually exclusive. However, it can tentatively be said that: 3 interventions fall within the domain of 'labour market participation'; 4 within 'skills development'; 5 within 'business productivity improvement'; 3 within 'knowledge transfers'; 2 within 'sector development'; and 3 within 'economic and physical regeneration'. The detail is given below:

- Labour Market Participation (3)
  - Aster R., *Perspective 50Plus Initiative*, Germany. (*)
  - Green A., *Lets Get Moving Initiative*, United Kingdom. (*)
  - Nunziata L., *Microenterprise Welfare-to-Work-Program*, USA.
- Skills development (4)
  - Muth J. and Thierfelder C., *Training Cheque Programme*, Germany. (*)
  - Brisbois R. and Saunders R., *The Dexter Institute*, Canada.
  - Nativel C., *JARC Metalworking Skills Program*, USA.
  - Tavares A., *INOV Contacto Internship Programme*, Portugal.
- Business Productivity Improvement (5)
  - Pages E., *Appalachian Regional Commission Entrepreneurship Initiative*, USA.
  - Pages E., *No Wrong Door Model*, USA.
  - Pike A., *Västra Götaland Regional Growth Agreement*, Sweden. (*)
  - Murphy D., *Hot-house Business Incubator*, Ireland. (*)
  - Simões V., *NITEC Initiative – Supporting R&D units in SMEs*, Portugal.
- Knowledge transfers (3)

  - Janger J., *K-Plus Competence Centres*, Austria. (*)
  - Kosonen K.J., *University Filial Centres*, Finland.
  - Roper S., *Innovation Voucher Scheme*, the Netherlands. (*)
- Sector development (2)
  - Carvalho L., *FATEC Initiative – Advanced Footwear Technologies*, Portugal
  - Woolgar L., *Hokkaido New Industrial Cluster Policy*, Japan. (*)
- Economic and physical regeneration (3)
  - Weiss M., *North Massachusetts Avenue (No.Ma) Initiative*, USA. (*)
  - Winden van W., *Kensenzones-Rotterdam Initiative*, the Netherlands.
  - Miller G., *Downtown Oshawa Regeneration Project*, Canada. (*)

After the first versions of the 20 audits were received, it was decided to analyse in greater detail those initiatives which seemed to hold the greatest relevance to Wales (*i.e.* they are marked with a star in the list). The corresponding experts were therefore contacted again and asked to submit a new, longer paper describing more in-depth the initiative originally tackled in the first version. This explains why some audits are longer than others.

Overview of the lessons from the audits

This section briefly introduces the reader to the main outcomes and lessons of the audits, each of which abided by the same template comprising the following items: rationale; description; impact and evaluation evidence; strengths; weaknesses; and potential transferability.

Labour market participation

The first audit presented is Reiner Aster's on the *Perspective 50Plus Initiative* in Germany. This paper is extremely interesting because it addresses very closely one of the main policy challenges facing Wales: *i.e.* increasing labour market participation rates, especially in specific regions and among particular brackets of the population. This initiative demonstrates that a significant contribution to this objective can stem from the labour market re-activation and re-integration of elderly long-term unemployed. Interestingly, this strategy has proven cost-effective and successful, even in the German regions more plagued by the problem of labour market inactivity. The two main reasons underlying the success are reported to be a good mix of policies and tools (*e.g.* training, mentoring and coaching, financial incentives for companies and workers, etc.) and the unusual flexibility that regional and local actors have enjoyed with regard to policy design and delivery mechanisms within the framework of this initiative. Overall, thanks to this measure, nearly 80 000 elderly workers have been reactivated through different means (*e.g.* interviews, individual coaching and mentoring, etc.) and approximately 22 500 have found a job. Three/quarters of these jobs have been created in SMEs.

Increased labour market participation does not only pass through the development of employment opportunities and the enhancement of workers' employability, but also through the pulling down of labour market barriers, including the cost and availability of transport. In this respect, the *Lets Get Moving Initiative* outlined by Anne Green in the region of Merseyside (UK) is a case in point and proves that, to be successful, transport and travel initiatives are to be multifaceted so that they can address what are essentially individual needs. The Merseyside initiative, in particular, has succeeded in bringing thousands of people back into the labour market through a three-pronged approach: supply

of relevant information; provision of financial and practical help; delivery responsive transport services. In practice, simple measures such as scooter loans or temporary free public transport have enabled thousands of people on the margins of the labour market to go to interviews and get a new job. The fact that this initiative comes from a context geographically and institutionally very close to Wales should make transferability attempts relatively easy.

An initiative that departs from traditional welfare interventions is the *Micro-enterprise Welfare to Work Initiative* (Luca Nunziata), a US-based programme that has targeted welfare recipients by helping them start up a self-employment activity. The programme's figures seem to be encouraging: the number of participants who run a small business has more than doubled, whereas the number of people in welfare assistance schemes has dropped by three/quarters. Interestingly, this programme has been very popular in the childcare sector, which might bring about positive trickle-down effects by letting additional untapped energies join the labour market.

Skills Development

One of the goals of the WAG 2005 Skills and Employment Action Plan (SEAP) is to improve the mechanism for workforce development. The *Training Cheque Programme* (Josef Muth and Claudia Thierfelder) in North-Rhine Westphalia, Germany, can give some lessons in this domain insofar as it has reached out to workers who had been out of training for over five years. The main element behind the success has probably been the differentiation in the offer of training vouchers. The possibility to have access to the vouchers both as a company and as individuals has *de facto* allowed the programme to target two different groups of workers: the less skilled ones through individual access and the more qualified ones through company access. Overall, nearly 90% of the workers participating in the programme state that their position has improved after the training. Depending on the strategic priority of Wales, WAG might consider either the implementation of the package as a whole or only one of the two components: company-access coupons if the priority is the skills upgrading of qualified workers or individual-access coupons if the priority is to be given to unskilled workers.

Another important objective of the SEAP is to work with employers to improve worker skills and supply new entrants to the labour market with the needed competences. *The Dexter Institute* (Nova Scotia, Canada) described by Richard Brisbois and Ron Saunders seems to merge these two guidelines. Joint partnerships between community colleges and large employers can reverse declining employment trends in certain industries by providing interested students with more interesting career prospects. This initiative is quite innovative in being chiefly employer-driven. It is the employer (unavoidably, a large employer) who first realises the risk of a vocational crisis in its industry and takes action to remedy through the collaboration with the local college system. Altogether, this represents a good example of institutional synergies and shared objectives at the local level.

Still in the field of workforce development, another interesting initiative comes from the United States and concerns the *Jane Addams Resource Corporation (JARC) Manufacturing Skills Program* (MSP) in Chicago, Illinois (Corinne Nativel). The JARC MSP is a training programme framed within a wider community development intervention that has enabled participants (*i.e.* incumbent workers from disadvantaged communities) to work in a more continued way, obtain better jobs and consequently improve their income. The highly focused sectoral approach and the high flexibility with regard to the language, contents, and even venue of the courses have underpinned the success of this initiative, which has turned out to be strongly demand-driven and tailored to the company needs. In Wales some economic sectors have been recognised as of primary importance for future economic growth. WAG might therefore weigh the launch of a similar pilot project in any of its strategic industries such as automotive, agri-food or social care.

Somewhat different from the previous cases is *INOV Contacto* (Ana Tavares), a highly competitive international internship programme for Portuguese graduates. In addition to the obvious result of enhancing the career prospects of talented individuals, the broader intention of the programme is to strengthen the internationalisation of the Portuguese economy. At a cost of EUR 25 000-30 000 per intern, the programme is deemed a worthwhile and productive investment by the Portuguese government which funds the initiative. Considering the mainly educational nature of this programme, it is difficult to establish the extent to which it has concretely contributed to internationalising the Portuguese economy and therefore whether the public per-intern cost is a reasonable investment or not. However, the audit identifies that when financing an internship programme there are several variables which may reduce the final cost (*e.g.* lower duration of the programme, location of the internship, cost-sharing by the recipient company, etc.), and which WAG may want to consider were the initiative's average cost is reckoned to be high.

Business Productivity Improvement

A US-based programme that deals with business productivity improvement *tout-court* is the *Appalachian Regional Commission (ARC) Entrepreneurship Initiative* (Erik Pages). This is an important initiative for Wales because WAG recognises that an entrepreneurial culture is crucial to business creation and development and that high entrepreneurship rates positively affect total economic output. However, Wales experiences an entrepreneurship rate (measured by VAT registration rates) that is lower than its neighbours in England. The ARC Entrepreneurship Initiative, which has taken place in the Appalachian region in the US Midwest, therefore provides some inspiration. By taking an encompassing approach to entrepreneurship development (*i.e.* education, capital access, technical assistance, business incubation, etc.), the ARC programme has *inter alia* facilitated the start-up of nearly 2 000 businesses and the creation of nearly 10 000 jobs. The public cost-per-job of this initiative is estimated at less than USD 5 000, which is much lower than most public job-creation programmes. The flexibility in the design and management of the several different components of the initiative and the involvement of community-based organisations in many of them, are the two main features underpinning the success of the ARC initiative, as well as the two main cues for WAG when attempting the design and delivery of similar comprehensive entrepreneurship development programmes.

A second audit by Erik Pages proposes the *No Wrong Door Model*, another US initiative that intends to facilitate the match between the demand and supply of business development services (BDS). This paper contends that one-stop shops are not the only solution to improve the efficiency of BDS provision but that a system of cross-referrals among regional BDS organisations may equally well serve the purpose. All in all, it is essentially a matter of a trade-off between the time-saving of one-stop shops versus the likely higher quality of bespoke business services delivered through a cross-referral system. Of course, the success of such an initiative will depend on some important requirements such as a common intake procedure of BDS requests, the setting-up of a clear regional referral system, and the regular collaboration between the involved BDS providers.

A full-fledged regional development strategy is summarised by Andy Pike in his audit on the *Västra Götaland Regional Growth Agreement (VG-RGA)*. Quoting Pike, "the RGA was a three year (2000-2003) development contract that provided a strategic analysis of regional development, set the goals and established regional priorities through stakeholder dialogue and consensus". What makes this process interesting to Wales is that the RGA fell within a wider devolution initiative by which the Swedish government had first given more autonomy to two pilot regions and their elected regional governments: Västra Götaland (*i.e.* Goteborg region) and Skåne. The way the region of Goteborg has managed this devolution process in the field of economic development policy gives interesting hints to Wales, which has also recently received more devolved powers. On the whole, the paper underscores

the importance of a partnership-based approach to local development and the propelling role that capital cities, even of relatively modest size, such as Goteborg or Cardiff can play for the overall growth of the region. More specifically, the Swedish initiative shows a particular focus on themes such as entrepreneurship, skills enhancement, attractive living environment and IT and infrastructure. Science parks and incubators have also received a great deal of attention, which proves how these partnerships are often used to boost industrial innovation at the regional level.

A narrower focus on business productivity is chosen by Declan Murphy, who describes Ireland's *Hot-house Business Incubator* for high-growth technology companies. The theme of high-growth SMEs has increasingly caught the attention of many OECD member country policy makers as a result of the contribution of these businesses to productivity increase and employment growth. In Wales, the network of Technium Centres assists high-tech, high-growth SMEs by giving incubator space and linkages with local universities. As a result, Murphy's paper on the Hot-house Incubator in Ireland provides a very good comparative example since Hot-house's main objective is precisely to boost the business growth and internationalisation of Irish high-tech SMEs. In this case, a key for success has been the contribution of as much as 50% of the last year's salary to participants who have left their job to join the programme. This seems to have enabled the programme to attract better talents who have felt more protected by the presence of a minimum wage guarantee. In addition to the training provided, participants seem to have particularly appreciated the entrepreneurial environment which has emerged in the incubator context and which is therefore one of the hallmarks of these types of initiatives. The geographical and cultural closeness of Ireland and the presence of similar centres in Wales would make the exchange of experiences relatively easy to plan and design.

The topic of innovation is also dealt with by the Portuguese *NITEC Initiative* (Vitor Corado Simões), which aims to foster the establishment of R&D units within SMEs chiefly by providing a three-year subsidy to the wage of the recruited scientific personnel. The intervention has reached more than 18% of the approximately 1 000 SMEs carrying out R&D in Portugal and has generated nearly 500 R&D jobs. The strengthening of SMEs' in-house R&D competences is something WAG may want to reflect on, considering that total R&D investment as a proportion of Gross Value Added (GVA) is lower in Wales than in many parts of the UK and that this is essentially the consequence of lower R&D expenditure from the business sector rather than from the government or higher education. Initiatives similar to NITEC may consequently give a boost toward bridging this gap. This paper also represents a perfect link to the following theme of knowledge transfers. NITEC tries to goad business innovation by helping enterprises to build up in-house capacities, whereas knowledge transfer programmes do the same by encouraging external links with knowledge organisations such as universities and technology institutions.

Knowledge Transfers

The Austrian *K-Plus Competence Centres* is a perfect example of a knowledge transfer programme to the extent that it creates industry-university collaborative research centres of limited duration (up to 7 years) with a focus on pre-competitive research. This strategic focus enables the Competence Centres to both fulfil the needs of the industrial sector and preserve high academic standards. In other words, it generates a win-win solution for the two sides of the partnership (*i.e.* universities and businesses), which has resulted in increased private investments in R&D and the identification at the national level of critical masses of knowledge not only in scientific and industrial fields traditionally strong in Austria, but also in new and unexpected areas. This suggests that any transferability attempts would work best if not based on an *a priori* choice of the strategic economic sectors in which to invest, but rather by leaving this decision to the bidding process from which the most promising partnerships would emerge. At the firm level, this initiative has also made SMEs more

aware of the importance of R&D and has had a 'push effect' on SMEs' increased collaboration with external knowledge organisations.

Within the 'knowledge transfer' field is also the audit by Kati-Jasmin Kosonen on the Finnish *University Filial Centres*. This initiative intends to link less favoured Finnish regions to the national knowledge system by setting up branches of national universities in the rural regions of the country. The goal is to expand both the student recruitment area of the main universities and the collaboration network of the same university with public institutions and businesses located in the rural region. The interest of this initiative lies in the fact that Wales also has some more remote rural regions, albeit not as remote as Finland's, which might be linked to the regional innovation system through a similar approach.

Turning to interventions with a narrower focus, Stephen Roper describes an *Innovation Voucher Scheme* originally implemented in the Netherlands, but which has recently also been adapted to the West Midlands in the UK. Innovation vouchers are targeted to SMEs and intended to spur direct knowledge transfers, as well as long-term relationships between small businesses and knowledge providers. Given their small size (EUR 7 500 each), the vouchers have mainly had a bearing on process improvement, whereas the impact on both product and process innovation has been limited. This suggests for WAG that a choice is to be made when designing similar policy tools: *i.e.* either backing up minor improvements by granting small sums to many firms or trying to support fewer major innovations by giving larger sums to fewer enterprises with higher-growth potential. The final choice will depend on the strategic objectives and priorities of the region. In any case, voucher schemes are easy to implement and have proven successful both in the Netherlands and the West Midlands, which should make transferability to Wales something not difficult to apply.

Sector Development

As with any developed country, Wales has witnessed over the last decades a rising share of jobs in the service sectors and a declining share in manufacturing. However, manufacturing still remains a vital part of the Welsh economy and, indeed, the reduction of manufacturing employment as a whole conceals specific industries where the number of jobs is growing. Luis Carvalho's audit on the *FATEC Initiative* in the Portuguese footwear industry is of interest to WAG because it relates to the way Northern Portugal's shoe industry has coped with fierce competition from lower-cost emerging countries by introducing new cutting-edge technologies. Such technologies have made possible the production of higher-quality shoes and thereby the targeting of higher-end segments of the market. In this respect, the synergies and co-operation between the relevant industry actors (*i.e.* footwear enterprises, machine and equipment producers, and technological institutes) have been crucial, as well as the leadership role played by one actor (*i.e.* a technical institution, in this case) and recognised by all others.

A more general approach to sector development is portrayed by Lee Woolgar in his audit on the *Hokkaido New Industrial Cluster Policy*. As with the Västra Götaland Regional Growth Agreement, this is a more comprehensive intervention that consists of several different initiatives. The focus is on the IT and biotechnology sectors and the goal is to develop networks within the two clusters and between the clusters and external operators (*e.g.* large multinationals), as well as to implement more traditional measures such as financial and BDS support. In knowledge-intensive sectors such as IT and biotech, a strong university and research basis turns out to be the foremost pre-condition for success, something which should arguably discourage WAG from undertaking cluster development initiatives in industries where such a foundation is not in place. The strength of a shared vision among cluster stakeholders has also had an impact on the different degrees of success of the two clusters analysed in this paper.

Economic and Physical Regeneration

Economic and physical regeneration is the last theme investigated by the audits. There is growing consensus that there can be a linkage between the regeneration of inner cities and urban areas and local economic development. The first intervention proposed in this policy domain concerns the *North Massachusetts Avenue (No.Ma) Initiative* in Washington, DC (Marc Weiss). This urban regeneration project saw the construction of an additional metro-rail station as the cornerstone of the economic and social revival of a declining urban area in the US federal capital. What is inspiring in this project has been the ability to leverage significant private financing in the construction of a public infrastructure such as a metro station, which has eventually spurred the commitment of further funds from both the federal and city governments. Of course, this can only happen when the public sector can convince private investors about the economic returns the infrastructure would generate. While Wales does not have any city of the size or political relevance of Washington DC, it is believed that the lessons this case conveys on private finance leveraging for economic development are meaningful for smaller contexts and smaller-scale initiatives as well. After all, Cardiff hosts both national and regional political entities and one of the key stratagems to attract funding from the federal government in the No.Ma initiative was, for instance, the refurbishment and subsequent provision of a large office-building to a federal government agency. The cautionary tale coming from this initiative is that in any urban regeneration project there is a risk of displacement of the low-income groups living in the neighbourhood that needs to be taken into some consideration.

On the other hand, *Kensenzones* in the Netherlands (Willem van Winden) provides a more traditional example of urban regeneration where the role of the private sector has essentially been nil. This project seeks to revive a number of suburbs in Rotterdam by giving fiscal incentives to entrepreneurs willing to invest in these deprived neighbourhoods. The main message of the audit is that entrepreneurship promotion is more likely to contribute to urban regeneration if coupled with other equally important measures such as physical regeneration, anti school dropout measures and vocational training schemes.

Finally, urban regeneration can sometimes involve brownfield remediation. Today, Wales is still seeing the environmental and health impacts of heavy industry and mining in the 20th century, which may make brownfield redevelopment necessary from time to time. The *Downtown Oshawa Regeneration Project* (Glenn Miller) shows that, taken as a long-term strategy, brownfield remediation can succeed in attracting private sector investments and thereby act as a catalyst for urban regeneration and local economic development. This audit also suggests that, given the typical nature of public good of brownfield redevelopment, this type of initiative calls for a strong leadership role by the public sector, as well as a long-term political and financial commitment, regardless of possible local government changes or cabinet reshuffles. In short, there needs to be a broad and shared consensus at the local level about the sense and importance of such a type of intervention.

General conclusions

General conclusions on the outcomes and lessons of the audits are drawn with regard to the two broader topics of labour market policy and business productivity policy, which encompass the six more specific themes that have so far characterised our analysis. Overarching lessons are also finally inferred.

In the field of labour market, all audits have focused on active labour market policies (ALMPs), because passive policies (*e.g.* unemployment benefits) are largely managed at the central level by national governments. Most audits have directly or indirectly touched the issue of training. It has been observed, for instance, that vouchers can be quite successful in encouraging the skills upgrading of

workers who have long been out of training and that, in similar schemes, the choice of the target group will imply different strategic goals. Where specific industries are particularly strong and drive the rest of the local economy, highly focused sectoral training programmes can strengthen the industrial vocation of the region.

However, employability is a multifaceted concept that goes beyond skills upgrading and wage employment. Public transport and travel measures can go a long way in pulling back into the labour market people who have the ability and willingness to work if they are given the chance to do so. These measures look especially important in a country such as Wales which has rural regions where people want to continue to live but from which are willing to commute for work. Similarly, wage employment is not the only solution to reducing labour market inactivity. For people with past work experience and some accrued skills, self-employment promotion can be a valid alternative to replace or complement wage income.

Turning to the domain of business productivity, most of the audits dwell on the key role of innovation. The innovation policy most commonly described has consisted of encouraging linkages and partnerships between businesses, on the one hand, and universities and research/technological institutions, on the other hand. When pursuing this strategy, it is particularly important to set the type of research to support beforehand, in order to make sure that both parties involved benefit from the partnership. This often implies that these collaborative efforts more likely focus on pre-competitive knowledge rather than, for instance, product development research. A similar choice is also to be made in the design of innovation voucher schemes, in that features such as voucher amount and access modality will affect the target group and strategic objective of the initiative.

An increasingly common innovation policy consists in business incubators. The business incubation model supports enterprise start-ups by combining the provision of workspace on preferential and flexible terms with the concentrated supply of utilities, services, facilities and equipment. Increasingly, a number of incubators have taken a more specialised slant, fostering business start-ups in determined industries. This is the case with Ireland's Hot-house incubator, which has been outlined in one of the audits. Some crucial points are recommended for the success of high-tech business incubators: a) the setting up of a sort of 'alumni' network of previous users who can advice the new start-ups as a result of their experience; b) the high quality of BDS providers involved in the initiative as this has a strong impact on the chances of success of the start-ups; c) an exit from the incubator that is made gradual rather than abrupt so that the company has more time to adapt to the challenges of the external environment. A further innovation policy option is to directly back up enterprise in-house competencies by subsidising R&D activities. As with any subsidisation programme, positive push-up effects must be balanced with potential deadweight costs and the risk of subsidy dependency.

Partly related to improved business productivity is, finally, the issue of urban regeneration, which has been the core topic of three audits. The main lesson these audits convey is that urban regeneration can act as a catalyst for local development. However, this requires significant long-term political and financial commitment, which makes the case for leveraging private financing quite compelling. Moreover, these initiatives are more likely to work best when they are integrated into wider strategies that include other more traditional business support activities.

Overarching lessons

It is finally possible to draw from the audits some overarching lessons that cross both broad policy domains of labour market and business productivity. Firstly, flexibility in policy design and delivery has propped many successful programmes. The possibility of adjusting some important

programme features to the local needs of the beneficiaries has often represented an added value to the initiative. Two well-performing initiatives such as Perspective 50Plus in Germany and the JARC Metalworking Skills Program in the United States openly report that flexibility has been crucial to the success of the intervention.

Secondly, there often needs to be a long-term commitment of public institutions to see the positive results of a policy. This is especially true in the case of urban regeneration programmes, but to large extents it also applies to sector development and knowledge transfer programmes. This entails that for some comprehensive development interventions, a consensus needs to be sought, not only within the ruling political coalition but also with the political opposition. This will reduce the risk of sweeping turns in policy priorities in case of government changes, which would end up jeopardising the success of the undertaken initiatives and cause a waste of resources.

Thirdly, successful interventions require strong leadership, be it of public or private nature. When projected private returns are not high enough or are too far-off in time, public leadership should be expected. As seen, this is for example often the case with economic and physical regeneration programmes. On the other hand, in programmes such as sector development the leading role would be best played by private institutions that enjoy expertise and recognition in the industry (*e.g.* a technical institute, a business association, an umbrella organisation, etc.).

Finally, the issue of leadership is linked to the prioritisation of policy objectives. In a time of increasing public budget constraints, it is crucial that programmes, especially local ones, be focused on a narrow strategic goal. This will increase the likelihood of reaching the target and lower the risks of deadweight costs. The pulverisation of resources among too many small programmes or, within the same programme, among too many beneficiaries is something to possibly avert.

LABOUR MARKET PARTICIPATION

"PERSPECTIVE 50PLUS" INITIATIVE (GERMANY)

Reiner Aster
Gesellschaft für soziale unternehamansberatung (GSUB) (Organisation for Social Business Consulting), Germany.

Rationale for the initiative

Demographic change and the challenge of an ageing society are as relevant for Germany as for most of the other European and OECD countries. The demographic challenge also has economic and social dimensions and impacts on the labour market.

In Germany, significant reforms have been undertaken over the past few years that target both the pension system and the active ageing labour market policies. Success has been made in requesting employees to work longer: the average age of retirement is now 61.3 years (total EU25: 60.9 years)[1]. Also, the German government decided to postpone, step-by-step, the statutory retirement age: between 2012 and 2029 the statutory retirement age will be progressively raised to 67, starting with the age cohort 1947.

The strategy to ensure that postponing the retirement age will not increase unemployment among older workers has been implemented successfully in Germany: the average pension age increased and so did the employment rate of older workers.

The overall policy approach for older workers in Germany addresses the following target groups: employers, workers, job-seekers, permanently unemployed individuals (50–65 years), trade unions, work councils, human resources managers, and the stakeholders and actors in the regions.

The Active Labour Market Policy in Germany at the current state (2007) provides the following instruments:

- Integration subsidies and wage guarantees for older workers
- Support for integration measures for older, long-term unemployed individuals
- Improvement of the qualifications of low-skilled and older workers
- Legislation to improve employment opportunities for older persons
- Legislation on integration management policies in the workplace

The current German policy approach to increase the employment rate of older workers is twofold: the "Initiative 50plus" programme, on the one hand, provides incentives for companies to retain older employees by, for instance, fostering in-company training for older workers (subsidies exist for companies of up to 250 employees for the training of employees over 45 years old) and, on the other hand, tends to improve the situation for long-term unemployed older workers by eliminating the barriers that hinder the unemployed from accessing the labour market.

The programme "Perspective 50plus – Regional pacts for older workers" is a national programme within the wider "Initiative 50plus" of the Ministry of Labour and Social Affairs and the German National (Federal) Government.

The "Perspective 50plus - Programme" was launched in a political context raising two important issues that were – in this combination - not explicitly addressed before. These issues are more generally linked to the "local approach", "the demographic change" and the "social inclusion" topic at the European level[2].

The first issue is the challenge of long-term unemployment of older workers, i.e. the challenge of re-integrating long-term unemployed older workers into the workforce. This is a challenge for enterprises, the unemployed themselves, and for labour market and employment policies. It raises questions such as how to convince companies to hire long-term unemployed older workers, how to motivate, activate, prepare, and train older long-term unemployed persons for regular jobs.

The second issue is the involvement of the regions and the local stakeholders to combat the long-term unemployment of older workers.

It is important to know that in the first half of 2005 the general policy approach of the federal government to combat the unemployment of older workers, according to the inaugural speech of the Chancellor Schröder on March 17, 2005, targeted three areas of intervention: firstly, the potential of the economy should be put to better use by extensively applying the given and revised instruments of the German Social Code III and II for the re-integration of older long-term unemployed workers; secondly, the potential of the 16 German "Bundesländer" should be taken into account. This led to a legal initiative of the federal government to create 50 000 additional publicly subsidised jobs for unemployed older persons over 58[3]. Thirdly, the potential of the regions and local areas (*i.e.* European Nuts III level, cities and districts all over Germany) should be discovered and developed by involving the local and regional employer organisations, the unions, as well as the local stakeholders (to the extent that they are able to tackle the issue of unemployment of older persons).

The "Perspective 50plus" programme represents the above-mentioned third intervention. It addressed the local "job centres"[4] as the main partners of the federal government. It was the first time that a federal labour market initiative directly addressed the regions in order to "unlock" all the potential to combat the long-term unemployment of older persons.

The description and assessment in the following chapters are mainly based on the official monitoring data of the gsub mbH, reported to the Ministry; the evaluation outcomes and results of the "Institut Arbeit und Qualifikation" (IAQ) of the University of Duisburg-Essen[5]; and the final report of the "Strategy Board", which was established as a bottom-up initiative by regional pact-co-ordinators during the first year of the programme.

Description of initiative

At a strategic level, the "Perspective 50plus" programme was composed of a multi-level approach:

- Conceived, initiated and designed at the federal (national) level
- Managed and facilitated at the regional level
- Implemented, activated and delivered at both the regional and local level

The general aim of the programme was to increase the chances for employment for those over 50. Another aim was to find regional solutions by addressing and convincing the regional or local companies, the workers themselves, and the public, of the advantages of older workers and to cut down the barriers for their access to the labour market.

The "call for proposals" of the Ministry (June 2005) mentioned two main issues:

- Finding new pathways for the re-integration of older long-term unemployed workers into jobs and to tackle long-term unemployment of the fifty-plus generation
- Search for new instruments or measures on a regional level

Additionally, there have been four concrete operational goals:

- Raise the awareness in the regions for the difficult situation of older long-term unemployed and find simultaneously regional (local) solutions for their re-integration into the labour market
- Identify "best-practice" initiatives, strategies and methodologies for the exchange between regions
- Identify instruments which might be relevant on the federal level
- Set up regional networks and local employment pacts

The programme has been delivered by the Ministry of Labour and Social Affairs (2005: Ministry of Economy and Labour) and supported by the gsub mbH Berlin as a service provider with a duration of two years (2005–2007).

A formative evaluation was implemented by contracting the IAQ Institute at the University of Duisburg-Essen.[6] In December 2007 the evaluation for the first phase 2005–2007 was completed. Simultaneously, the German government decided to extend the programme by a second three-year phase 2008–2010, due to the success of the first phase.

In the year 2005 the German Ministry of Labour launched a "call for proposals" - an idea competition addressing all 453 local "job centres"[7] across Germany. Sixty-two employment pacts with 93 joint agencies or local authorities (job centres) were chosen. The successful projects received a total of €250 million in grants to implement their ideas and schemes.

Since then, the activities of the 62 Employment Pacts covered the following fields:

- Regional and local campaigns addressing companies, but also addressing the older long-term unemployed themselves and the public opinion; in particular, intensive promotion in order to foster small and medium-sized enterprises to hire older long-term unemployed (demand side)
- "Active measures" in order to prepare the older long-term unemployed workers for regular jobs (supply side)
- Identification and selection of older long-term unemployed as participants in the programmes promoted by the local job centres

- Implementation of (financial) incentives for the companies as well as for the long-term unemployed (wage-subsidies, vouchers, awards, bonus-systems like "return- to-work credits"),
- Skill development activities and launch of "pre-job-training measures"
- Matching and Coaching activities for sustainable (re-) integration into jobs
- Tailored and customised in-company training
- Preventive and accompanying health-care activities

The activities in the regions where launched and steered by the local job centres - the main partners of the Federal Ministry of Labour and Social Affairs. Additionally, the job centres have been (and are) in charge of the budget of the programme. They receive the money either directly from the Ministry of Labour (local authorities) or through the Federal Public Employment Service (the joint agencies). However, in many cases the job centres commissioned external bodies (intermediaries, private or not-for-profit companies, training providers, universities or private research institutes) for different tasks. For instance, proposals submitted through the call for proposal (June 2005) have been predominantly designed, developed, and written by external bodies in close co-operation with the job centres. After being selected, the external bodies continued to work on behalf of the job centres or in close co-operation with this main actor.

Based on the concept, the first activities were typically concentrated on establishing new regional networks or fostering already existing networks, for instance, already established by a former "EQUAL" Partnership[8]. On the one hand, the main local stakeholders, such as local employer organisations, unions, single companies, representatives of the administration, local politicians (*i.e.* Members of Parliament, Mayors and so on) formed the steering committee. Simultaneously they often represented the strategic partnership. On the other hand, consortiums of training institutions, research institutes, non-profit organisations and others formed the operational partnership.

For instance, one pact in the south of Germany (Bavaria), founded an association called "50+ in Oberfranken" in order to enhance the network activities through a more obliging structure. Three bigger companies joined this pact and acted as "leading companies", as they had already integrated a major portion of older workers and therefore acted as a model to their suppliers and to other companies in the region. Moreover, five different pacts in this region (Franken in North-Bavaria), created a network for the region around the town of Nürnberg to better impact the enterprises and to expand the job opportunities for their clients/job-seekers.

In parallel, the job centres looked for suitable applicants amongst the registered unemployed of the 50-plus generation. Some of the job centres set up "pools of applicants", others activated all their clients belonging to the target group and a third group activated only those they hoped to later integrate into jobs. This was partly dependant on the amount of long-term unemployed, ranging roughly between 200 in small job centres (for instance in remote rural areas in Bavaria) and 15 000 in big job centres (for instance, in larger cities like Hamburg or Berlin).

Box I.1 shows some characteristics of the participants of the Perspective 50plus Programme[9] (first phase 2005–2007)

Box I.1: Key characteristics of the participants of the Perspective 50Plus Programme (2005-2007)

45% have been unemployed for more than 4 years

36% have health problems

8.2% have a university degree

42% are women

26% are migrants

Personal interviews or group information sessions were usually used as the first step of activation of the older long-term unemployed workers. In some job centres the clients were treated as volunteers, and in others the participation was compulsory. In most cases, the information sessions or personal interviews were mandatory, based on law. Afterwards, the next steps of the programme could be used voluntarily but still required a high degree of commitment.

After this "recruiting" phase, within the legal framework of the Social Code II and the institutional basis of the job centres, the clients were usually sent to the external bodies (training institutions, specialised personnel advisors, psychologists, trainers) and "treated" by a deeper "profiling" process, in order to find out more precisely their personnel strengths, weaknesses, barriers (which hinder the access to the labour market) and personal goals. However, it was evident that those job centres that co-operated very closely with the external bodies during the entire matching process were most successful.

Psychological profiles based on the Genesis software have been used, for instance, by the Pact named "Perspective 50Plus – Experience Pays Off" (Perspektive 50plus - Erfahrung zahlt sich aus) in the Ortenaukreis (Baden-Württemberg). This programme extracts job posts that match the profile of current unemployed job-seekers. Another, more biographical-oriented tool is the "Profile Pass", which was developed and certified on behalf of the German Federal Ministry of Education and Research.

After the profiling phase, the clients (*i.e.* the older long-term unemployed) were either directly placed into jobs, or, in most cases, they took part in different measures bringing them step-by-step closer to the labour market and removing barriers that prevented them from obtaining work.

In this phase, a broad variety of different tools were used, with the aim of re-integrating the older long-term unemployed into jobs: internships in companies, special training measures for job-seekers, in-company training for persons already placed in jobs, direct placement and open placement, start-up initiatives for those who wanted to set up their own business, health care measures and mobility incentives. Additionally, a "strong minority" (around 40%) of the pacts financed wage subsidies as an incentive for the companies to hire their clients. Wage subsidies have been applied more in the east of Germany and generally in regions with high unemployment rates.

The "Alliance 50plus", one of the pacts in East Germany (Uckermark und Mecklenburg Strelitz) defined three simple steps for integration: Job-Search-Phase, Job-Placement-Phase, and Job-Coaching-Phase. In the Job-Search-Phase they monitored the regional labour market with the following questions: Are there companies in our region that are ready to hire older long-term unemployed individuals? What are the needs and requests of these companies? What are the recruiting conditions? In the Job-Placement-Phase, they commissioned a training provider to find suitable clients, from the 50+ target group, for the available job posts through assessment centres and other methods. In this phase, a particular close co-

operation between the training provider, the case managers in the job centre, and the employers was necessary. The job centre offered up to €4 000 to the enterprises as a wage subsidy, but only for sustainable, standard job contracts. In the Job-Coaching-Phase, they offered services to both employers and clients in order to stabilise the work contract (Mentoring). For each phase, the pact's steering committee defined a concrete number of vacancies and work contracts that had to be achieved.

The "OPUS 50plus" pact in Leipzig[10] set up a team of experienced and well-skilled advisors recruited from the 50-plus target group. This team (equipped with a wide range of in-company skills and experiences) was sent to enterprises to inform them personally about the "Perspective 50plus" initiative of the Federal Ministry in general and about the special offerings of the regional pact in particular. They supported the recruiting processes of the companies, defined the requested profiles (*Anforderungsprofile*), organised interviews and provided financial incentives. They even filled in forms in order to ease the administrative procedures for the companies. Through thematic, focused and moderated workshops, direct contacts between employers and older long-term unemployed applicants have been organised and enabled.

In general, a major part of the activities of the pacts were focused on the demand side: how to open companies to the special needs of long-term unemployed? How to tackle prejudices? How to convince companies to hire older workers, highlighting (stressing) the advantages and strengths of older workers?

These questions in many cases led to promotion activities, by using the local press and other media, in order to make the public and the companies aware of the special needs and the particular difficult situation of older long-term unemployed workers. Moreover, some of the employment pacts started extended campaigns for achieving these goals, often in co-operation with advertising companies, involving, for instance, politicians or celebrities, who committed themselves to the initiative.

The federal competition or job award "Enterprises with visions/far-sightedness" (German: "*Unternehmen mit Weitblick*"), which took place twice in the first phase, and turned out to be a very successful instrument to activate and to increase awareness among enterprises for the special needs of older workers. The event was the final point of a longer process, which lasted up to one year. In advance, the regional pacts formulated their own criteria to find out: which company in the region provides the best prerequisites, circumstances, surroundings, conditions or labour place arrangements for older workers or older long-term unemployed individuals; and which company employs an exceptional or outstanding number of older workers (much better than the average). Each of the 62 regional pacts awarded "its" enterprise, as a result of a regional competition; the awarded companies then presented themselves, together with their regional pact co-ordinators, at a big federal event, chaired by the Federal Minister of Labour.

Impact of the initiative and evaluation evidence

In Germany, the employment rate of older workers (those 55 to 64) increased from 39.9% in 2003 (45.4 in 2005) to 48.4%[11] in 2006 and to 52%[12] in the second quarter of 2007. Over the last four years, the employment rate of older workers has increased by 8 to 12 percentage points, i.e., the development in Germany has been one of the most dynamic in all of Europe. The recent development in Germany is almost as dynamic as that in Finland or the Netherlands, even if the total numbers in terms of employment rates are still lower[13].

The rapid increase of the employment rate of older workers in Germany (in particular in the last two years) is closely connected to the increase in the total employment rate, which is also considerably high: in the second quarter of 2007 the German Employment Rate approximately met the EU Lisbon targets of 70%. Interestingly, in the last two years, the increase in the employment rate for older workers significantly exceeded the total employment increase.

There is a broad consensus that the success in Germany is due to the improved economic situation, occurring since 2006, which is believed to be due to the modern labour market reforms that were undertaken ever since 2003 (so-called "Hartz reforms"), and to the German government's Active Ageing Strategy and the legislation act called "Initiative 50plus".

As already mentioned, the "Perspective 50plus"-programme is part of this initiative. The "hard" outcomes of the two-year period of the programme (2005 to 2007) are shown in Box I.2:[14]

Box I.2: Selected quantitative outcomes of the "Perspective 50Plus Programme (2005-07)

More than **1 000** articles and features in the (mass) media as an indicator for dissemination of the programme

160 483 participants joined the programme

(approx.) 100 000 enterprises contacted (estimated by author)

79 670 older long-term unemployed workers have been activated through different measures (personal interviews, personal guidance, assessments, individual coaching or mentoring, small group working)

22 562 older long-term unemployed workers entered the regular labour market (acquired jobs)

32 335 participants in training measures

1 308 start-ups by older unemployed individuals

6 regional seminars for exchange of "good practices"

3 annual meetings of all "pact-co-ordinators" and other actors (setting up the "P50plus family")

3 annual events rewarding the most successful enterprises in the regions "Enterprises with visions" (job award)

The programme showed that it was possible for older, long-term unemployed workers to be re-integrated into the workforce in "astonishingly" high numbers, taking into account that most of them had been unemployed for more than three years[15] (see also Box I.1): at the end of the first phase, December 2007, more than 22 000 unemployed people aged 50+ were assisted in finding a new job on the open labour market and 73% of them were re-integrated into small (up to 50 employees) and very small (under 10) enterprises[16]. The majority of the unemployed people have been integrated without public wage subsidies.

This success, after only two years of programme implementation, seems to be the result of the very broad range of strategies and methods adopted[17] to take the different regional and local situations into account, and involving innovative, or very practical, but effective approaches. The skills of the mediators, case managers and external consultants also seem to have been an important feature.

Obviously the programme contributed to the general increase of the employment rate of 50+ workers in Germany. Employers who had hired through the programme in a non-representative sample of interviews made the point that the majority of jobs were new jobs. However, the number of people integrated into the labour market by the Perspective 50plus programme was too small in the relevant regions - in relation to the whole sample of all movements in the researched regional labour markets[18] - to find any significant or validated statistical effect concerning the increase or decrease of employment and unemployment in the regions[19].

The cost-efficiency balance is positive: the costs for "activation" and "(re-) integration" were on average no higher than the costs for the "Unemployment II Benefit" - payments[20] (for single persons), when compared over a one year period.[21] Moreover, the average integration costs for the older unemployed did not exceed the general average integration costs for all age groups of the job centres[22].

Box I.3: Average integration costs "Perspective 50Plus"

€9 940 per individual case (efficiency indicator Nr. 1)

€12 388 per individual case including overhead costs of the pacts (efficiency indicator 2)

The overhead costs include not only administration costs but also expenses for evaluation and case studies[23] and, in particular, they include the costs for public relations and campaigns. The latter should be seen as a dissemination or valorisation element at the end of the project, rather than as a permanent and substantial part within the whole variety of all pact activities, because raising the awareness of the special problems of long-term unemployed workers was one of the most important aims of the programme according to the "Call for proposals", June 2005 (see Chapter 2).

Moreover, there are a number of "soft" outcomes (with potential for transferability)[24]:

- The job centres received a kind of global grant from the federal government with very limited regulations and a high degree of freedom in regards to budgeting and action
- Flexible application of instruments and methodologies on regional (local) levels, adopted to the special regional or local needs
- Close co-operation between the job centres (i.e. public institutions) and the external service providers or other training companies
- Combination of individual coaching and small group activities fostering motivation to work and self-esteem
- "Perspective 50plus" as an innovation tool for the entire job centre institution with impact on other programmes and (target group) strategies
- The regional or local strategies were successful. Territorial employment pacts in the regions have been set up and already existing networks have been intensified and enhanced through the programme.
- In particular, regional and local companies were involved in offering vacancies for older long-term unemployed workers. Seventy-three percent of the jobs were found in small or (very small) micro-enterprises. However, the involvement of the main regional and local stakeholders and of larger companies did not work as expected.
- The "integration rate" (obtained jobs per region) was not directly linked to the regional and local labour market situation, *i.e.* there were no significant differences in job creation and mediation between areas with high unemployment rates, lagging economically behind, and areas with low unemployment rates, being economically advanced. A tentative explanation for this finding is

that the higher the local demand for labour, the lower the employability of those who remained in unemployment when the programme started.

- Establishment of a "Strategy Board" by the pact-co-ordinators and participating job centres as a bottom-up initiative

In addition, the evaluator – IAQ –highlights the following results in the presentation of the final report:

- The aim of establishing regional employment pacts for older long-term unemployed has been achieved, but there is a lack of integration of companies into the pact structure and activities.

- Most of the innovation can be found in the sector of "activation measures" (such as individual coaching and group empowerment), less in the sector of "integration measures". The latter finding may be due to the fact that all conceivable tools and instruments in this sector have already been tried and tested.

- The quantitative integration rate, in relation to the activation rate (about 20%), can be seen as a positive result (keeping in mind the particular prerequisites and the special situation of the target group) (see also Box I.1).

- The awareness or consciousness of the public opinion and particularly of the enterprises in the regions was influenced in a positive way through the programme, but there is a lot more to do.

- More attention should be paid to the gender mainstreaming aspect in general and to a higher employment and integration rate of female workers in particular.

Strengths of the initiative

Since the 1970s, the labour market policy in Germany has traditionally been highly centralised on the basis of statutory federal instruments implemented by the "Bundesagentur für Arbeit" (Federal Labour Exchange/Federal Public Employment Service) and supervised by the Federal Ministry of Labour and Social Affairs.

The "Perspective 50plus" programme was the first federal programme of the ministry to address regions and local areas[25].

The evaluation showed, as an interim result, that this new strategy was very successful, because the impact on additional employment opportunities and on the growing openness of companies to employ older workers was surprisingly high. It is common view that the regional (local) approach, in combination with free budgeting (global grants for the regions under the responsibility of the regional or local actors), were important reasons underlying the success.

It is important to note that the successful combination of a relatively "free budget", a regional approach and high flexibility of the instruments can be seen as a model that can have (in the mid and long term) impact on the general approach of the German labour market policy, because even today the main approach of German labour market policies is connected with centralised instruments designed and delivered by the Federal Public Employment Service.

The programme was innovative (according to the evaluation report) because it was not compulsory that the job centres take part. The project was implemented by an idea competition on a voluntary basis.

Some of the methods to activate older long-term unemployed workers were innovative as well. In a survey, 79% of the participants of the programme noted they were "content" or "very content" with the programme[26].

In terms of successful integration and sustainability, it turned out that individual approaches with a very low rate in regards to the relation between applicants and personnel advisors or case managers (1:20, whereas the average in German job centres is more like 1:150) and, in particular, individual coaching processes, before and after successful placement, have been very helpful, effective and necessary as well.

The two main success factors of the programme were:

- The individual approach to unlock the very small (up to ten employees) and the small enterprises (up to 50 employees) and convince them of the potential of older workers. This was accomplished directly in the local areas by reliable and well-skilled consultants with a deeper knowledge of the region (*i.e.* face-to-face contacts to the enterprises).

- The individualised and very personnel approach with regard to the older unemployed or job-seekers, predominantly no longer able to be active without a "helping hand" (*i.e.* external support by coaching processes, mentoring).

Considering the findings of the 50plus programme, the German Parliament has, in the meantime, passed a new law which foresees a minimum of a six-month phase of activation. This activation phase is now obligatory for all long-term unemployed workers who want to benefit from the new § 16a Social Code II, which enables long-term publicly subsidised jobs in the private or non-profit sector for the most disadvantaged amongst the unemployed. Another goal of the programme has also been achieved[27]: the "Perspective 50plus" contributed to a new federal legislation act.

Thus, the strategy and the outcomes of the "Perspective 50plus" programme are not only limited to older workers or older unemployed people: through the programme, new pathways to work (how to re-integrate long-term unemployed people into regular jobs) have been tried and tested.

The German labour market has developed positively since 2006: at the end of 2007 there were one million fewer people out of work than one year earlier, from January 2005 to December 2007 the total number of registered unemployed decreased from 5 million to 3.5 million.

A particularly hopeful trend is that those with jobs are remaining at work and those out of work are increasingly successful in finding jobs. There is a great deal more vacancies and job opportunities than in previous years. Also the number of long-term unemployed people in Germany was down compared to previous years, indicating that the positive economic picture (growth rate 2007 in Germany: 2.5%) has also had an impact on the long-term unemployed.

It is quite clear that the modern labour market reforms in Germany (launched in 2003) are not genuinely responsible for the positive economic development, but the reforms lowered the threshold of job creation: whereas in the past a growth rate of 2.5% was necessary to create a significant number of additional jobs; after the reforms, a growth rate of roughly 1.5% or less already had an impact on job creation.

The "Perspective 50plus" programme confirmed this trend and made an individual contribution for more and better employment focused on the 50-plus age group.

Besides these general trends, the Perspective 50plus programme designed, developed, and implemented certain methods and instruments that are responsible for its success:

The "Strategy Board", a bottom-up initiative (see above) of delegates of all 62 pact co-ordinators, involving 93 job centres of the first phase of the programme, emphasised the following strengths of the programme in the so-called "Kasseler Memorandum" (June 2007)[28]:

- *Flexibility*: The Federal Ministry enabled in the "Perspective 50plus" Programme a kind of flexibility which is unusual in the normal operational and daily work of the job centres. New ideas, new instruments, and new projects could be implemented during the duration of the programme; projects which failed could be ceased or cancelled and replaced by more successful projects or instruments. New, unusual instruments have been tested. Regional competences have been seriously taken into account by the Ministry. The decision-making process has been shifted to the regional or local level in a substantial way. The free combination of different instruments contributed to the success.

- *Freedom of budgeting*: Freedom of budgeting – which was set up independently from the regular budget and with the possibility to transfer resources from the previous to the following year – seems to be an innovative administrative approach that should be introduced generally.

- *Combination of resources*: The additional resources of the programme allowed for increased attention to the special needs of the age group 50plus. Moreover, the resources of the programme could be connected with the resources of the regular budget of the Social Code II or with those of the European Social fund as well as with private resources. The combination of resources and the combination of the potential of the job centres and external bodies has proven to be very creative.

- *Quality management*: The accompaniment of a formative evaluation (IAQ) and a service provider (gsub) - the permanent exchange was organised by the service provider - was very useful for developing quality standards through intensive exchange of information and knowledge, good practice, and benchmarking processes.

- *Sustainability and Transferability*: The successful projects, the good practise experiences, the best instruments, and methods developed by the employment pacts should be provided to all other job centres across Germany that were unable to take part in the programme so far. They should be transferred and mainstreamed by the Federal Ministry.

Weaknesses of the initiative

Despite the undoubted success of the programme, the job centres across Germany emphasised that about 30% of all unemployed individuals registered with them cannot realistically be expected to go back to work in the short- to mid-term. This relatively high percentage is not really surprising given that 95% of all former social welfare recipients (*i.e.* before the Hartz-IV reform) are now registered with the job centres. This means that economically inactive people, who in other European countries (like in Wales or U.K.) are in receipt of an "incapacity benefit", "disability benefit", or other insurance-based income, have been "transferred" in Germany to the active labour market system, receiving "Unemployment Benefit II"[29] as well as active labour market support. These can be older people who have been out of work for more than 5 to 10 years, people with health problems, people with drug abuse issues, or those facing debt or other obstacles. However, they also include more strongly motivated people who for a variety of reasons have been unable to find work for several years, including, for instance, lone parents, people with third-level qualifications, formerly self-employed, etc.

This was the background to the debate, which developed in Germany last year, on the need for a "third" or "socially oriented" labour market sector that should provide employment to those who would have little chance on the open labour market.

This political debate led to a legislation act that has been put into practise as the amendment 16a of the Social Code II in October 2007 (see also above, Chapter 3). This new paragraph now enables unlimited publicly subsidised jobs for those who seem to have no chance to enter the regular labour market.

Nevertheless, the "Perspective 50plus" programme is still strongly oriented to regular jobs on the "first" labour market, taking into account, that so-called "hard-to-reach-groups" cannot be entirely covered by the programme. Critics complain that the "Perspective 50plus" programme does not provide solutions for those who are very far from reaching the labour market.

The new strategy for the second phase of the programme "Perspective 50plus" (2008 to 2010) in response to this "weakness" is to extend and intensify the so-called "activation phase" to six or nine months and to concentrate more on the most vulnerable groups amongst the age group 50+. During this phase, everything will be done to remove the barriers that hinder a person from entering the labour market. If an individual is not ready for a job on the regular labour market after completing this intensive phase, he or she will be given the opportunity to work in the publicly subsidised sector.

An significant weakness of the "Perspective 50plus" programme is the low share of women obtaining a job through the programme (only 32%).

Thus, one main objective in the follow-up period 2008 to 2010 will be to raise this number by attracting more (older, long-term unemployed) women to join the programme. This requires a deeper analysis of why older women tend "to avoid" the labour market (for instance: family role models defining them as "housewives", care for relatives, early retirement culture, less appropriate jobs etc.).

Despite the undoubted efficiency of the initiative[30] one can say that €250 million for the first two-year period is a lot of money in relation to the outcomes.

For the new three-year-period an amount of €270 million has been earmarked in the federal budget. The quantitative objectives for the new period are now 50 000 additional jobs for older unemployed people (versus 22 000 in the previous period) and 200 000 "activations" (versus 80 000 in the previous period). According to the new objectives, the cost per "Job-Reintegration" will decrease to €5 400 on average, versus roughly €12 000 in the previous period (see Box I.3).

The concentration on the younger of the older workers has been identified as another weakness of the programme. The age cohorts 51, 52, 53, and 54 are those with the highest integration rates and the ones most likely to find work. Unemployed individuals older than 58 have not been as successfully reached and integrated into the programme, and this effect is partly due to the legislation, however, in the next phase (2008–2010), there will be more attention paid to the 55-plus (and in particular to the 58-plus) group.

Finally, in the new period, more attention will be paid to the health problems of the older workers as one of the main barriers preventing them from work.

Potential transferability

In terms of labour market issues, the main problem in Wales is not the unemployment rate (like in Germany), which is less than 5%, but instead the economic inactivity rate, which is at 25% of the total working age group[31]. In total, 60 000 Welsh people are unemployed, but 400 000 are economically

inactive. Thus, a first general transferability element could be the transfer of experiences from Germany to Wales concerning the German "Modern Reforms on the Labour market" since 2003.

Through these reforms, the economic inactivity rate in Germany decreased significantly and rapidly and (even more importantly) most of the former economically inactive people have been transferred to the labour market system (see above). This is not only a question of classification but also a question of how to reach those groups with high barriers to the labour market in order to move them actively step-by-step to employment. Since 2005, in the German system, all unemployed and economically inactive people can take part in active labour market measures - *i.e.* skill upgrading, training, mediation processes, company internships, publicly subsidised work programmes, and other activities - and they have to participate, otherwise they are threatened by sanctions (obligatory personal interviews for all).

Although the number of older people with work increases less dramatically than in other European Countries (P 39), parts of Wales have seen significant inflows of older age groups, having an impact on the labour market as well. Presumably there are, amongst the unemployed and economically inactive individuals, a high proportion of older workers, in particular, in areas of former declining industries (mining industries and others). Therefore a strategic approach like the "Perspective 50plus" programme may be also relevant for the Welsh circumstances.

Moreover, there are a lot of similarities between Wales and Germany that may be interesting for exchanges of mutual benefit:

The culture of "early retirement" that has been dominant in Germany (at least until 2003, and partly still today) is also an important topic in Wales, predominantly concerning women.

As in Germany, and in particular in our "Perspective 50plus" programme, to provide individually tailored solutions and personal advise to help long-term unemployed individuals find work is also an important issue in the Welsh employment policy (see "Department of Work and Pensions", Wales). The most important individual factors of economic inactivity in Wales are long-term work-limiting health conditions (P 76), and other personal factors, most notably skills and family care. Therefore, the government is committed to encouraging and assisting those currently unemployed or economically inactive in developing employment opportunities.

In Wales, as in Germany, the need for coherent action, taken forward in partnership at a local level, is part of the political strategy that should be fostered and extended.

Contact details

Dr. Reiner Aster
Managing Director gsub – Gesellschaft für sozialeUnternehmensberatung mbH
Oranienburger Str. 65
10117 Berlin
Phone +49-30-28409-100
Fax: +49-30-28409-110
reiner.aster@gsub.de
www.gsub.de

ENDNOTES

1. Eurostat EU LFS 2006

2. The rationale behind these issues can be found in the document of the “call for proposals” as an idea competition in June 2005. The document is only available in German: "Ideenwettbewerb des Bundesministeriums für Wirtschaft und Arbeit, Beschäftigungspakte für Ältere in den Regionen – Bekämpfung der Arbeitslosigkeit bei älteren Langzeitarbeitslosen und Wiedereingliederung in den Arbeitsmarkt durch Entwicklung regionaler Lösungen und die Förderung regionaler Initiativen", Bekanntmachung des Bundesministeriums für Wirtschaft und Arbeit vom 15. Juni 2005

3. Until 2007, about 30 000 have been realised

4. In the following I will use the term “job centres” for all types of local bodies that have been established after the huge modern Labour Market Reform, which began in 2003. There are three types of bodies that have been set up under the 4th legislation act, the so-called “Hartz IV” act, in the year 2005: firstly, the “joint agencies” (ARGE`n), a kind of “merger” formed by the local authorities and the local branch offices of the Federal Public Employment service; secondly, chosen local authorities (“Optionskommunen”), acting on their own; and, thirdly, local branch offices of the Federal Public Employment service, acting on their own (“allein handelnde Agenturen”). These bodies have no legal rights for the unemployment benefit I, payed by insurance. Since 2005, they have been in charge of the so-called “Unemployment benefit II”, payed by tax. The unemplyoment benefit II replaced the former “unemployment assistance” (“Arbeitslosenhilfe”) and the social benefit; for all who are assessed as able to work at least 3 hours a day.

5. Institut Arbeit und Qualifikation IAQ), at the University Duisburg-Essen: Evaluation of the first phase of the Federal Programme "Perspective 50plus – Employment Pacts for the Older in the Regions (2005–2007)", Final report, 10 December 2007” (available only in German). Both companies (the IAQ and the gsub mbH) were commissioned by the Federal Ministry of Labour and Social Affairs.

6. The results and outcomes of this evaluation are partly integrated in this paper. The evaluation is only available in German: Institut Arbeit und Qualifikation (IAQ), Universität Duisburg-Essen, FB Gesellschaftswissenschaften, Renate Büttner/ Matthias Knuth/ Stefanie Neuffer/ Sabine Neukirch/ Oliver Schweer/Tim Steegmann: Evaluation der ersten Phase des Bundesprogramms "Perspektive 50plus – Beschäftigungspakte für Ältere in den Regionen" (2005–2007), Endbericht, 10. Dezember 2007, in the following: IAQ Final Report, 2007

7. For explanation of the term "job centre", see footnote 4

8. Programme of the European Commission in the last period of the Structural Funds 2000–2006

9. Source: IAQ Final Report, 2007

10. Similar to the "Leila 50plus" pact in the region of Aschaffenburg

11. Eurostat

12. Information from the Federal Ministry of Labour and Social Affairs (Eurostat)

13. The positive development in Germany seems to be widely unknown in Europe, perhaps because this is quite a new movement covering mainly the last three years

14. Source: gsub monitoring system 2007

15. 45% of them were unemployed longer than four years, 36% had health problems, IAQ 2007, P 159

16. Findings of the evaluation, IAQ 2007, page 167

17. See also the second section of this paper.

18. Since it was not possible, due to a concomitant change of Public Employment Service software systems, to identify participants in the administrative database and compare their trajectories with those of matching non-participants, the evaluation had to resort to a comparison of participating regions with non-participating regions.

19. Findings of the evaluation, IAQ 2007, page 168, method: calculation based on the Propensity-Scores. The whole evaluation included: 1) an analysis of regional effects (comparing each pact region with a comparable non-pact-region); 2) an analysis of efficiency; 3) synopsis of outcomes and types of pacts; 4) survey of participants (questionnaires by telephone and through focused group interviews); 5) deepened analysis through case studies of one third of the pacts

20. See footnote 4

21. Due to the two year duration of the project and the evaluation, it was not possible to measure long-term effects

22. Presentation of PD Matthias Knuth, IAQ, on the Regional P50plus Conference in Bamberg/ Germany, on February 26th 2008

23. Roughly half of the pacts commissioned their own evaluation

24. Findings of the evaluation, IAQ 2007

25. 453 so-called "Joint Agencies" ("job centres") or "Local authorities" (Optionskommunen) across Germany, in terms of this report: job centres.

26. Findings of the evaluation, IAQ 2007, P 165

27. See Chapter 1 of this paper

28. Available only in German

29. See footnote 3

30. See Chapter 3, Table 3 of this paper

31. According to the figures of the Consultation document "Wales: A Vibrant Economy" (November 2005)

"LETS GET MOVING" INITIATIVE (UNITED KINGDOM)

Anne E. Green
Institute for Employment Research (IER), University of Warwick, UK.

Rationale for the initiative

Problem to address

Merseyside has had European Union (EU) Objective 1 status for two successive terms (1994-2000 and 2000-2006[1]) in recognition of economic performance lagging behind the EU average. The sub-region is characterised by low levels of output and high levels of worklessness. There are particular concerns about social inclusion in the so-called 'Pathways' areas, which are 38 neighbourhoods across Merseyside (including inner city areas and outer estates) suffering high levels of unemployment and a complex interplay between multiple forms of deprivation.[2] In these areas there are significant problems of low employment, poor skills and limited travel horizons (such that many people feel unsure of travelling to areas they are unfamiliar with), low car ownership, and often poor public transport to key regeneration areas and to meet the demands of shift-working and a 24/7 economy. For those individuals who can command only poor wages, the relative cost of transport is high. Hence the availability and cost of transport is one of a number of barriers facing workless people in taking up employment.

Policy context

In a report entitled "Making the Connections" published in 2003, the Social Exclusion Unit[3] highlighted transport problems and inaccessibility as reinforcing social exclusion for disadvantaged people, preventing access to training, education, services and work.[4] The initiatives outlined in this paper are set in the context of the Merseyside *Local Transport Plan* (LTP), which provides a long-term strategy and investment plan for improvements in transport infrastructure and services across Merseyside. The LTP is produced by the Merseyside LTP Partnership, which consists of Merseytravel (the Merseyside Passenger Transport Authority and Executive)[5] and the five district councils of Merseyside (Liverpool, Sefton, Knowsley, St Helens and Wirral). The first LTP covered the period from 2001 to 2006, with reports on delivery being submitted to the Department for Transport on an annual basis. A second LTP covers the period from 2006 to 2011.[6] A fundamental part of the LTP is the *Merseyside Accessibility Strategy*, in which accessibility and connectivity are essential elements in supporting regeneration and inclusivity. Key priorities of accessibility planning set out in this strategy are access to employment, education, healthcare and food.

Description of initiative

Objectives

Through a number of linked initiatives Merseytravel aims to promote social inclusion on Merseyside by overcoming those transport barriers which impact on individuals' ability to access opportunities. Here the main focus is on opportunities to employment, training and education (although there are also concerns with access to other essential services, and links with issues such as health). This reflects the fact that the

top priority in the work on accessibility, that Merseytravel undertakes jointly with partners, is to address the high levels of worklessness across the Merseyside City Region. As noted in the first section, transport and accessibility are key ingredients in tackling this.

Activities

Merseytravel and partners have a long history of implementing public transport initiatives to promote social *inclusion. This paper is concerned specifically with three key projects delivered under the "Lets Get Moving"* banner, initiated following a successful bid for European funding to support the Accessibility Strategy in Merseyside. The three inter-linked projects (*Neighbourhood Travel Teams*, *Workwise* and *Dial-a-Link Demand Responsive Transport* services) have built upon experience of previous good practice and pilot initiatives in Merseyside.

Neighbourhood Travel Teams in each local authority district aim to promote use of public transport and other transport solutions at local level and to enhance access to opportunities, by assisting people who would not normally seek travel information or who are unable to access information through mainstream provision. The Neighbourhood Travel Teams that are part of "Lets Get Moving" build on earlier experience in Halton[7] (a district adjoining Merseyside) and pilots in Knowsley and Wirral. They promote the use of public transport at local level and provide free *face-to-face* travel information advice and bespoke journey planning services to meet individuals' needs. They might also provide *travel training*, which involves guiding individuals and boosting their confidence in using public transport (either for travelling to work or to get to key service locations). For example, a travel trainer might arrange for a person to be driven along a route in the first instance in order to show them what it is like, accompanying them on early journeys, etc. The idea is to give individuals the confidence to move out of their 'comfort zone'. The rationale for the project is that the provision of travel information and advice in community locations raises awareness of transport services and the support available to help people reach training and employment opportunities. The work of the Neighbourhood Travel Teams is not focused solely on the use of public transport: Neighbourhood Travel Teams also promote the Merseyside Car Share Scheme and formal/ informal or site-based car sharing, as well as personalised journey planning for walking and cyling.

The Neighbourhood Travel Teams tailor their services to be responsive to particular local circumstances. In Halton, for instance, the Neighbourhood Travel Team, Jobcentre Plus, employment agencies and advice and guidance service providers came together to pilot the Link2Work project. In order to address a two-fold problem of first, access to work for shift patterns falling outside of normal public transport operating hours and second, access to employment at some of the more inaccessible business parks, a subsidised taxi scheme has been established, providing transport for residents who live and work within the local authority area and who have no other means of getting to work. The service has proved to be successful as a stepping stone to employment.

The Neighbourhood Travel Teams also play an important role in signposting individuals to *Workwise* and *Dial-a-Link* projects (see below) – for example, they disseminate information about travel passes and the availability of Dial-a-Link services, and at a strategic level they can play an advocacy role with transport providers, employers and other stakeholders for improvements in transport services. Hence, the Neighbourhood Travel Teams are a key hub in both delivery and dissemination activities relating to transport and accessibility. Their strong linkages to local communities and to other projects and partners mean that they are well-placed to provide intelligence to ensure that policies implemented are appropriate to local needs.

Workwise tackles both perceived and actual transport barriers to employment, education or training for those not currently engaged in such activities by providing financial and practical help for eligible

residents.[8] It was established in 2005 as a Mersey Dee Alliance[9] project, but has been rolled out across the Merseyside city region under the "Lets Get Moving" banner. Key Workwise schemes include:

- *Travel passes* providing up to a month's *free public transport* for residents of target areas travelling to interviews, training and employment.

- *Workwise Wheels to Work* - providing up to six months' loan of a bicycle, equipment and training for eligible residents.

- *Scooter Commuter* – up to six months' loan of a scooter complete with training, insurance and personal protective equipment.

- A series of '*How to get to Guides*' providing detailed information on transport links to specific sites of employment and education. Interactive maps of key employment and education sites and travel routes have been produced for use by partner organisations and clients. A search facility allows users to look for employment sites that are easily accessible to them and provides details on public transport links to the sites and how to find out about opportunities at that organisation.

Demand Responsive Transport (DRT) services aim to provide links between residential and workplace locations where other public transport services are unsuitable. *Dial-a-Link* (the third "Lets Get Moving" project) provides six services on a wholly DRT basis to complement existing Joblink bus services.[10] The "Lets Get Moving" Dial-a-Link Service and other DRT services have built upon the experience of an earlier transport project with the Mersey-Dee Alliance which was concerned with linking workless people in Merseyside with jobs in Deeside (in order to address geographical mismatches between jobs and where people live). These services are offered alongside complementary services provided by the Merseyside community transport sector, which aims to provide transport for the benefit of socially excluded communities. In a 'spin off' project in St Helens district the St Helens Chamber (an employer group), St Helens Council and Merseytravel have entered into a partnership with Arriva (a bus service provider) to pump prime a new bus service to the Haydock Industrial Estate – a key employment location where employers were struggling with recruitment and retention of staff due to poor transport links.

Delivery arrangements

Partnership working lies at the heart of delivery. Merseytravel works as a member of all of the Merseyside Local Strategic Partnerships[11] to deliver the shared transport targets in the Local Transport Plan and the Access Plan, and has a dedicated Partnership Officer to support this area of work. Merseytravel also works closely with Jobcentre Plus at a *strategic level*.[12] Other partners concerned with interventions in employment, education and training domains include the Learning and Skills Council, Connexions (concerned with helping young people in England with decisions about education, training and employment), St Helens Chamber (see the example above) and the North West Regional Development Agency. Partnership working also extends to include a range of voluntary organisations, especially those working with workless or otherwise socially excluded groups.

In 2007 Beacon status[13] was sought in recognition of the work undertaken in Merseyside by Merseytravel and the emerging City Region Partnership on 'Improving Accessibility'. In March 2008 Merseytravel and the five local authorities on Merseyside (Liverpool, Sefton, Knowsley, St Helens and Wirral plus Halton Borough Council), were awarded the prestigious Beacon status. The partnership also earned a Special Commendation for demonstrating outstanding performance. The Beacon assessment cites the work on 'Improving Accessibility' as "representing an example of strong partnership working across a wider area of Merseyside. Key barriers to accessibility have been targeted and there are good examples of

effectiveness and outstanding community engagement. There are many aspects of the work of partners which merit promotion under the Beacon banner."

Budget

The budget for "Lets Get Moving" is GBP 3 million, obtained as a result of a successful bid for European Funding (ERDF Objective 1, measure 29b). This budget relates to the period from December 2006 to December 2008 and is targeted at the Pathways areas in Merseyside. Merseytravel and partners have sought to lever in additional funding from other sources to supplement activities and to encourage mainstreaming. This strategy has been successful, with extra funding for additional related activities having been obtained from the Neighbourhood Renewal Fund (NRF), Local Economic Growth Initiative (LEGI) funding and via local authority funding in various parts of Merseyside.[14] Partners centrally involved in the initiative believe that such funding for transport and accessibility projects would have been unlikely to be forthcoming if "Lets Get Moving" had not happened.

Impact of the initiative and evaluation evidence

Outputs

In the period up to November 2007 (*i.e.* within the first year of operation of "Lets Get Moving") the *Neighbourhood Travel Teams* had provided information/ bespoke support of any kind on 3 067 occasions.[15] Over the same period there was an increase of 2 700 in the number of Pathways residents using public transport to access employment, training, education and health care. 76 individuals have received travel training and of these 80% subsequently made their journey successfully.

Under the "Lets Get Moving" banner a *Workwise* project to overcome transport barriers to worklessness has been established in each of the local authority districts in Merseyside (as outlined in section 'b'). In the period from April 2007 (when the project became operational) to November 2007 the number of Workwise Travel Cards issued was 2 781. 58 people have used the Scooter Commuter scheme and 48 have used Wheels to Work. Overall, 2 887 Pathways residents were assisted by Workwise interventions over the period to November 2007. Numbers assisted in specific target groups were as follows: women (497), members of Black and Minority Ethnic groups (134), lone parents (165), homeless (9) and ex-offenders (56).

Six *Dial-a-Link services* have been established. In the period to November 2007 these had been used by 287 new members. The services had also been used by 588 people who had previously used Joblink services. 13 187 passenger journeys had been made.

Outcomes

In terms of initiatives designed to tackle worklessness, it is important not only for individuals to gain employment but also to be able to sustain employment. Ideally, a job that a workless person is helped into will be the first step on a career ladder. Therefore, it is crucial to be able to offer continuing help/ support to individuals, so that they can build up their work experience, etc. Of those individuals who were supported under the Mersey Dee Alliance project, 79% who were given support were still in employment two years later. The indications from the first year of "Lets Get Moving" and the earlier pilots indicate that the intervention rate is very high with, for example, 80% of Liverpool Neighbourhood Travel Team's clients who responded to tracking being in work or training 13 weeks after the assistance given. The Scooter Commuter clients are still in employment or training as they have to evidence continued need to retain the use of the moped. Emerging evidence suggests that elements of Workwise initiatives such as the Scooter Commuter scheme have wider benefits than merely providing a means of travelling to work in the first instance. Under this scheme the scooters are available for six months, so giving an individual time to

make other arrangements for travelling-to-work subsequently – *e.g.* by making contacts to share a lift to work, buy a scooter/ motor-bike/ car with earnings from employment, etc. Importantly, the loan of a scooter for a period of up to six months enables a scheme member to build up a credit history (via the individual signing a contract to agree to maintain the scooter and make a token loan payment) while also developing an employment history. Building up an employment history and a credit history is important for an individual coming off welfare benefits for the first time.

Case studies are one means of highlighting the impact of interventions at an individual level. For example, the Wirral Travel Team refers to the case of Jamie, with whom they engaged in July 2007. Jamie had been unemployed for four months. A journey plan was produced for Jamie, along with a travel ticket, so that he could attend an interview. He was unsuccessful on that occasion, but six weeks later he secured a job and the Travel Team arranged a month's bus pass, enabling him to travel to various offices on the Wirral as part of his new job. The Sefton Travel Team cites the example of John, who contacted them after hearing about the Scooter Commuter scheme through Sefton@Work[16] and Connexions. He had gained employment as a games tester at Wavertree Technology Park in Liverpool, but there were transport issues in travelling from his home to his new job, compounded further by the fact that he would not finish work until after midnight, at a time when there was no public transport. John passed the eligibility for the Scooter Commuter scheme, but his case then presented another issue: John did not have a provisional licence. Due to the tight timescale before John was due to take up his post, it was necessary to complete a fast track application and via Connexions the Travel Team was able to assist with the funds to pay for John's Provisional licence. Hence, through transport interventions facilitated by partnership working, John was able to take up an opportunity to work in a job he had very much wanted to do, but had thought he would have to turn down due to lack of transport.

Effectiveness

There is ongoing monitoring and evaluation of the "Lets Get Moving" projects to ERDF standards and this helps generate evidence on effectiveness. In the initial stages of the project there has been particular emphasis on monitoring. Such monitoring information highlighted that the take-up of Travel Cards in the period April 2007 to November 2007 surpassed the targets set for the 2-year life span of the initiative. Hence it has been necessary to go to other budgets to fund the issue of such passes.

There is also an emphasis on information collection for formative evaluation. For example, the Neighbourhood Travel Teams conduct customer satisfaction surveys and tracking surveys. The information gathered from such surveys and from project management information systems is used for formative evaluation purposes, in order to inform and adjust provision on a continuing basis. To supplement monitoring information and to further enhance the effectiveness of policies, Merseytravel and partners attend local Community Empowerment Networks and local area fora to provide information and collect feedback from local communities and service users. Feedback is used to enhance services – for example, routes of Joblink buses and DRT services and operating times have been set as a direct result of feedback from service users.

Merseytravel is recognised as a leader in the UK in the field of transport initiatives to address social inclusion and in accessibility planning, as demonstrated by the award of Beacon status and their associated Special Commendation. Several of the initiatives undertaken by Merseytravel over the years have been subject to formal evaluation and experiences have been shared with authorities from other parts of the UK. Internationally, Merseytravel was a partner in a European Commission project ECLIPSE (European Cooperation and Learning to Implement Transport Solutions to Combat Exclusion)[17] and has featured in the UK National Report for an International Study concerned with 'Evaluating the Contribution of Transport Projects to Welfare to Work'.[18] For example, the evaluation of the Halton Neighbourhood Travel Team in the latter report included results of a survey on the use made of Personalised Journey Plans by

those who had received them (two-thirds of respondents had used them regularly), while a survey of users of Joblink services in Wirral indicated that 70% of respondents who had started a new job said that it would be 'not possible' or 'quite difficult' to get to work without the Joblink service.

Efficiency

At the end of pilot projects calculations have been made as to the cost and effectiveness of particular interventions[19] and similar calculations will be made when the "Lets Get Moving" projects come to an end and information on the total number of individuals assisted is available. Transport and travel initiatives are often perceived to be 'expensive', but by their very nature they often have important cross-domain impacts – for example, on reducing worklessness, improving health, etc. The costs of information-related services are particularly complicated to calculate. Evaluation of the operations of the Halton Neighbourhood Travel Team (which helped inform the "Lets Get Moving" initiative) suggests that the cost per journey plan seems high at face value but this amount needs to be considered against the possibility that having the information set out in a Personalised Journey Plan may make the difference between the feasibility of taking a job and not taking up a job opportunity at all, and the fact that the amount is less than the cost of two weeks' Jobseekers Allowance benefit payments. Ideally, cost calculations need to be set against the costs of keeping people on benefit, the issues of poorer health, poorer educational performance of children of people out of work, etc.

An example of the extent to which a low cost intervention can achieve important results is the provision of a bicycle to a household, which enabled two adults of working age to take up full-time paid employment. The use of the bike allowed them to share childcare responsibilities through reduction of travelling time and freedom to take shift work at times when public transport was not available. This highlights the potential of relatively simple interventions to transform the economic and social status of a household by addressing transport barriers. Transport barriers can be addressed by a variety of different actions which can be as inexpensive as providing accessible information to funding new bus services to locations at times not served by mainstream commercial public transport. Provision of something as simple as a daily travel pass costing just a few pounds can make the difference between an unemployed person taking up a job opportunity or not. Relatively, all of the interventions available under "Lets Get Moving" are low cost, with the simplest being provision of a personalised journey plan. Other interventions can be a daily, weekly or monthly travel pass to assist with access to an interview or to enable the take up of an initial offer of employment or training opportunity.

For example, St Helens Neighbourhood Travel Team highlighted the case of Mrs A, who had been unemployed for over twenty years whilst bringing up her children as a single parent, and had been trying for some time to get back into employment that offered shifts to accommodate her childcare needs. In order to attend a recruitment session for a new Tesco store Mrs A applied for a Workwise travel pass, and was also offered necessary financial help for when she attended the interview and started work (since wages are paid a month in arrears). Sometimes several interventions are necessary in order to commence training or employment, as illustrated by a case study from the Liverpool Neighbourhood Travel Team. Victor was referred to the Travel Team by Progress2Work.[20] He was embarking on a change of direction and was undertaking study and training to facilitate this. His courses of study and training were taking place with a variety of organisations and his travel needs were extensive. He was provided with a travel pass for one month for the Liverpool area, and as he needed to travel to Manchester for part of his training he was referred to the Scooter Commuter scheme.

Strengths of the initiative

What worked well?

Most elements of "Lets Get Moving" are working well. *Strong partnership workin*g is a key strength of the initiative and was commended as such in the Beacon award citation. Work takes place across local authority boundaries, including in the adjacent district of Halton (in neighbouring Cheshire) which is functionally part of the Merseyside city region. In terms of *delivery*, the *inter-linkages* between the three "Lets Get Moving" projects and *links to other mainstream services* have worked well.

What was innovative?

A particularly innovative feature of the "Lets Get Moving" bid was to use existing spending on transport as match funding. In terms of implementation, there is recognition that a 'one size fits all' approach will not work; rather there is a need to target messages for specific groups (and here Merseytravel and partners have been keen to learn from others on targeting particular audiences). For example, Liverpool's Neighbourhood Travel Team has recruited a member with Arabic language skills and has a broad range of contacts with the African and Caribbean communities in the Toxteth and Granby areas of the city, which is one of the most disadvantaged wards in England. There are plans to develop further work on equality and to introduce a Diversity Audit.

Reasons underlying success

At the outset, Merseytravel's history of *experience* and success in implementing transport initiatives/ pilot projects to promote social inclusion was instrumental in gaining £3 million support for "Lets Get Moving". Partnership working has been identified above as working well and at a *strategic* planning level close collaborative working arrangements between partners are believed to be fundamental to success. Links with the community and voluntary sector at neighbourhood level have also been fundamental to successful delivery. Although use has been made of conventional hard copy and Web-based dissemination methods to promote projects, 'word of mouth' has proved to be the most important source of referrals/ recruits to information and advice services and transport schemes. In a similar vein, the use of a *person-centred approach* in travel training and in information and advice services provided by the Neighbourhood Travel Teams is fundamental to success.[21] The fact that the advisers are *embedded in the local community* and are knowledgeable about specific local barriers and issues means that the services delivered can be tailored to local needs. Likewise, the fact that they are viewed as *supportive* and *independent* of organisations which might be associated with welfare benefit sanctions is also an important factor in take-up of services (a similar service delivered by say, Jobcentre Plus, might not be so successful).

Weaknesses of the initiative

Obstacles or problems that emerged during the design or the implementation of the initiative

As noted in previous sections, Merseytravel and partners have a history of experience in transport-related interventions from which to learn and so obviate weaknesses in initiative design and implementation that might occur in situations of relative inexperience. However, part way through the life of the initiative it is possible to identify two areas where difficulties have occurred: first, 'selling' the idea of Neighbourhood Travel Teams in some of the local authority areas; and secondly, targets not being met in the *Wheels to Work* project.

Quality of response taken

The difficulties experienced in 'selling' the idea of Neighbourhood Travel Teams in some of the local authority areas were identified as stemming from the fact that in some local authorities (*e.g.* Liverpool) transport and accessibility to employment and services were not perceived as a problem. With additional emphasis on highlighting the fact that transport and accessibility can be problematic, after a slow initial response in some instances, all authorities have recognised the value of the initiative and have provided additional funding to supplement "Lets Get Moving" activities.

The response to the shortfall (at the time of writing) in take up of the *Wheels to Work* "Lets Get Moving" project has been to adopt a more flexible approach, which includes going to employers and making bicycles (which are relatively low cost) available at workplace locations. Increased investment has been made across Merseyside in cycle training,[22] and it is hoped that by linking the Wheels to Work scheme to such training there will be an uptake in usage in the medium- and longer-term.

Potential transferability

What are the main lessons for Wales and places similar to Wales?

Key lessons from "Lets Get Moving" and the previous policy initiatives and pilot projects on which it is based include: (1) the benefits of strong partnership working at both strategic and delivery levels; (2) developing links between projects, so that via signposting they can feed off each other and so enhance the overall level of service to beneficiaries; (3) the tailoring of projects to meet local needs and subsequent adjustment to address changing needs; (4) the importance of initial engagement with people in areas of deprivation in familiar community-based locations (not associated with public employment or other government services); (5) the importance of understanding perceptual (*i.e.* subjective) barriers as well as those that are objectively apparent; (6) working with employers to understand their needs; (7) recognition that transport alone is not sufficient to tackling problems of access to opportunities – service providers and employers need to be involved in problem definition, prioritisation and delivery of solutions; (8) the use of monitoring data and other intelligence for continuous learning and to inform the adjustment of current services and the development of new services.

Considerations for successful adoption in Wales and places similar to Wales

"Lets Get Moving" Merseytravel and partners have been keen to share experiences, as well as to learn from others. The award of Beacon status places even greater emphasis on the sharing of new ideas and promotion of best practice, including through opportunities for work shadowing and exchanges of staff to encourage learning (these two activities have been identified as having particularly high impact), as well as mentoring on a one-to-one basis and focused seminars with colleagues in other areas, in addition to more general conference presentations and advice via websites. There are already links between key personnel in Merseytravel concerned with "Lets Get Moving" and partners in north-east Wales – reflecting economic links across the border between England and Wales.

'Transferability' is not a question of taking initiatives directly from one local area and applying them in a different context in another local area, but rather is about recognising the ideas and principles behind good practice that can be transferred and generalised. Indeed, the fact that the Neighbourhood Travel Teams in Merseyside each operate slightly differently in order to respond to local needs and objectives illustrates this point. Where there are gaps in public transport provision that act as barriers to individuals taking up employment, training, education and other opportunities there is potential for transferability. In particular, "Lets Get Moving" and associated initiatives have helped individuals to tackle barriers to participation in work and have linked areas of need to areas of job opportunities.

Much of the funding used for "Lets Get Moving" has come from European funding and local authority budgets. Wales also has access to European (Convergence) funding and local authority funding streams. Arguably, local areas in Wales are closer to Government (*i.e.* the Welsh Assembly Government) than are their counterparts in England, and in principle there could be greater opportunities for leverage to bend funding to provide opportunities for transport projects to improve accessibility and promote economic opportunity.

Although Merseyside is predominantly urban, it does include some more rural areas (albeit none as remote as the most rural parts of Wales). Clearly, public transport networks are more developed and service frequency is greater in urban than in rural areas. However, Wheels to Work and Scooter Commuter are examples of "Lets Get Moving" interventions not involving public transport. Moreover, the principles of travel training, of enhanced information provision and signposting to services that are available are applicable in more rural as well as in urban areas of Wales.

For further information

Paula Coppel
Partnership Officer
Merseytravel
24 Hatton Garden, Liverpool. L3 2AN
Tel: 0151 330 1306
paula.coppel@merseytravel.gov.uk.

Merseytravel website: www.merseytravel.gov.uk.

Merseyside Local Transport Plan details: www.transportmerseyside.org/ltp.

Accessibility Strategy details:
www.letstravelwise.org

Workwise activities: www.workwisemerseyside.org.

ENDNOTES

1. Although the 2000-2006 Objective One Programme might be seen to end in 2006 it does not close formally until early 2009.

2. A key policy objective is to reduce disparities between Pathways residents and the rest of the population in Merseyside.

3. Social Exclusion Unit (2003) Making the Connections: Final Report on Transport and Social Exclusion. London: Social Exclusion Unit.

4. In particular, the report highlighted how people might be restricted in their use of transport by low incomes, or because bus routes do not run to the right places (*i.e.* they do not serve the new economic geography of employment opportunity).

5. Merseytravel is a public sector body with responsibility for co-ordinating public transport on Merseyside through partnership initiatives, with the aim of delivering a fully integrated and environmentally friendly public transport network. It is committed to playing a major role in the economic and social regeneration of Merseyside.

6. Merseytravel and local authority partners were awarded a double "excellent" rating (the highest standard) from the Department for Transport for the Merseyside LTP for 2006-2011 and for the implementation of the LTP for 2001-2006.

7. See Westwood J. (2004) 'Halton Neighbourhood Travel Team' in Lucas K. (ed.) Running on Empty: Transport, social inclusion and environmental justice. Bristol: Policy Press. 69-93.

8. To be eligible for Workwise an individual needs to be resident in a Pathways area, have an offer of employment or training (of 3 days or more and at least 16 hours per week), be at least 16 years old, be currently unemployed, have a job offer for at least 3 months, not be able to walk there, not be in receipt of any other financial assistance towards the cost of transport, be homeless with confirmation of a c/o address.

9. The Mersey Dee Alliance (MDA) was born out of the recognition of shared economic and community interests across the West Cheshire, Wirral and North East Wales area. The Alliance is led by the local authorities of Cheshire, Chester, Denbighshire, Ellesmere Port & Neston, Flintshire, Wirral, Wrexham, and the Welsh Assembly Government and Merseytravel. Partners agree to work together on common strategic interests to sustain the economic future of the travel-to-work area, and facilitate a coherent approach to social, economic and environmental issues. MDA project areas include transport and accessibility, labour market skills, and business investment.

10. Joblink services were designed to 'fill the gaps' where public transport services do not exist and to link residents of Pathways areas (*i.e.* areas of deprivation) to Strategic Investment Areas where there are job opportunities.

11. Local Strategic Partnerships are non-statutory, multi-agency partnerships, which match local authority boundaries. They bring together at a local level different parts of the public, private, voluntary and community sectors; allowing different initiatives and services to support one another so that they can work together more effectively.

12. Jointly owned targets have been set with Jobcentre Plus to measure whether accessibility strategies have contributed to Jobcentre Plus' national targets for reducing claims for incapacity benefits.

13. The Beacon Scheme was set up in England by the Department for Communities and Local Government in partnership with the Improvement and Development Agency (IDeA) to disseminate best practice in service delivery across local government. Beacon status is granted on the basis of demonstration of a clear vision, excellent services and a willingness to innovate. The assessment process involves a comprehensive self-evaluation (akin to a 360 degree 'health check' on a number of themes: leadership, vision and strategy, community and customer engagement and empowerment, partnerships, equalities and diversity, outcomes, factors underpinning success, successful initiatives, target audiences and sharing lessons), followed by shortlisting by teams of specialists, assessment visits and presentations.

14. In St Helens LEGI funding has been used to offer services to residents of all areas, not just the Pathways areas which are covered by the "Lets Get Moving" ERDF Objective 1 funding. In north Liverpool and south Sefton LEGI money has been used to provide extra Neighbourhood Travel Team staff. In Wirral the local authority has provided funding for travel trainers.

15. Some individuals will have been supported more than once – for example, an individual may have been supported to travel for an interview and then for a job.

16. Sefton@Work is an advice and guidance service for south Sefton residents.

17. For details of ECLIPSE see www.eclipse-eu.net. In particular see section 2.1 of www.eclipse-eu.net/Images/Deliverables/Knowledge_Transfer_Strategies_FINAL.pdf.

18. See: www.fiafoundation.com/resources/documents/528650825__fia_phase_2_uk_national_report_aug_05.pdf.

19. For details of the Halton Neighbourhood Travel Team, Joblink Wirral and Route 111 St Helens see: Lucas K. and Tyler S. (2005) Evaluating the Contribution of Transport Projects to Welfare to Work – An International Study: UK National Report: www.fiafoundation.com/resources/documents/528650825__fia_phase_2_uk_national_report_aug_05.pdf. For example, the cost per Personalised Journey Plan in Halton in 2003/4 was GBP 79.37. 90% of customers had requested a plan for a work-related journey and 60% reported that they could not have made their journey without the information in their plan.

20. Progress2Work is a Government funded initiative designed to help ex-drug users back into employment.

21. This is in keeping with evidence on 'what works' in tackling worklessness, where the importance of Personal Advisers providing advice tailored to individual circumstances has been highlighted – see Hasluck C. and Green A. E. (2007) 'What works for whom? A review of the evidence and meta-analysis for the Department for Work and Pensions', DWP Research Report 407. Leeds: Corporate Document Services.

22. Merseyside has one of the biggest Bikeability schemes in the UK, with the aim of encouraging more people to cycle, more safely and more often.

MICROENTERPRISE WELFARE TO WORK PROGRAM (USA)

Luca Nunziata
Department of Economics, University of Padua, Italy.

In 2003 a final report on the Microenterprise Welfare to Work Program was published by the Aspen Institute, providing some evidence of the effectiveness of the program and the objectives achieved throughout the project[1]. The aim of this report is to briefly introduce the programme, describe its implementation and results of the evaluation. Finally, the potential benefits of extending similar policies to Wales, with due modifications, are discussed.

Rationale of the initiative

In 1998 the Charles Stewart Mott Foundation started a new programme called "Microenterprise Welfare to Work Demonstration and Evaluation" targeted at helping US families in need, obtaining temporary assistance from the "Temporary Assistance through Needy Families" (TANF) program. The concept behind the project was to train and assist interested individuals in pursuing their own business activities, rather than only focusing on wage or public employment. The idea of this new policy was set following the welfare reform legislation of 1996 that introduced a new perspective in welfare policies, stressing welfare to work priorities and time limits in benefit provision. Under these reforms, the main objective of policy makers has been to enhance opportunities of wage and salary employment for welfare recipients, and less or no emphasis has been put on the potential prospects that self-employment can provide to individuals receiving assistance. However, some of the limits and barriers, that welfare recipients face when starting business activities, were reduced, leaving each state the freedom of adopting their own approach to the limitation of business assets that clients could accumulate. Within this policy context, the micro-enterprise project was founded on the belief that self-employment may be a viable way for some – if not for all - individuals to obtain self sufficiency. The rationale for policy support in the context of the initiative was justified by the need to provide additional income to target families that are usually offered low-wage types of work, characterised by few benefits and high turnover. This objective was particularly important in rural areas, where even low wage jobs are usually not available[2]; and for families with small children that need flexible work schemes, generally compatible with self-employment. Indeed some clients were already operating small informal businesses when starting the microenterprise scheme and the programme helped them to strengthen their initiative. The programme built upon previous experiences in establishing microenterprise programmes in the United States and elsewhere. These programmes have experienced rapid growth since the 1990s. They amounted to just a few in 1985, and grew to 266 in 44 states in 1996. In 1995, only 36 211 micro-businesses were provided with loans and technical assistance, 38% of which were start-ups. For 75% of the programmes, the client base was mainly women[3]. These programmes are meant to provide services that are not available elsewhere, as well as a sense of direction to motivated individuals, bridging the gap between economic development and social welfare. Evidence shows that these programmes usually contribute to helping those who are on the margin of the market economy rather than those that are excluded from it. These include the working poor, workers displaced by economic restructuring, part-time or temporary workers, or individuals that do not match vacancies for various reasons[4].

Description of initiative

Objective

The ultimate objective of the programme was to help unemployed individuals to create their own businesses by providing full-time employment and effective family income support. However, a number of alternative possible outcomes for clients were also supported by the programme. For example, assistance was provided to clients who were already self-employed, in order to help develop their business activities, by increasing working hours and income. In addition, assistance was provided to those in wage employment, willing to increase their earnings through complementary self-employment activities (income patching).

Activities and delivery arrangements

The Foundation granted funds to 10 microenterprise organisations (grantees) providing services to a number of welfare recipients (clients). In addition, an evaluation programme carried out by FIELDS at the Aspen institute was also financed in order to assess the evidence regarding the effectiveness of the programme. Each of the 10 funded organisations was involved in ongoing activities aimed at low income individuals at the time of receipt of the grant. The procedure set up by the programme consisted of designing specific intervention tools targeted at welfare recipients, including activities that were already offered by the organisations (marketing and outreach activities, including programme orientations; microenterprise training programmes, including a focus on personal effectiveness skills; access to business credit; individualised training and technical assistance - prior to and after the business start-up), as well as new programme elements constructed to meet the specific needs of the programme strategy (enhanced screening and assessment processes, case management services, employment services, policy education activities)[5].

The following list, although not exhaustive, outlines the typical procedural steps of the programme:

- Interested individuals were first screened by the grantees: examining their personal motivations, entrepreneurial skills and aptitudes, and readiness to engage in self-employment.

- After the assessment, eligible individuals received training in basic business skills and technical assistance in order to develop an initial business plan.

- Further technical help and assistance was provided to participants during the initial phases of business start-up and operations.

- Grantees also provided business financing and assistance for those choosing to revert to wage employment in alternative or in addition to self-employment, and to those already self-employed.

- An evaluation of the effects the programme had on participating individuals was implemented by the Aspen Institute under the FIELD framework.

Table I.1: Participants (grantees) to the Welfare to Work Demonstration and Learning Assessment [3]

Detroit Entrepreneurship Institute, Inc. (DEI) *Detroit, Michigan* Intensive training programme combined with case management and employment placement services.	**West Company** *Ukiah, California* "Building a Better Business" workshop series, support groups, case management and intensive education on income patching and the Federal Earned Income Tax Credit.
Institute for Social and Economic Development (ISED) *Iowa City, Iowa* Clients trained in ISED self-employment classes, for welfare recipients and low-income individuals.	**Women's Initiative for Self Employment (WI)** *San Francisco, California* Case management services, business readiness and business training courses, business support and financing services.
Little Sisters of the Assumption Family Health Services (Project Hope) *Dorchester, Massachusetts* Clients interested in becoming family day-care providers received training in child development and business, and were placed in child-care internships.	**Women's Self-Employment Project (WESP)** *Chicago, Illinois* "On the Business Training" project, by which clients were placed in jobs in order to stop the welfare provision clock, and participated in self-employment training courses targeted to welfare recipients.
MiCasa Resource Center for Women *Denver, Colorado* Participation in MiCasa self-employment courses, for welfare recipients and low-income individuals, with the possibility to enrol in other employment readiness and job training courses.	**WomenVenture (WV)** *St. Paul, Minnesota* Employment readiness and retention training with WV's non-traditional employment clients, and participation in self-employment courses.
Southern Oregon Women's Access to Credit, Inc. (SOWAC) *Medford, Oregon* Business training for low-income individuals and case management services.	**Worker Ownership Resource Center (WORC)** *Geneva, NY* Clients trained in WORC self-employment classes, for welfare recipients and low-income individuals.

Source: Aspen Institute, FIELD (2003), Microenterprise As Welfare to Work Strategy: Two Year Findings.

Budget

The budget consisted of grants amounting to USD 300 000 awarded to each grantee organisation and two grants amounting to USD 249 714 and USD 133 000, awarded to the Aspen Institute for the evaluation procedure.

Impact of the initiative and evaluation evidence

The Aspen Institute conducted an evaluation of the initiative through the FIELD (Fund for Innovation, Effectiveness, Learning and Dissemination) programme, providing some systematic information on the implementation of the project, outcomes and effectiveness. This evidence has been collected in the research report *Microenterprise as a Welfare to Work Strategy: Two Year Findings* from which most of the data and findings that are presented here are borrowed. Further details about the evaluation study can be found in the above report.

From January 1999 to June 2000, 590 individuals (welfare recipients and post-welfare clients through the TANF - Temporary Assistance through Needy Families - program) enrolled in the programme and received services from the 10 grantees. Programme participants shared similar characteristics with average welfare recipients (they were mostly non-Caucasian females). However, on average they were older, more likely to be divorced or separated, with a slightly larger number of children (2.3 versus 2), more educated and with more work experience. They were characterised by a relatively long history of welfare assistance (a median of four years). At the time of enrolling in the microenterprise programme, 39% of participants were already working: 18% in wage employment, 16% in self-employment and 5% in both. In 1997, the self-employment rate for post-welfare recipients was 7%, quite close to the average national rate of 8.1%

(in the same year),[6] and higher than the female rate of 6%. In rural areas self-employment represented a higher proportion of the employed, with an average of 10.4%, and even higher percentages in some specific locations.

Participants were surveyed by means of an intake form designed by FIELD staff and administered by demonstration programme staff (Wave 1 study). When core training was complete, programme staff provided documentation of employment and welfare status of each participant. Follow-up information was gathered from clients at one year (Wave 2 study) and two years (Wave 3 study) after their enrolment in the programme For the one year survey (50% response rate) the collection method consisted of in-depth telephone interviews. These were managed by the Iowa Social Science Institute (ISSI) of the University of Iowa. Individuals were compensated and assured that their identities would remain confidential. For the two-year survey, FIELD decided to carry out an in-house interview in order to increase the response rate. Individuals were compensated and again assured that their identity would remain confidential. Of the 590 programme participants, 362 responded to the Wave 3 study (61% response rate).

According to the authors of the evaluation study, the evaluation strategy did not follow an experimental design for two reasons. Firstly, the budget did not allow the composition of a control group, and secondly, since the grantees required flexibility to design specific interventions targeted for each individual, the treatment of participants could not be considered constant. Given that not all participants responded to the study evaluation, in order to examine the possibility of a bias in the Wave 3 findings, the characteristics of Wave 1 respondents (which included all individuals participating in the programme) were compared with those of Wave 3 respondents, across a number of indicators. The analysis showed that the two groups were very similar across most of these indicators, although Wave 3 respondents were slightly older, slightly more educated and had more assets, liabilities and net worth at the start of the programme. The percentage of Afro-Americans was smaller and larger proportions were already in business at the time of enrolment (21% versus 17% of the full sample). The detailed results of this comparison can be found in the appendix of the above-mentioned report.

The results of the Wave 3 study show that after two years of participation in self-employment programmes, individuals demonstrated a strong increase in work engagement. Individuals who were already working showed an increase in earned income, with consequent dramatic reduction in welfare assistance. The percentage of households under the poverty line was also reduced. The increase in earnings was especially concentrated in income patchers (*i.e.* subjects working in both wage and self employment). The increase was less pronounced among individuals in wage employment and individuals in self-employment. This is possibly because a two year period of evaluation is not long enough to fully appreciate returns on investments in business activities. These findings are consistent with other studies on self-employment.

Participants' households showed an increase in assets, although accompanied by an increase in liabilities. The result was a decrease in households' net worth; however, business owners saw an increase in business net worth.

At the time of enrolment, only 21% of participants were operating a business. This percentage increased to more than 50% of participants during programme participation. The businesses operating in the two year follow-up period displayed high survival rates, increase in monthly sales and business net worth. Many participants moved between dependent employment and self-employment.

Two years after enrolling in the programme, 25% of survey respondents were self-employed, 31% were wage earners, and 12% were both self and wage employed; a total of 68% of individuals were working, compared to only 39% of the initial participants.

Fifty-four percent of respondents had operated a business since enrolling in the programme, with 47% of participants operating a business during the second year after the training. Most respondents were full-time workers, with individuals employed in wage or self employment working a median of 40 hours per week, and income patchers working a median of 47 hours per week. Ninety-four percent of participants were receiving welfare assistance at the time of enrolment. The percentage declined to 25% of respondents at the time of the Wave 3 study.

The median household income of study participants grew from USD 10 114 to USD 18 952 (87% increase), while the number of individuals living above the poverty line increased from 20%, at the time of enrolment, to 56%. The increase in household income was largely due to an increase in personal earnings of respondents (from a median of USD 355 at enrolment to a median of USD 7 389 after two years), resulting in an increased contribution (from 23% to 46%) to average household income. Welfare assistance was then reduced from 30% to 7% of household income after two years.

The median value of household assets increased from USD 450 to USD 1500. The proportion of households holding different kind of assets also grew, quite substantially in some cases. However, these findings were accompanied with an increase in household liabilities, with median net worth declining from USD 0 to USD -680. Parts of these liabilities were mortgages, and education and vehicle loans (*i.e.* investments that could lead to greater returns over time). However, a large fraction was constituted of credit card debt. Individuals who were engaged only in self-employment displayed the largest growth in both assets and liabilities, possibly because of the high percentage of respondents owning real estate and vehicles. Nevertheless, the net worth decline was in line with the rest of the sample, passing from USD 0 to USD -449.

The types of businesses initiated and operated by participants were varied - from child care to business services to construction. The median monthly sales at the time of the Wave 3 study was USD 668 (USD 6 500 in the previous 12 months). Median business assets were USD 3 000, with 88% of businesses having positive net worth, the median being USD 2 800. Businesses existing at the time of enrolment and still operating two years later displayed a stronger performance, with median monthly sales of USD 900, median assets of USD 4 800 and median net worth of USD 4 000. Businesses in the service industry performed better in terms of revenues than those in the manufacturing or retail sector.

Individuals working in wage employment (solely or in addition to self-employment) were earning a median hourly wage of USD 9 two years after enrolment, compared to USD 8.06 earned by post-welfare recipients surveyed through the National Survey of America's Families.

Strengths of the initiative

The underlying success of the initiative was the innovative pattern of aiming to redirect clients towards self-employment rather than dependent employment. This induced, in clients', a stronger attachment to work and a sense of moving forward. The initiative aimed at exploiting the potential of each client in developing new business activities and ideas, thereby linking assistance to responsibility. By benefiting from business services not provided elsewhere, clients were able to start a process of personal and economic advance, characterised by positive externalities on the local community.

Indeed, the Microenterprise Welfare to Work Program provides a new perspective into welfare programmes. The innovative idea behind the initiative is the emphasis placed on self-employment as a viable way out of poverty and welfare assistance. This innovative approach differs substantially from traditional interventions for welfare recipients that are instead targeted at enhancing the probability of re-employment as dependent employees and emphasise wage employment or even public employment as the only option for welfare assisted individuals. In addition, the programme is oriented towards creating the

conditions for self-sufficiency and entering the workforce quickly, rather than the provision of benefit assistance for an indefinite period of time. Self-employment promotion means creating new occasions for business start-ups and contributing to improving the overall economic environment of rundown areas, thus inducing positive externalities on the economic system in the medium/long run. The programme comprises an evaluation phase, which provides data and analysis on the effectiveness of the micro-enterprise project, which should be included for every intervention of this kind. The evaluation is carried out over the different phases of the programme. This specific aspect is crucial to better understanding the dynamics underlying the transition from welfare assistance to self-employment and better designing on-going and future interventions.

Weaknesses of the initiative

The micro-enterprise project was designed for operation through 10 different grantees, each adopting a different strategy for enhancing the clients' potential for starting new business activities. This strategy gave the project a certain degree of flexibility in regards to the design of interventions targeted to specific characteristics of local communities. However, a higher degree of coordination would have helped to better implement the project over the different phases.

Despite an increase in business ownership rates, and growing business dimensions over time, at the time of the two-year study, business income was generally not sufficient to support household needs. The best results were obtained by the income-patchers, suggesting that maintaining some form of coexistence between wage and self-employment is the most viable way for welfare clients to obtain self-sufficiency. Unfortunately, given the assessment data at hand, it is not possible to evaluate how the 10 business service providers performed individually.

There was not enough coordination between the organisations benefiting from the grants and the agents in charge of the evaluation. This resulted in a series of limitations affecting the way the evaluation was performed. These limitations could have been partially avoided by designing the policy interventions and the evaluation strategy together. In addition, some more sophisticated techniques could have been implemented in the evaluation procedures under quasi-experimental frameworks. The possible small increase in management costs would have been largely compensated by the benefits in providing more rigorous evaluation data.

Potential transferability

According to the Welsh Assembly Government's Strategic Framework for Economic Development, the key priorities for the Welsh economy are to "increase employment still further, so that over time the Welsh employment rate matches the UK average, even as the UK employment rate itself rises" and to "raise the quality of jobs, so that average earnings increase and close the gap with the UK average".

These objectives are to be met by a set of actions, including "supporting job creation and helping individuals to tackle barriers to participation in the world of work"; "investing to regenerate communities and stimulate economic growth across Wales"; "helping businesses to grow and to increase value-added per job and earnings".

The Micro-enterprise Welfare to Work Program represents an innovative policy scheme that encompasses all of the above-mentioned objectives and actions, as well as increasing social justice. By encouraging self-employment as a viable way out of poverty, the programme creates the conditions for increasing employment, regenerating local communities and stimulating economic growth. The intervention may take place at different levels, depending on the budget constraints, and may be targeted at *i*) unemployed (households living below the poverty line and individuals who are no longer part of the

labour force) in order to create the conditions for self-sufficiency by means of self-employment; *ii*) wage and salary earners willing to improve their economic condition by means of starting up new business activities, both as an alternative or in parallel to wage employment; and *iii*) existing businesses oriented towards improving their degree of innovation, efficiency and performance. The programme should be managed bearing in mind the specific characteristics and potential of the Welsh economy and territory. Business development may consist of new, creative and innovative activities as well as new methods of producing and commercialising traditional products, or exploiting the natural resources that characterise the Welsh territory. This is especially relevant in the contemporary global market which has seen a dramatic increase in the demand for biological and environmentally friendly products as well as quality nature-oriented tourism.

In addition to standard programme activities, specific training programmes may be designed for specific areas characterised by above average levels of economic inactivity, like for example the Heads of the Valleys in south Wales. The programme could contribute to the spread of business culture in those areas, helping the start-up of new activities at different levels of innovation and better and more efficient management of existing activities. Self-employment represents a more flexible way to induce sustainable economic development in those areas, especially if compared to wage or public employment. Indeed, a higher self-employment rate is synonymous with higher economic growth, especially where the average firm is small and in rural areas. In addition, the potential for new technologies in small businesses, even in traditional sectors, is enormous and not yet fully exploited, especially in orientating products and services to the global market. Specific activities may be oriented towards young individuals, who represent a natural resource for developing this potential.

One of the limitations that the Welsh economy suffers from is the barriers and disincentives that deter individuals from entering the workforce, more specifically the provision of transport and child care. As demonstrated by the Micro-enterprise Welfare to Work Program, child care is one of the most popular businesses operated by US clients. Therefore, encouraging new businesses in this field could mean not only creating work opportunities and income for those operating the business, but also contributing to the provision of an essential service that quite often constitutes a bottleneck for work participation. Similar considerations could be applied to the improvement of transport and communication infrastructure and services. In general, a strategy targeted at improving existing businesses and starting up new ones is therefore not only helping the individuals benefiting from the programme, but also the economy as a whole.

Another problem characterising the Welsh economy consists of average earnings being lower than those in other parts of the UK, despite recent improvements. This may well be due to the distribution of occupations, rather than to workers in Wales being paid significantly less than in the rest of the UK. As shown by the FIELD evaluation, the micro-enterprise program significantly helped to increase earnings, especially for income-patchers, and could therefore help solve this specific problem.

Recent studies on self-employment demonstrate that it is characterised by a higher level of job satisfaction and happiness in comparison to wage employment. Contributing to the increase in the level of self-employment may, therefore, also mean improving the quality of jobs in Wales.

It is crucial that the intervention be accompanied by a robust and well designed policy evaluation exercise in order to help manage the programme and to provide useful data and information for assessing the quality of the intervention strategy and offer better policies in the future. The policy evaluation strategy should be determined before the intervention and in conjunction with the design of the programme implementation, in order to get the most out of both activities. Experimental or quasi-experimental econometric techniques should be preferred to standard descriptive comparisons.

For further information

Prof. Luca Nunziata
Department of Economics,
University of Padua
Via del Santo 33, 35121,
Padua, Italy
luca.nunziata@unipd.it
www.decon.unipd.it/~nunziata

Micro-enterprise Welfare to Work Evaluation at FOCUS

The Aspen Institute
www.fieldus.org/projects/welfare_client.html

Charles Stewart Mott Foundation
www.mott.org

Micro-enterprise Welfare To Work Grants
www.mott.org

Evaluation of Micro-enterprise Initiatives for Welfare to Work Grants
www.mott.org

ENDNOTES

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SKILLS DEVELOPMENT

TRAINING CHEQUE IN NORTH-RHINE WESTPHALIA (GERMANY)

Josepth Muth
Gesellshaft für Innovative Beschäftigungsförderung (G.I.B.) (Organisation for Innovative Employment Promotion), Germany

Rationale for the initiative

Problem to address

Over the past few decades comprehensive changes have taken place in the economy and on the labour market, putting high demands on country adaptability. The globalisation of the economy in particular has not only opened up new markets, but has also led to new international competition in the production of goods and the offering of services. For years, there has been a consensus in Germany that competitiveness can only be preserved if the nation succeeds to offer high-quality technical products and upmarket services, which many low-wage countries are not yet able to supply. The necessary innovations can only be carried out if there is enough investment in research and development, as well as education and training. For the employees, this development means that they have to adapt continuously to the changing demand for skills. Therefore, the knowledge gained in the vocational training from their youth constitutes a basis which they have to build upon by further participation in continuing vocational training. In this context the term "lifelong learning" has achieved prominent importance (Unabhängige Expertenkommission, 2004).

The German demographic development causes a particular challenge in Germany (Rheinberg & Hummel, 2002). Owing to low birth rates, enterprises are increasingly having problems finding young employees. The law has also recently cut down the possibility for staff reduction by early retirement (Hermann 2006). Managers, therefore have to be prepared to adapt to an increasing share of older employees. This entails, on the one hand, the serious need for age-based shaping of the workplace, as well as the implementation of novel learning cultures. Several studies show that enterprises are not sufficiently prepared for these demands (Bellmann *et al.*, 2007).

Over the last few years, the education and training policy has paid particular attention to participation of the population in continuing training. Whereas the participation in programmes for continuing vocational training has increased steadily in Germany since the late 1970s, there have been declining trends since 2000. The participation rate of employed people in vocational training programmes decreased in Germany from 42% in 1997 to 34% in 2003 (Berichtssystem Weiterbildung IX 2004). Increasing migrant participation in continuing training is regarded as highly important. In 2003, 28% of Germans participated in courses for continuing vocational training, but only 19% of Germans with foreign background and only 13% of foreigners (ibid).

Policy context

In March 2000 the European Council in Lisbon phrased the strategic objective to make the European Union the most competitive and dynamic knowledge-based economic environment in the world. A central component of this strategy is 'lifelong learning', a political concept not only aimed at increasing economic competitiveness and worker employability, but also intended to contribute to the promotion of social integration and citizenship. Since the European Commission passed the communication 'Making a

European Area of Lifelong Learning a Reality', in November 2001, this concept has represented the central theme for the development of the education and training policy in the member states of the European Union.

The key area "Support of the Adaptability of Enterprises and Employees and Promotion of Lifelong Learning" was created in the framework of the EU-Objective 2 'Regional Competitiveness and Employment' in the promotion period 2007-2013 in North Rhine-Westphalia (NRW) with the focal point 'Increase of Adaptability of Enterprises and Employees'. One promotion instrument within this key area is the 'Training Cheque' which was already implemented at the beginning of 2006 (*i.e.* in the previous promotion period) and has been adopted - owing to its huge success - into the new promotion period. The implementation of the Training Cheque programme has closed a gap in the system of further education training in North Rhine-Westphalia, because in Germany - unlike in France, for example - there are no business funds to finance measures for further education.[1]

Description of the initiative

Objectives

The Training Cheque was introduced at the beginning of 2006 by the Ministry of Labour, Health and Social Affairs of the federal state of NRW in order to increase the competitiveness of small and medium-sized enterprises and to improve worker employability through continuing vocational training. The state of NRW, with funds from the European Social Fund (ESF), bears half the costs of the continuing vocational programmes by means of a Training Cheque - a maximum promotion of EUR 500.

The decision to implement the Training Cheque programme was affected by two considerations. On the one hand, worker employability would be improved through training cheques via a strong mobilisation function. On the other hand, operational and professional continuing training activities should be brought together through the Training Cheque programme. In this way, a win-win situation should originate between companies and employees.

Training Cheques are given either to companies through company access (*i.e.* companies bear half the cost of the training) or directly to workers through individual access. In this last case, workers receive personal counselling and finance their share of the training costs privately. A company may receive a maximum of 20 Training Cheques per year for its employees. Employees may have two Training Cheques issued to them per year via individual access and make use of another two Training Cheques that their employer has received via company access.

This demand-oriented promotion instrument should have a strong mobilisation effect on companies and employees – contrary to other promotion programmes – and develop a broad effect. For this reason the Training Cheque was implemented with a very lean administration procedure essentially based on the principle of self-declaration rather than documented evidence. The collection of data is carried out online via the Internet during the counselling and takes little time.

Activities

Employees belonging to companies with a maximum of 250 employees are eligible for the promotion by Training Cheque, provided that they have not participated in a company training programme in the current or the previous year. This includes the following:

- Wage or salary recipients;

- People working for the company, who are in a subordinate relationship with the company and are equal to employees under the national law;
- Part-timers;
- Employees on maternity leave or parental leave;
- Family workers;
- Working owners or working partners of companies that have not existed for longer than five years.

Following the additionality principle of the European Structural Funds, those not eligible for promotion are unemployed people; employees of the civil service; employees who fulfil the promotion criteria, but are receiving funds according to SGB III (so-called ALG I recipients = unemployment benefit in the first year of unemployment); as well as apprentices. As the Training Cheque is considered to have a large mobilisation effect the circle of eligible people is very large. The Training Cheque is also not exclusively provided for employees with a low income.

Most training courses on the market can be subscribed with the Training Cheque. There are, however, some exceptions resulting either from other support measures taking precedence - the job office is responsible for the continuing vocational training of unemployed people according to SGB III - or to avoid continuing training that has too narrow a company focus and so does not contribute to the improvement of general employability. The following training programmes are not eligible for promotion by Training Cheque in this context:

- Workplace-related adaptive qualifying measures which are not practical in the external labour market;
- Training programmes that are required by law for companies;
- Driving licenses;
- Training programmes which serve the purpose of recreation, entertainment, private housekeeping, sports or arts or the conveyance of respective knowledge;
- Training programmes which are generally promoted by the state.

Nevertheless, a lot of questions arise in practice concerning individual cases which are not clearly defined by the regulations. For this purpose, backup systems have been developed that experts and interested employees can turn to; they can be accessed by telephone or via the Internet.

Delivery arrangements

The issuing of the Training Cheques is preceded by a preliminary counselling in one of the more than 200 existing state-wide counselling centres associated with various institutions.[2] These include *Volkshochschulen* (*i.e.* adult education centre), regional agencies, trade and industry associations, economic development organisations, technology centres, networks and associations as well as church organisations. No new institution was, however, developed for the Training Cheques. The training counselling centres do not receive any institutional funding, but charge the federal state of NRW a fixed rate for their counselling. They receive EUR 40 for a company counselling and EUR 20 per individual

counselling. The average duration of a company counselling or an individual counselling session is about half an hour (Muth, 2008).[3] The staff in the training counselling centres were trained for the work in the framework of the Training Cheque for special workshops and events. The counselling deals with the development of training demands, as well as the identification of respective training providers on the market. Furthermore, the counselling clients are sensitised to further activities that may contribute to increasing entrepreneurial competitiveness or individual employability.

The training centres in NRW were selected under the framework of the regionalised labour market policy, which means that proposals for the inclusion of institutions for the Training Cheque procedure were developed and agreed upon by actors in the sixteen existing regions. The central incentive for the various training counselling centres to participate in the realisation of the promotion instrument is the opportunity to make new contacts with clients via the Training Cheque that they would otherwise not have reached.

Many of the training counselling centres are located in institutions that are also training providers themselves. For this reason the training counselling agencies are committed to neutrality in the framework of the Training Cheque procedure; they are required to give their clients (both companies and employees) at least three comparable training providers – they may be amongst them – and to put those on the Training Cheque. Which of these offers is booked remains the decision of the recipient of the Training Cheques.

The issued Training Cheques can be cashed at most providers of continuing vocational training. The Ministry of Labour, Health and Social Affairs in NRW, responsible for the programme, has created a number of criteria for the admission of training providers which shall contribute to the quality assurance of the promoted training programmes.

Budget

In the years 2006 and 2007 the demand for Training Cheques has far exceeded the expectations. Hence, according to plan, about EUR 14 million of ESF subsidies should also be provided on a yearly basis in the period 2007 to 2013 for the Training Cheque Programme.

Impact of the initiative and evaluation evidence

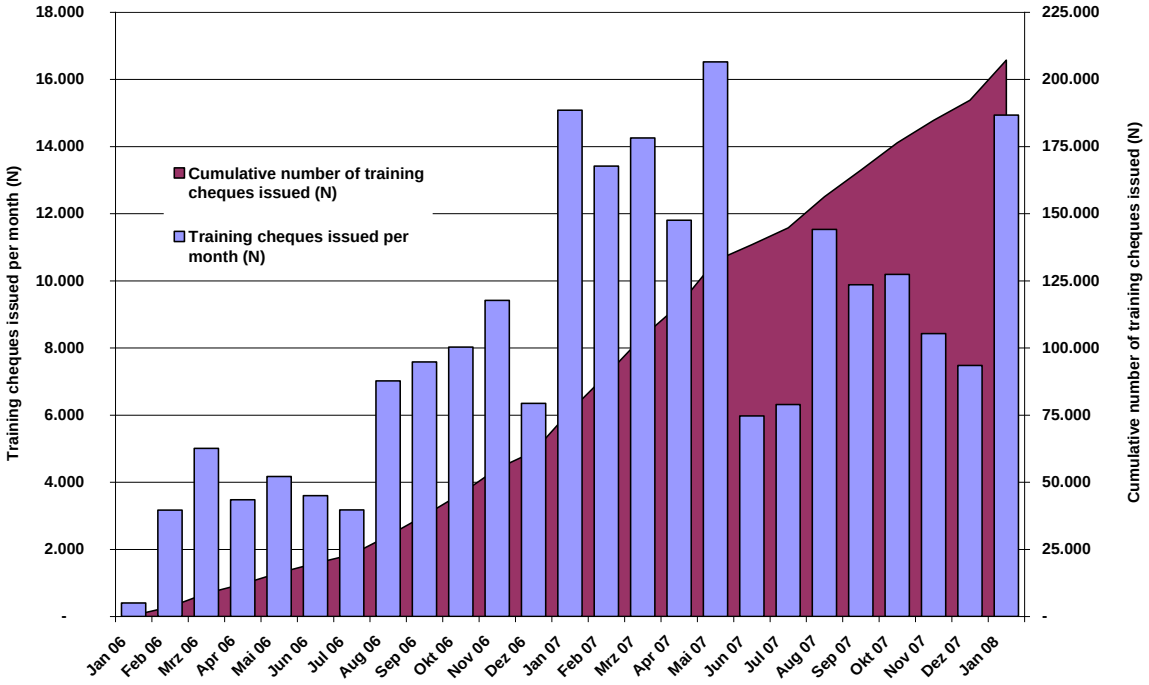
Outputs

While those responsible for the development phase of the programme had some reservations concerning the wide acceptance of the Training Cheques by companies and employees, the practice since January 2006 has so far shown that the promotion instrument has met its requirement to a maximum degree, concerning a strong mobilisation effect. After more than a year, more than 60 000 Training Cheques have been issued in NRW, while by the end of Janurary 2008 it amounted to more than 207 000 (Figure I.1). In some months, more than 10 000 Training Cheques were given to employers or employees in North Rhine-Westphalia.

The results of the G.I.B.-survey (Muth 2008) show that a large number of employees who were not used to continuing training have been reached. About 37% of the participants with company access and 49% of the participants with individual access replied negatively to the question of whether they had participated in a programme for continuing vocational training in the previous five years.

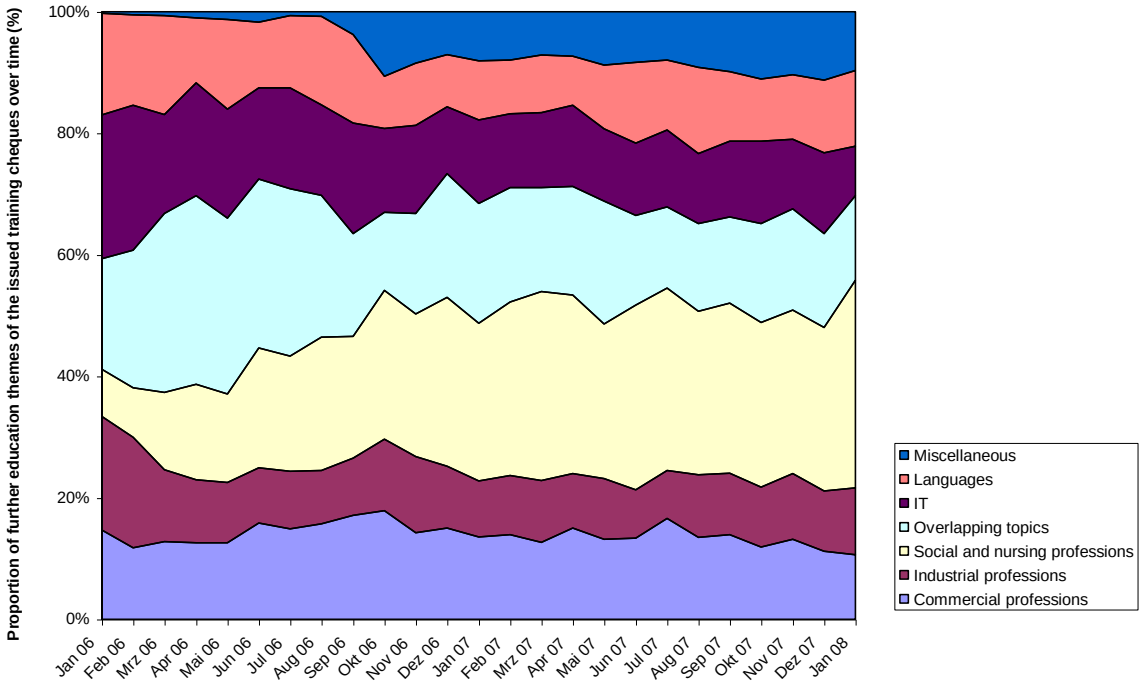
Looking at the sector distribution of training cheques, the social and nursing sector in particular has gained large and ever increasing importance (Figure I.2). In proportion to the total programme it has more than a quarter share (26.1%) and in the individual access it makes up approximately two fifths (40.2%) of the total programme at the end of January 2008.

Figure I.1 Number of issued Training Cheques in the course of time



Source: BISAM, 2008/02

Figure I.2 Proportion of further education themes of the issued Training Cheques over time



Source: BISAM, 2008/02

The proportion of women in the Training Cheque programme is very high with 60.9% in total and in particular with 69.7% in the individual access, which also explains the prominent importance of vocational training in the social and nursing sector. When Training Cheques are issued via the company, the proportion of women falls down to below half (47.2%).[4]

An important realisation, however, is that the individual access to the Training Cheque is used more often by employees who are in an inferior employment situation than those that get the Training Cheque through the company they work in. For those employees who are in an inferior employment situation, the public promotion is obviously a way to enhance their employability without the participation of the employer. The continuing training in this case aims more at opportunity development in the 'external' labour market, a fact that complies with the promotion logic of the Training Cheque. On the other hand, in the case of company-access cheques, the motivation for training came from the company in about two thirds of the cases.

Outcomes

The number of cheques issued is not the only relevant factor for the success of the programme, but in particular the proportion of the cheques that were actually cashed-in for continuing training at the training providers. Looking exclusively at those Training Cheques that were already issued some months ago, we can see that 70 % of the cheques have been cashed-in.[5] On average, approximately EUR 330 of ESF funds are used per Training Cheque for the individual and the company access. The total costs of the promoted training measures are not capped by the promotion, i.e. the contribution by either companies or employees can be considerably higher than the promotion sum. On average, contributions are approximately EUR 720 in the case of company access and EUR 770 in the case of individual access. The financial support is obviously a sensible way to enhance the training participation of employees who are not accustomed to continuing training. When asked in the G.I.B. survey why they had not participated in a vocational training in the preceding two years, approximately two fifths of the participants with individual access replied that the courses had been too expensive for them (Muth 2008).

Effectiveness

Data on the effects of the programme (*i.e.* company competitiveness and worker employability) at the macro level are not yet available. The survey by the G.I.B. in 2006, however, brought some results on the benefit of the Training Cheques. Some 90% of the companies and 86% of participants expressed a favourable opinion about this initiative. In particular, employees stated that they were able to improve their position in the company. Furthermore, about half of the participants with individual access stated that their situation on the external labour market had also improved.

Efficiency

A central criterion for the evaluation of a promotion instrument is often the extent of the measured or estimated deadweight effects. In the case of Training Cheques deadweight effects can be defined as the extent of supported training that would have been realised even in the absence of financial support. But this definition would not suffice, as it does not consider whether the promotion has instigated further and additional training activities, which would not have come about without promotion. The neglecting of this push-start effect would result in an overstated 'gross deadweight effect'; whereas the consideration of the push-start effect only leads to the relevant "net deadweight effect". In Tables I.2 – I.3 there is an attempt to quantify these dimensions on the basis of the present results.

If we look exclusively at the users who stated in the G.I.B.-survey that they would have booked continuing training courses even without promotion by the Training Cheque and also said no to the

question about additional training activities instigated by the Training Cheque (push-start effect), the proportion of the companies that obtained Training Cheques for their employees (Table I.2, perspective of human resource management) amounts to around 13% and employees with individual access only about 9% (Table I.3, individual perspective).

Table I.2:
Perspective of company HRM on windfall gain and push-start effects of company-access training cheques

			Instigation for additional training activities by Training Cheque				Total
			Agree fully	Tend to agree	Tend to not agree	Do not agree	
Question: Training without Training Cheque?	No	Number	123	37	8	1	169
		% of total	35.8%	10.8%	2.3%	0.3%	49.1%
	Yes	Number	67	63	31	14	175
		% of total	19.5%	18.3%	9.0%	4.1%	50.9%
Total		Number	190	100	39	15	344
		% of total	55.2%	29.1%	11.3%	4.4%	100.0%

Source: G.I.B.- Training Cheque survey 2006

Table I.3:
Perspective of individuals on windfall gain and push-start effects of individual-access training cheques

			Instigation for additional training activities by Training Cheques				Total
			Agree fully	Tend to agree	Tend to not agree	Do not agree	
Question: Training without Training Cheque?	No	Number	133	41	3	2	179
		% of total	28.9%	8.9%	0.7%	0.4%	38.8%
	Yes	Number	140	103	35	4	282
		% of total	30.4%	22.3%	7.6%	0.9%	61.2%
Total		Number	273	144	38	6	461
		% of total	59.2%	31.2%	8.2%	1.3%	100.0%

Source: G.I.B.- Training Cheque survey 2006

Following the logic of the promotion programme, the importance of the training counselling should be considered for the evaluation of the results. About 90% of the questioned companies and employees considered the counselling for the Training Cheque good or very good; the framework conditions in the various training counselling centres were also considered to be very good overall (Muth, 2008). Many of the personnel managers and employees, who called upon the training counselling agencies in the first months of the programme realisation, however, had very concrete ideas concerning the continuing training. The specialist demands on the counselling centres will gradually increase with the intended future increased inclusion of people not used to continuing training (see below). A favourable aspect is that more than 90% of the questioned companies and employees said that they might well use the services of the counselling centre again in the future. This provides a good basis for the current deliberations of the NRW Ministry of Labour to use and further develop the counselling field developed with the Training Cheque, beyond the Training Cheque programme in the next few years.

Strengths of the programme

What worked well?

A central key in the (not only quantitative but in particular also qualitative) success of the Training Cheque lies in the optional counselling, which precedes the issuing of the Training Cheques. It helps companies and employees that are not used to the complexity of the continuing training field and often broadens the perception for necessary entrepreneurial or personal activities. The counselling also prevents misuse of the promotion instrument to a large extent.

A further key in the success of the promotion instrument is the fact that the employees have two means of access – the company and the individual accesses – at their disposal. The results up to now show clearly that employees have differing motivations and employment situations leading to the Training Cheque. As the individual access is increasingly used by employees in insecure employment situations and orientation on the external labour market, the promotion instrument Training Cheque can be attested to have a decidedly pro-active labour market role.

What was innovative?

The straightforward administrative procedure of the Training Cheque is praised in unison by all users of the Training Cheque programme – companies, employees, counselling centres and training providers. This considerably reduces the inhibitions to use the promotion. In this respect the Training Cheque procedure stands out among other programmes that often involve a high amount of application effort.

Reasons underlying success

Finally, looking at the development of the realisation structures in NRW in retrospect, we can see that the well-rehearsed structures of the regionalised labour market policy are a central module for the success of the promotion programme. The regional actors have ensured that qualified counselling centres were opened up in all parts of NRW in sufficient numbers. The selection of involved institutions was handled without conflicts, although not all regions have the same structural composition. Furthermore, the realisation of the promotion programme is continuously coordinated by the competent staff of the so-called regional agencies.

Weaknesses of the programme

Obstacles or problems that emerged during the design or the implementation of the initiative

It was a disadvantage that the electronic data collection system, which is used in the framework of the Training Cheque, came into use with a delay of several months. The extensive use of the Training Cheques surprised many local actors in the first months of the programme's course. Counselling resources and the management of client flow in the counselling centres had to be adapted to the enormous demand.

Quality of response taken to obstacles or problems

Basically, some phenomena have appeared during the realisation of the promotion instrument Training Cheque in North Rhine-Westphalia which is known from the field of continuing vocational training. Training Cheques are, for instance, used in particular by companies which have already been active in this field in the past; most companies are in a sound economic position according to their own statements. Also, Training Cheques are, so far, being used mainly by well-educated employees. For this reason the ministry responsible for the Training Cheque in NRW has taken several steps during the last few

months to include in particular more employees with a migration background in the promotion instrument programme.

Potential Transferability

The development agenda of Wales names the enhancement of workplace quality and the improvement of the income situation of the employees as a central objective. To achieve such an objective it is essential that the workforce be well qualified and in continuing vocational training. The Training Cheque as a demand-oriented instrument would be a sensible offer in this case in order to support lifelong learning in a suitable way in coherence with the political strategy in the framework of Priority 3 "Improving skill levels and the adaptability of the workforce" of the ESF-Programme 2007-2013. In the high-technology and knowledge-based growth sectors, in particular, where vocational knowledge is out-dated quicker than in other economic fields, it is vital for employees to have up-to-date vocational qualifications. In the course of economic structural change Training Cheques can contribute to employees threatened by unemployment by enhancing their chances on the external labour market.

What are the main lessons for Wales and places similar to Wales?

The provision of Training Cheques should generally be effected by institutions dealing with topics like vocational and general training and education, business counselling etc. Very often further needs of companies and employees become obvious in the course of training counselling, which can then be developed correspondingly. The Training Cheque frequently clears the way to the respective institutions in these cases. In North Rhine-Westphalia a broad mix of different institutions with varying background involved in the realisation of the Training Cheque programme has proved sensible.

Considerations for successful adoption in Wales and places similar to Wales

Individual Learning Accounts (ILA) is also available in Wales. Contrary to the Training Cheque in North Rhine-Westfalia this programme is applicable to other target groups: either individuals receiving income-based benefits or individuals that do not receive such benefits but with qualification at National Qualification Framework (NQF) Level 2 or below. Perhaps it could be a promising measure to open the ILA for a broader target group. Furthermore, for extensive use of the programme, company and individual access to educational cheques should be also allowed.

For further information

Josef Muth
Department "Organisation and Central Tasks"
Im Blankenfeld 4 - D-46238 Bottrop
Tel.: +49 (0) 2041 / 767 - 156
Fax: +49 (0) 2041 / 767 - 299
j.muth@gib.nrw.de
www.gib.nrw.de

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ENDNOTES

1. An exception is the funds in the building industry which are agreed through collective bargaining.

2. A few companies offer consulting in-house.

3. The results are based on a survey of companies and participants in 2006 by the G.I.B.

4. Here it must be noted that in NRW, 27.7% of all companies that were counselled concerning Training Cheques belong to the manufacturing trade; which has a lower proportion of female employees than other sectors.

5. Looking at the total number of issued Training Cheques would result in a considerably lower redemption rate, as most of the recently issued Training Cheques have not been cashed-in, simply for time reasons.

THE DEXTER INSTITUTE (CANADA)

Richard Brisbois and Ron Saunders
Canadian Policy Research Networks, Canada.

Rationale for the initiative

Dexter Construction Company Limited (Dexter) is a subsidiary of the Municipal Group of Companies, based in Atlantic Canada. Dexter and the Municipal Group of Companies have been involved in all aspects of heavy construction and of civil contracting (road building and quarry business) for more than 40 years, with an employee base of approximately 1 100 employees. The companies operate predominately in the Canadian Provinces of Nova Scotia and New Brunswick, but also abroad (Brunei and the Caribbean).

Problem to address

Dexter had been experiencing critical skills shortage due to a lack of qualified applicants to the heavy construction industry. The company was having difficulty attracting younger workers, largely due to a stigma associated with their industry. Many younger workers did not see heavy construction as a place to build careers, but rather a place you went to work for in the summer. The company also faced an ageing workforce, which it needed to replace in order to meet its operational needs. At the same time, the company was going through a period of growth and rapid adoption of new technologies.

Dexter Construction approached the Nova Scotia Community College (NSCC) to help them solve their critical skills shortage. NSCC is a public post-secondary education institution with 9 922 full-time and 22 000 part-time students with 13 campuses located throughout the province of Nova Scotia, and a virtual campus that delivers programmes via the internet. The college offers 140 certificates, college diploma and advanced college diploma programmes.

There was no direct public sector (*i.e.* government) involvement in the development of this partnership or the resulting initiatives discussed below.

Policy context

In Canada, post-secondary education is a provincial/territorial responsibility: each province/territory has its own system of colleges and universities. The federal government provides some education-related funding to each province/territory and has some direct involvement in financial aid programmes and in supporting the research activities of universities.

In Nova Scotia, provincial funding for post-secondary education is budgeted at CAD 447.2 million in the 2007–2008 fiscal year. This includes funding to universities, the Nova Scotia Community College, spending on skills and apprenticeship programmes, and support to students.[1]

No public sector (*i.e.* government) funds were directly involved in the development of the Dexter Institute model described in the case study below. A full cost recovery model was used for this initiative.

Description of initiative

As noted above, Dexter approached NSCC to help them solve their critical skills shortage. The Dexter Institute was the result of this partnership.

Objectives

The Dexter Institute, launched in 2001, is a strategic partnership between NSCC and Dexter that established a new educational initiative (The Dexter Institute) at the College. This is essentially a school-within-a-school model developed specifically to address local skills shortages in the heavy construction industry.

Activities

The main focus of the Dexter Institute is the delivery of a two-year college programme in heavy construction. Graduates receive a Heavy Construction college diploma and are guaranteed an offer of a job at Dexter Construction. While the programme principally targets students who are just about to graduate high school (grades 11 and 12) and are considering their options for future education or the world of work, it also includes older students in career transition or re-entering the workforce.

Delivery arrangements

Key features of the Dexter Institute programme are:

- The two-year programme involves a mix of learning methods for students. This includes traditional classroom training at NSCC (paid by students through tuition fees) and practical paid work experience on-site at Dexter. Tuition fees for the Dexter Institute are CAD 3 900 (Canadian dollars) per year, or CAD 7 800 for the full two-year programme. This is higher than the standard tuition fee at NSCC of CAD 2 600 per year.

- Work assignments at Dexter expose individual students to all aspects of the company's operations and civil construction.

- The company emphasises careers in the construction industry, not just a job.

- Dexter offers guaranteed employment in a growing industry upon graduation in the programme.

- A retention bonus, through tuition reimbursement, is also offered to students who stay with Dexter for two years after graduation. Half of the student's tuition fees while at NSCC is reimbursed by Dexter (approximately CAD 3 900).

Budget

According to NSCC, there were very little start-up costs to develop the Dexter Institute. Any start-up costs incurred by Dexter Construction are not available.

Although the cost of running typical NSCC academic programmes are subsidised by public funding, the Dexter Institute is operated on a strictly cost recovery basis. All the costs to NSCC of running the Dexter programme are covered through tuition fees.

The ongoing costs to Dexter Construction would include wages paid to students while on their work time with the company. Specific cost details are not available.

Impact of the initiative and evaluation evidence

Outputs

The programme initially had 300 applicants in the first year of operation, and has received an average of 135 applicants in the past four academic years (Table I.4). The number of students enrolled in the first year of the Dexter Institute has ranged from 25 to 33 in the most recent academic years (Table I.5). Now in its sixth year of operation, over 200 students have enrolled in the Dexter Institute since its launch in 2001.

Table I.4: Dexter Institute annual applications

Academic year	Number of applicants
2007/08	172
2006/07	149
2005/06	119
2004/05	99
4 year average	*135*

Table I.5: Dexter Institute student enrolment

Academic year	Number of students enrolled at start of school year
2006/07	33
2005/06	25
2004/05	32
2003/04	*29*

Graduation rates for the Dexter Institute have averaged around 68 percent in the four most recent academic years (2003/04 to 2006/07) (Table I.6). However, graduation rates have varied greatly over these four years ranging from a low of 55 percent in the 2006/07 academic year to a high of 80 percent in the 2005/06 academic year.

Table I.6: Dexter Institute graduation rates

	Enrolled as of September 30th	Number of graduates	Graduation rate
2006/07	33	18	55%
2005/06	25	20	80%
2004/05	32	20	63%
2003/04	29	21	72%
4 year average			*68%*

Outcomes

A sizeable number of the Dexter Institute graduates remain employed at Dexter Construction after graduation. On average, 61 percent of graduates from the four most recent academic years (2003/04 to 2006/07) are still employed with the company (Table I.7). The rate of retention varies with the time passed since graduation. Eighty-three percent of the most recent graduates (2006/2007 academic year) remain employed with Dexter. At the same time, almost 60 percent of graduates from the 2003/04 academic year are also still working at Dexter Construction.

Table I.7: Retention rate with Dexter Construction

Academic year	Percentage of graduates still employed with Dexter
2006/07	83%
2005/06	55%
2004/05	50%
2003/04	57%
4 year average	*61%*

These sizeable graduate retention rates suggest that this business/education partnership resonates well with students. The programme has also helped to legitimise the heavy construction industry in the minds of students and parents by offering students a recognised 2-year post-secondary college diploma upon graduation.

NSCC conducts *Graduate Follow Up* studies with former graduates of the college to collect information on, among other things, graduate employment and whether students have remained in Nova Scotia after graduation. The most recent survey, the 2007 *Graduate Follow-Up Study*, interviewed 2006 graduates one year after graduation (Table I.8). Of those employed, 86 percent of overall NSCC graduates are employed in a job related to their field of study. For Dexter graduates, of those employed, 83 percent are employed in a job related to their field of study. These figures need to be interpreted with caution. While all Dexter graduates are surveyed after graduation, for NSCC overall, the figures only reflect those students who actually responded to the *Graduate Follow-Up Study*. This may lead to an upward bias in the figures for NSCC overall.

Table I.8: Percentage of graduates employed in jobs related to their field of study – 2006 graduates

	Of those employed, percentage employed in related field
Overall NSCC graduates	86%
Dexter graduates	83%

Effectiveness

The views of programme participants are provided in the testimonials (below) from Dexter Institute students[2], and underscore the benefits students see in the programme. These provide some examples of the effectiveness of the programme, from the student perspective. A formal evaluation of the effectiveness of the Dexter Institute has not been undertaken to date.

> *Knowing that I have a job waiting for me when I finish takes a lot of stress out of the education process. Follow this up with tuition reimbursement after 2 years of employment, and you have a deal that is too good to pass up.*
>
> *The Dexter Institute provides courses in a variety of areas pertinent to the industry. It really helps to put you on the fast track to success. Thanks to this programme, I feel comfortable working in almost any area of construction. Whether it is installing water or sewer lines, to operating equipment, to working in the office; the programme provides a broad base of knowledge in all these areas. The education I have received will allow me to establish a higher paying career much quicker than I could have imagined.*

2nd year student, Heavy Construction, Dexter Institute

I got to learn not just about one single part of the construction business, but the whole thing. This course has widely expanded my knowledge of the business. I was able to do hands-on training that allowed me to learn things that just cannot be taught in the classroom. From my hands-on training I was taught tricks of the trade by experienced trades people.

At the same time, for a young guy like me, the classroom work has brought a new future to my eyes. The project management skills and surveying work have made me realise that the possibility of me owning my own company someday is possible. Some of the skills we learn we may not use today but are setting us up for a better tomorrow.

2nd year student, Heavy Construction, Dexter Institute

The course is a perfect blend of classroom time and hands-on experience. After spending the last couple months in school we are preparing to move to the Dexter location in Sackville. It will be a great opportunity to take what we have learned and apply it. It will also be nice to finally get our hands dirty. I'm looking forward to gaining field experience. I'm excited to get training with the equipment and tools we will be using on a daily basis when we begin working.

So far this programme is preparing me even more than I imagined. Everyday there is a new challenge and something new is learned. I believe in the importance of knowledge and I am gaining so much here in this programme. I truly believe every aspect of this course is beneficial to me. I know, that when this programme comes to an end I will be well prepared and on the road to reaching my goals in the construction industry.

1st year student, Heavy Construction, Dexter Institute

Efficiency

The low set-up costs to develop the Dexter Institute by the NSCC, and the fact that the programme is completely a cost-recovery model for the school, suggest that this is an efficient programme (financially) for the college to operate and maintain.

Strengths of the initiative

A number of factors have contributed to the success of the Dexter Institute model.

What has worked well?

The opportunity to earn while learning has proved very attractive to students. They are able to earn income while in school as a way to offset tuition fees. At the same time, the retention bonus (tuition re-imbursement) for graduates who remain with Dexter for two years after graduation appears to resonate well with students, considering the very high rate of retention by Dexter of programme graduates. Both of these can really ease the financial burden to students of obtaining a post-secondary education.

The strong emphasis on a career ladder, rather than just an entry-level job, and the fact that Dexter will invest in their development, has been well-received by students. To facilitate that development, students are exposed to all aspects of the company during their on-site work placement at Dexter. The company also places a strong emphasis on the 'Dexter Culture'. After two years in the programme, students are quite familiar with company values and norms.

The idea that the programme is 'seamless' also works well for students. Students begin their prospective careers with Dexter as soon as they enter the Dexter Institute programme. There is no break from the programme path from day 1 at NSCC to their job at Dexter two years later.

What was innovative?

School-business partnerships are not unique to the Dexter Institute. For many years, many colleges and universities in Canada have offered co-op placement programmes with businesses (locally and nationally) to their students. In the case of the Dexter Institute, the combination of guaranteed employment and tuition reimbursement is novel among the school-business partnerships with which the authors are familiar. This, along with a strong emphasis on career paths within the heavy construction industry, has contributed to the success of the Dexter programme to date.

Reasons underlying success

Guaranteed employment with Dexter upon graduation from the programme is a strong incentive to students and is also beneficial to the company in knowing they have a future talent pool of employees.

Other keys to success of the programme have included support from the company's top management as well as relevant, up-to-date training materials for students. The training students receive in school is directly applicable to jobs available at Dexter or the heavy construction industry in general.

All of these factors likely contribute to the high ratio of applicants to places in the Dexter Institute.

This school-business partnership also benefits Dexter Construction in helping them address their skills shortages. Ken Jones, Dean of Business Development at NSCC says 'this is an excellent example of how NSCC works directly with industry to develop relevant programmes, and deliver graduates who have the skills employers need and want. In this case, students will develop the skills required and valued at Dexter.'[3]

Weaknesses of the initiative

The Dexter model appears to be a very successful initiative between Dexter Construction and NSCC with benefits to all involved - students, the company, and the college. However, there are some issues that have arisen over the course of implementation of the programme.

Obstacles or problems that emerged during the design or the implementation of the initiative

Potential students are recruited and screened by both Dexter's hiring criteria and NSCC's admission policies. Final acceptance into the programme is determined by Dexter Construction's Human Resources Department. This process may limit the type of students allowed into the programme as the screening process is largely decided by the employer rather than the school. This, however, is likely a necessary feature if there is to be an employment guarantee.

A potential pitfall lies in the sometimes differing approaches each partner may adopt to student issues. The industry partner, seeking the best possible employee, may, at times, be quick to dismiss a student exhibiting poor performance or behaviour issues. While the college also seeks to graduate the best possible employee for industry, it adopts a learning-centred approach and uses performance or behaviour issues as a learning and growth opportunity for the student. Close communication between the partners and mutually-agreed and documented performance criteria are critical to the success of the partnership.

A stakeholder from NSCC also noted that school-business partnerships need to be managed together by both the school and the partnering organisation. One solution is to have committees and advisory boards involving both the employer and the school. The more the employer gets involved in designing a programme, supporting a programme, and even involved in the delivery – the more successful the programme. So employers need to be more involved than simply hiring students, they need to get involved in programme curriculum for the programme to be successful.

Only larger employers, like Dexter Construction, may be able to make the financial investment in programmes like the Dexter Institute. Smaller employers would not likely have the financial resources for such initiatives, although they too may be facing skills shortages similar to Dexter Construction. Small business is also a constituent group that colleges in Canada may miss, so many smaller businesses may not even be aware of how colleges can help them in their business needs. NSCC is beginning to work with local boards of trade and financial institutions who deal directly with small business to reach out to this particular constituency. The aim is to make smaller employers more aware of what the College can do to help them with their business needs.

Quality of response taken to obstacles or problems

Insufficient information is available to answer this question at this time.

Potential transferability

This report has presented a case study of a good example of a school-business partnership to address a local economic issue. The solution was the development of the Dexter Institute – a strategic partnership between Dexter Construction and The Nova Scotia Community College (NSCC). The combination of guaranteed employment, a career path with options, a college diploma, and tuition reimbursement is novel. Testimonials by Dexter students (above) demonstrate the value of this programme in their career development.

The Dexter model is now being adopted by other local employers in Nova Scotia to address their own skills shortages. For example, the aerospace and meat packing industries have adopted similar school-business partnerships, with some customisation, to address their own skills shortage issues.

What are the main lessons for Wales and places similar to Wales?

The Dexter Institute model of a school-business partnership could be developed in Wales (or other jurisdictions) to address regional or local skills shortage issues. Post-secondary education providers can play a key role in helping local business address their business needs, in this example, around developing future employees. These partnerships should ensure they follow the Dexter model and offer a similar package: a recognised post-secondary education credential (diploma), an emphasis on career paths, earning while learning, and retention bonuses. These have all contributed to the success of the Dexter Institute.

In Wales, as well as other jurisdictions, public sector agencies could play a role in promoting these types of school-business initiatives elsewhere and in other sectors. Public sector agencies could provide a databank of ‘best practice’ examples (where there is solid qualitative evaluation data) and ‘promising practices’ (where reports are encouraging, but solid evaluation data may be lacking). These types of knowledge sharing activities by public sector agencies can benefit both schools and businesses which may not be aware of such initiatives.

Considerations for successful adoption in Wales and places similar to Wales

Any organisation considering a school-business partnership, like the Dexter Institute, should ensure that all of the ingredients which make Dexter successful are evident, notably the opportunity to 'earn as you learn' and clear career-track opportunities.

Location can also play a role in programme success. It is more difficult to attract a critical mass of applicants for other initiatives that were offered in rural areas.

Although a formal audit review of the Dexter Institute initiative has not yet taken place, feedback from programme participants and NSCC stakeholders, as well as some of the quantitative data on graduate/employment rates, strongly point to a successful initiative. The lack of a formal audit should not discourage other similar school-business partnerships from being developed elsewhere. Rather, a formal audit should be something incorporated into future programme design and assessment for similar initiatives in other jurisdictions.

For further information

Ken Jones, Dean, Business Development
Nova Scotia Community College (NSCC)
236 Belcher Street, Kentville, Nova Scotia (Canada) - B4N 0A6
Tel: 902-690-2185
ken.jones@nscc.ca
Websites:
- Dexter Institute - www.dexter.ca/dexterinstitute/index.html
- NSCC - www.nscc.ns.ca/
- Dexter Construction - www.dexter.ca/dexter.html

Richard Brisbois, Senior Researcher
Canadian Policy Research Networks (CPRN)
214 – 151 Slater St., Ottawa, Ontario (Canada) - K1P 5H3
Tel: 613-567-7500 ext. 2006
rbrisbois@cprn.org
www.cprn.org

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ENDNOTES

1. Source: www.gov.ns.ca/finance/budget07/budget_address.asp.

2. Testimonials are courtesy of The Nova Scotia Community College.

3. Nova Scotia Community College Media Release, July 11, 2001 (www.nscc.ca/News_Events/Media/ 2001/ 07-11-01-06.asp).

THE JANE ADDAMS RESOURCE CORPORATION'S MANUFACTURING SKILLS PROGRAM (USA)

Corinne Nativel
University of Franche-Comté, Besançon, France.

Rationale for the initiative

Problem to address

This policy review examines an initiative known as the 'Manufacturing Skills Program' (MSP) implemented in the United States by the Jane Addams Resource Corporation (JARC), a non-profit community development organisation founded in 1985. Located in the north side of Chicago (Illinois), JARC has developed an integrated response to problems linked to the industrial decline experienced in the 1980s, the eroding tax base and the weakening of community support systems. It has focused simultaneously on residents' needs through educational programmes for youth and adults and on the needs of local businesses, through multi-faceted efforts in technical assistance, advocacy and workforce development. Embedded in this broad strategy is a sectoral approach to workforce development in the metalworking, woodwork and electronics industries, which evolved from JARC's early community organising efforts in the Ravenswood Industrial Corridor (a narrow band of commercial and industrial buildings that follow a rail line). This provider has a strong commitment to, and connection with, its low-income constituency of immigrants and other disadvantaged groups, whose employment options are severely limited by barriers such as lack of education, low skills, language and discrimination. JARC understands both the labour requirements of electronics and metalworking employers struggling to compete; and the obstacles and challenges low-wage workers face when trying to make ends meet and provide for their families.

Trainees undertaking 'traditional' training courses tend to be offered a choice of vocational, literacy and numeracy skills which are either very generic or designed without significant local business input. This means that they are rarely provided with a genuine career development path. The rationale for the MSP is different in that it adopts a sectoral approach whose content is developed to help the particular target group of low-income workers to move up the employment ladder, in consultation with the local industrial actors. Moreover, by precisely tailoring course contents to the needs of the area's small neighbourhood manufacturers, it is expected that in the long run the MSP will create a virtuous circle of industrial competitiveness, retention and growth. Indeed, JARC identified that those firms which could benefit most from the MSP had never invested in worker production training. A major disincentive to providing training in the past had been cost, JARC succeeded in accessing state funds to cover much of the direct training costs for companies. Consequently, in many cases the companies pay little or no direct tuition, although they must still pay workers while they participate in the training.

Policy context

The U.S. policy agenda in which this initiative has been operating since its inception has been marked by the rise of the Welfare to Work and workforce development agendas which emphasise that the nation must possess a highly-skilled workforce to respond to global competition. The Workforce Investment Act

(WIA) of 1998 and Trade Adjustment Assistance Act (TAA) of 2002 have been implemented to that effect and share many similarities with recent skills development regulations and initiatives in the UK. The two countries have adopted a sectoral and local partnership approach to policy design and delivery of workforce development programmes. In the U.S., it is currently argued that sectoral strategies must be further strengthened; the movement to get Congress to adopt such strategies in federally-funded training programmes such as the WIA and the TAA appears to be gaining ground. For example, on 12 and 13 February 2008, sectoral practitioners descended upon Washington DC in an attempt to influence legislators. The event included a briefing of Congressional staff on workforce development issues.

UK policy-makers also believe that sectoral strategies ought to feature strongly in the workforce development agenda. The initiative described herein is thus set in a context that may resonate with that characterising the UK.

Description of initiative

The initiative began in 1991. Originally known as the "Metalworking Skills Program" (MWSP), it was renamed in 2005 and is now known as the Manufacturing Skills Program to reflect the adoption of a broader perspective.

The main characteristic of the MSP initiative lies in the fact that it targets a particular occupation or set of occupations within an industry. Training courses and other programme efforts are geared towards specific industrial occupations. While new occupations have been added since 2005 – notably in the field of electronics and electrical wiring – the programme retains a heavy focus on metalworking, primarily on punch press operator and die-setting related occupations.

Objectives

With this initiative, JARC's objectives are to:

- *Intervene by becoming a valued participant within the target industry.* The organisation has established its credibility as a training provider and developed close working relationships with management of metalworking firms. By providing technical assistance alongside training programmes, it demonstrates its depth of understanding of production processes, and has become a valued source of industry information and training services.

- *Exist for the primary purpose of assisting low-income people to obtain decent employment.* Training programmes target entry- and lower-level occupations in the metalworking field to equip these individuals with the skills needed to advance in the industry.

- *Create systemic change within these occupations' labour markets.* By working with employers on occupational profiling and developing skill standards for different jobs, JARC has helped companies create internal job ladders. These ladders benefit workers regardless of whether they participated in the training programmes, because they subsequently have a clear path toward advancement within the firm. And, given that many firms have adopted these standards, workers throughout the local industry may benefit. In addition, the organisation's interventions have helped firms to employ their human resource assets more effectively and implement more efficient procedures that lead to greater stability and job retention in the Chicago area.

- *Develop a strategy of collaboration* and relationship-building with industry associations, government and other training providers to raise the bar for skill standards.

While the agency's objectives are clearly about fostering workforce development, they are also about preserving the social fabric of local communities, preventing the displacement of low-skilled, low-income residents that could be caused by gentrification pressures. Indeed, next to the objectives of supporting the job retention of local workers and the growth of local manufacturing businesses, a third objective is to preserve manufacturing space in the community against the threat of condominium conversion. For this purpose, JARC has acquired four industrial buildings (known as "The Raven", "The Delta", "The Honore" and "The Carroll") to provide full-service affordable premises on lease to small local tenant firms. There are on average 25 tenants on each site. The Carroll, the latest of these real estate redevelopments is located in a "Planned Manufacturing District" on Chicago's west side, 63% of which was leased by early 2008. Finally, in the field of Education and Human Development, JARC has become a "Centre for Working Families", an approach championed by the Annie E. Casey Foundation. In other words, aside from its training provision services, such as the MSP, JARC's activities also include wider forms of community, lobbying and advocacy work.

Activities

As mentioned above, the MSP is one of JARC's several training courses (further training programmes such as the "Careers in Manufacturing Program" (CMP) or the "Adult Learners Program Services" (ALPs) are targeted at unemployed youth and adults and are not covered in this review paper). In this section, we focus on the description of activities conducted within the MSP, which provides on-the-job training for incumbent workers, the majority of whom are Hispanic Americans. The programme includes a wide range of classes and seminars which fall within five categories:

Technical skills

- Metalworking Skills I (duration: 36 hours). The course integrates basic math, print reading and metrology skills.

- Machine Shop Fundamentals (duration: 24 hours). This course is conducted in several sections, *i.e.* drill press, lathe, and in the mill.

- MIG Welding (duration: 24 hours). The class provides an explanation of Metal Inert Gas (MIG) welding and contrasts it with other welding techniques (TIG, etc.).

- Introduction to CNC Programming, level 1 (duration: 32 hours). This class covers the fundamentals of G-Code programming for N/C and CNC turning and milling operations. Using a computer-based simulator, students write programs for a variety of projects.

- CNC Set-up and Operation, level 2 (duration: 32 hours). This class provides hands-on training in set-up and troubleshooting techniques for CNC turn and mill machine centres. Students review the programming competencies covered in the lab (intro) class and apply them on the shop floor using a variety of CNC machine tools.

- Punch Press Die Setting (48 hours). This course provides hands-on training in the fundamentals of the setup and operation of punch presses. Die setting safety and maintenance are thoroughly covered.

- Quick Die Change (Advanced Punch Press Die Setting) (duration: 20 hours). This course is customised to the needs of each company. It focuses on finding inefficiencies in the die-setting process and the usage of the correct tools to complete a successful and timely die set.

Quality and safety

- Quality Control I (duration: 24 hours). This course builds upon the core competencies the student will have achieved in Metalworking Skills I. The student will review print reading and metrology fundamentals. The successful student understands and uses more complex precision measuring tools, and applies those skills through a series of practical exercises. Subtopics include statistical process control, geometric dimensioning and tolerancing, and metric math. The student will learn and use contemporary quality assurance nomenclature.

- Workplace Safety (duration: 24 hours). This class is highly customised to meet the specific safety requirements of each company. Core components include basic first-aid training, hazardous material communication, basic principles of machine safeguarding, use of extinguishers, etc. The instructor can use materials from an existing company safety programme as a training resource.

- Forklift Safety and Operation (duration: 16 hours).

Workplace skills

- Communication for Quality Level 1 and 2 (duration: 36 hours for each).

Seminars

- Geometric Dimensioning & Tolerancing (duration: 16 hours) This course provides intensive hands-on training in the fundamentals of Geometric Dimensioning and Tolerancing, how to read tables in the Machinist's Handbook, calculate minimum and maximum interference, and how to read geometric symbols for form, profile, location, orientation, and run out.

- Statistical Process Control Seminar (duration: 8 hours). A seminar that teaches students to evaluate the statistical stability of the manufacturing process using Statistical Process Control.

Information technology-computer skills

- MS Excel Applications for Industry (duration: 14 hours). This basic MS Excel course is tailored to fit the needs of administrators and production employees who need an overview of common industry applications that are spreadsheet-based.

Delivery arrangements

The classes are held either on the company's premises or in JARC's own 3 500 square foot Technical Training Centre for the Metalworking Trades (which was substantially refurbished between 1999 and 2004). A noteworthy feature is that the "Tech Centre" is equipped with the same machines and equipment as those found on the employer's premises. This is because the centre has its roots in the stamping industry. It has evolved over time to accommodate other types of metal fabricating. In the past couple of years, the Centre has expanded further to offer programmes in automation and electricity so that by early 2008, it included five discrete departments (stamping, Computer Numerical Control machining, welding, automation and electricity).

Budget

JARC's MSP relies on donations from several sponsors: (1) foundations such as the Aspen Institute, the Hitachi Foundation, United Way, the Polk Brothers Foundation, etc., (2) individual contributors, (3) the

corporate sector - represented by a variety of companies in the metalworking and related sectors, as well as in the banking sector (Citibank, LaSalle Bank, etc.) and (4) governments grants from the City of Chicago (Department of Planning and Development, TIFWorks, Job Training and Economic Development Program, etc.).

In 2004, JARC's total budget amounted to USD 975 017 with USD 797 877 (approx. 81%) of expenses going to programme services. Unfortunately, we were unable to extract the budget covering the MSP or obtain more recent data.

Impact of the initiative and evaluation evidence

Outputs

JARC reports that since its start, over 900 individuals from 100 companies have taken classes through the MSP. These figures are considerable considering that the local employer base includes roughly 200 businesses employing 5000 workers. This means that half of the companies which could potentially benefit from the organisation's services have actually done so. With regard to the numbers of participants, these were relatively low in the 1990s (less than 10 people per year!) and went up considerably in recent years. For example, in 2004, 168 workers participated in the MSP1.

Outcomes

It is worth bearing in mind that since the MSP's objective is not to train unemployed workers, "people obtaining jobs" cannot be regarded as a pertinent outcome. Instead, a relevant criterion would be the improvement of incumbent workers' employment conditions. Two U.S. research institutes have conducted longitudinal surveys of participants in sectoral employment programmes: the Aspen Institute's Sectoral Employment Development Learning Project (SEDLP) and the Charles Stewart Mott Sectoral Employment Initiative (SEI).2 The SEDLP examined the experience of participants from six established programmes (including JARC) while the SEI studied participants of nine newly formed initiatives. Both evaluations identified a range of outcomes after two years which are all relevant to JARC's MSP. These included:

- *Higher incomes*. Median personal earnings for working participants increased from USD 8 580 annually at baseline to USD 17 732 for SEDLP participants. In the SEI study, median earnings increased from USD 10 486 to USD 18 875.

- *Participants worked more consistently*. In the SEDLP study, the percentage of respondents who worked year round increased by 23 percent prior to training to 66 percent in the second year following training.

- *Higher quality jobs*. Among SEDLP participants, 78 percent of jobs held after training provided access to health insurance compared to 50 percent of jobs prior to training. Similarly, the percentage for SEI training programme participants holding jobs with access to health insurance increased from 49 to 73 percent.

- *Participants felt more optimistic about their working lives*. Two years post-training, 82 percent of SEDLP participants said they believed their job prospects were better due to their participation in the sectoral programme. Many expressed an increased desire to further develop their skills and education credentials, as well as an increased sense of confidence.

More specifically with regard to JARC, the Aspen Institute's study found that the MSP resulted in an 80% attendance rate and 97% completion rate. Participants experienced an increase in total yearly earnings

after completing the programme. JARC participants reported baseline earnings of USD 26 278, which is higher than the median annual earnings for those in metalworking trades for the entire Chicago metropolitan area. After a year, their earnings rose to USD 30 225, an increase of 15 percent. This increase may be biased upward, since only 71 percent of those who responded to the baseline survey responded to the first-year follow-up survey. Those who did respond to the follow-up survey had higher earnings than the full baseline group. Factoring in the baseline earnings of the follow-up group yields an increase in earnings of only 5 percent after one year, not 15 percent. The increase came in the form of higher hourly wages since their hours of work actually declined by 87 hours over the year.

Finally, the cost of MSP is competitive given that it is supplemented with state and federal grants.

Strengths of the initiative

What worked well

What makes the MSP initiative outstanding is the fact that it adopts a highly focused sectoral approach with hands-on, vocational courses that are intensive but of short duration (24 hours on average). It relies on dedicated tutors and instructors who possess not only considerable experience in the occupations and sectors covered by the MSP, but also master the community languages of the target populations. A noticeable feature of the MSP is that the instructors can teach the manufacturing course in Spanish (the native language of most of the participants) but also in some Eastern European languages such as Polish or Bosnian. This means that the new skills acquired have an immediate impact.

What was innovative

The innovative aspect of this programme is the fact that it trains incumbent workers as opposed to unemployed workers (although as mentioned above, aside from the MSP, JARC offers further training and learning programmes). The MSP's main concern is to render the companies that seek its services more productive by equipping their workers with essential skills to improve their employment prospects. As a result, the retention (and hence the employment security) of these workers is improved. In Chicago, and more generally in the United States, there is a severe lack of training programmes that address these target groups because the existing offer is either focused on traditional occupational programmes delivered by community colleges or on funding for business training but for the most qualified.

Reasons underlying success

JARC's motto, "Building Success that Lasts in Work, Life and Community" is well justified. Indeed, the success of this initiative is first reflected in its longevity (*i.e.* the fact that it does not operate as a "short-term project" of a few years' duration, as tends to be the case for many initiatives funded by the European Social Fund in the EU, for example). Moreover, the fact that the original Metalworking Skills Program was broadened to include new courses covering the electronics sector is a clear indication that it has worked very well.

This success story can be attributed to the fact that the MSP is demand-driven and tailored to each company (some of which are housed in the real estate buildings owned by JARC). For those located on other sites, JARC either sends its instructors to deliver in-company training or ensures that the equipment used in the Technical Centre is exactly the same as that used on the employer's premises. In fact, some machines are actually donated by the employers, on the grounds that instruction can be held outside the workplace without taking time away from production time.

Moreover, as a community organisation, JARC has a very strong dedication and ethos that cannot be found among private sector training providers, which tend to be first and foremost driven by profit

motivations. Hence, the quality and dedication of its staff (many of whom work as volunteers) undoubtedly counts as one of the reasons underlying its success. For example, one of those volunteers, a mechanical design engineer employed at an aerospace and defence company, argues that she enjoys "having the chance to share basic computer knowledge within our community, which hopefully opens the door for more opportunities for those willing to learn" (JARC Winter 2008 Newsletter, page 5).

Weaknesses of the initiative

Obstacles or problems that emerged during the design or the implementation of the initiative

This initiative is no doubt one that exhibits very few weaknesses. Arguably, JARC could have an even stronger impact, training more workers than it does at present. But JARC faces the classic problems confronting non-profit organisations, namely that it has to rely on external funding, a position which makes it vulnerable to the policy environment. For example, recent challenges have come in the form of increased competition for training dollars, as community colleges and other non-profit providers strengthened their position in the market; and further outsourcing of human resource management to temporary staffing agencies (which reduces incentive to train workers through MSP and directly hire new ones from the Careers Manufacturing Program).

Quality of response taken

JARC has responded with more determined marketing and more customer service. This has included, for example, holding fundraising events and developing partnerships with other key local labour market actors, especially from the private sector.

Potential transferability

What are the main lessons for Wales and places similar to Wales?

Wales (being part of the UK), shares with the United States the fact it is an English-speaking country and that it has a significant ethnic minority population. It currently attracts additional migrant workers from Central and Eastern Europe (particularly from Poland and Slovakia), who often have very valuable technical industry-related skills but very low English language proficiency.

Recent policy documents suggest that as a response to this issue, Wales, and the UK more generally speaking, have favoured an approach based on ESOL (English for Speakers of Other Languages) training. The underlying policy prescription is that migrant workers and workers from minority ethnic backgrounds must first and foremost acquire English proficiency if they are to stand a chance of either obtaining employment or to moving up the employment ladder. However, it is our view that teaching vocational skills and competencies in the worker's own native language is often much more effective. This is because overcoming some linguistic barriers takes a long time (often many years) and is very dependent on the worker's social ties. On a similar line, there have been debates recently about the necessity for key workers (social workers, doctors, nurses, etc.) to be able to communicate in minority languages (as opposed to expecting sick migrants to explain their health problems) to improve service delivery. Such developments should be welcomed, as they point to the fact that ethical considerations are gaining some ground. There is increased recognition, then, that language skills cannot be considered in isolation from other skills if they are to be fully effective. In this sense, and because it is located within a vibrant multi-racial neighbourhood, JARC's MSP shows that it is possible to take a different approach than one merely expecting low-skilled migrant workers to attend English language classes in order to see their employment prospects improve.

Designing programme contents to address the multiple skills needs of similar target groups is a lesson which is clearly transferable. A further element of transferability concerns the mode of delivery. One of the main reasons why the MSP has worked so well is that is has been delivered 'from below' and 'from within' (and not 'from above') by an organisation with a strong community ethos and an excellent knowledge of the local industrial basis. Wales also has a buoyant community and voluntary sector network and although the programme could be initiated by the government (for example through the Sector Skills Development Agency), the coordination of such a programme by a voluntary sector organisation is highly feasible.

Considerations for successful adoption in Wales and places similar to Wales

It is our belief that the JARC model, which acts as a laboratory, could be successfully imported and adapted in Wales. Wales – and North Wales in particular – has experienced an influx of migrant workers from Central and Eastern Europe, a target population for whom the JARC approach could be highly relevant. Moreover, this transfer, rather than being restricted to metalworking and electronics, could easily be envisaged for other occupations in other manufacturing sectors. Indeed, according to the 2005 report *Wales: a Vibrant Economy*, "the Assembly Government has identified a number of sectors that are widely agreed to be important for the future of the Welsh economy" and that it "supports the development of industry-led sector strategies where appropriate and engages in more general development work with sectors, clusters and broader groupings – for example, manufacturing or the rural economy".

The Welsh authorities have identified ten sectors of strategic importance for future economic growth. According to the report, these include the automotive and aerospace industries. The Sector Skills Councils (SSCs) and sectors which have recently been established could potentially provide appropriate platforms in those sectors for the design and adoption of tailored programmes based on the JARC model.

In doing so, Welsh policy-makers will need to pay attention to some of the lessons learnt from JARC. Namely, to be successful, sectoral initiatives must rely on actors with considerable industry and community expertise that understand the needs and barriers of specific worker populations and which can carefully choose business clients to work with.

For further information

1. More recent data was not available.

2. Both evaluations were launched in the late 1990s. See Conway et al. (2007).

Jane Addams Resource Corporation (JARC)
4432 North Ravenswood Avenue
Chicago, IL 60640
United States
www.jane-addams.org

Ray Prendergast
Executive Director
773 728 97 69 ext. 20

Guy Loudon
Director of Training Services
773 728 97 69 ext. 16

Jose Torres
Lead Metalworking Instructor
773 728 97 69 ext. 25

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THE INOV CONTACTO INTERNSHIP PROGRAMME (PORTUGAL)

Ana Teresa Tavares Lehmann
Department of Economics, University of Porto, Portugal

Rationale for the initiative

Problem to address

The INOV Contacto Programme responds to the scarcity of professionals with specific expertise in internationalisation, and to the increasing needs and challenges of Portuguese companies/ organisations (both in Portugal and their subsidiaries/delegations abroad) in the ever more competitive and interdependent context of globalisation.

Policy context

The INOV Contacto Programme (established in 2005) is an initiative led and managed by AICEP Portugal Global (Portugal's Business Development Agency, responsible for areas such as the internationalisation of Portuguese companies, FDI attraction, and trade promotion). It is a follow-up initiative to the former Contacto Programme, which started in 1997, promoted by ICEP Portugal (an Institute recently replaced by AICEP). Contacto had 8 editions (1997-2005) and INOV Contacto already had 3 editions (2005-2007) – 11 editions in total with 1 550 participants. In fact, Contacto and INOV Contacto is the same programme: from 2005 there was a decision to change the name of the programme following its inclusion in a major policy initiative of the Portuguese Government – the Technological Plan.

The programme offers a 9-month internship to young, qualified professionals (recent university graduates), in a company/organisation outside Portugal.

The programme's main objective is to contribute to the internationalisation of the Portuguese economy, and, in doing so, to raise the profile and improve the image of Portugal abroad. It has a national scope, and aims at training qualified individuals to help Portuguese companies compete in the global economy.

It was thought that placing young professionals with willingness and vocation for an international career in key positions in other countries would allow them to gather invaluable experience that they could bring back to Portugal, as well as providing important opportunities for networking and improving the perception of Portugal abroad. It was also thought that, after these young professionals develop their networks and career; this strategy would be a good way to attract more and better business opportunities for Portugal. Moreover, these young professionals, upon their return to Portugal, would often work in local small and medium enterprises /SMEs, and could have a key role in stimulating and managing the eventual internationalisation processes.

Description of the initiative

Objectives

General objectives of the initiative are:

- *For the business community:* to provide a service to companies by placing qualified, high potential young professionals that will carry out projects in the area of internationalisation.

- *For the labour market:* to contribute to increasing the competencies of young professionals, at the same time providing them with a remunerated job, and preparing them for the requirements of the labour market in jobs with an international focus.

- *For the Ministry for the Economy and Innovation (entity responsible for AICEP):* to support exports and other forms of internationalisation, to provide a service to companies, to create an up-to-date effective information network about international markets and sectors.

Specific objectives are:

- To train young professionals in the area of international trade through effective integration in foreign markets;

- To overcome insufficiencies in human resources' training by contributing to the formation of the critical competencies needed for success in global markets;

- To develop studies and projects in the area of exports and other forms of internationalisation of Portuguese companies;

- To gather and synthesise information about international markets.

Activities and structure of the programme

The programme, which involves a part in Portugal and a part abroad for each participant, has a maximum length of 10 months (typically it lasts for 9 months). It comprises the following sequential phases, together with theoretical and practical training modules:

1st phase: Reception Course (focused on International Management). A residential, intensive course, during 7 days, convened by some leading experts in the field in Portugal.

2nd phase: Internship in a Company/Organisation in Portugal. This is a compulsory stage, defined by AICEP according to the interest and possibilities of the participating companies. This phase is intended to develop independent work in a Portuguese company during 2 or more weeks.

3rd phase: Internship in a Company/Organisation abroad. This phase of the internship is carried out abroad, in a country selected by AICEP, for a maximum period of 9 months, in the entity communicated to the trainee during the 1st phase. This phase of the internship may be reduced in length, to a period of no less than 6 months; if problems arise in regards to visas or other entry/permanence formalities.

After the programme, the network lives on through regular contacts via a web-based portal called Network Contacto. Such a highly interactive network is based on three pillars:

1. Trainees (they participate in each edition of the initiative and, aside from their responsibilities with the entity where they do the internship, they develop projects deemed of economic interest on, for instance, the markets where they are placed – that may be published in the NetworkContacto website, if they include updated information and knowledge useful for national managers)

2. 'Contacts' (this designation - in Portuguese, 'contacteantes' - is attributed to ex-trainees; at the moment, there are over 1 400 'contacts' in the network; they ally their expertise in the fields of exports, technology and international management to the experience and awareness they have of other countries and cultures; they are a major value-adding component of NetworkContacto)

3. AICEP (the entity that manages the programme, leading and acting as a mediator in the production and dissemination of all information generated by the network)

Target group

The beneficiaries of the programme are the trainees themselves, Portuguese and multinational companies with a significant presence in Portugal, and foreign companies which, although not represented in Portugal, have a high strategic importance for the country's economy, as well as relevant international institutions such as the World Bank, the EU Commission, the European Investment Bank, etc. In each edition, AICEP may specify some requirements regarding the type of trainees and recipient organisations. For instance, the latest edition (which started in 2007) is dedicated to internships in new technologies, as well as from management/economics.

Delivery arrangements

Applications (both by potential trainees and recipient entities) are made exclusively online (in http://networkcontacto.com), by filling in a specific form provided on the programme's website. Who can/should apply is defined by AICEP in each edition.

The companies can apply at any time of the year, and each year, the recent graduates can apply in a pre-defined period. The formalities are all described on the respective website, as well as the target groups, and other specific information relevant to the edition under way.

All selected participants receive automatically an email address, specific for the network, as well as access to the network's internet resources. Both are valid during and after the programme.

During the first phase of the programme, the name of the company or organisation where the trainee will have his/her internship is disclosed to the trainee. Then, the remaining phases of the internship will occur (refer to the section above, related to the structure of the programme).

Budget

In its 11 editions, the total budget of the Programme was about EUR 50 000 000.

The budget for the 3 editions of INOV Contacto (2005-2007) was EUR 14 651 075. This, divided amongst 576 trainees, amounts to EUR 25 435.89 per trainee. Twenty-eight percent is supported by AICEP, and the remaining by EU and nationally-funded programmes.

Impact of the initiative and evaluation evidence

Outputs

Overall, INOV Contacto has been a highly successful initiative, which is evidenced by the increasing demand, both by companies and by trainee candidates, and by its growing prestige – that recently led to it being selected as a 'best practice case' by a EU Commission publication, as described later.

Throughout its 11 editions, the initiative received over 25 500 applications from young graduates. 1 550 among them were selected and participated in the programme. As a consequence of this high demand, the average recruitment rate is 6%. This allows for the selection of very qualified candidates, for a programme that aims to be characterised by high quality and selectivity.

About 50% of the trainees have degrees in Management/Economics, while 24% have an Engineering/ technological background. The average age of the trainees is 26, 57% are male, and 43% female.

Approximately 500 companies/organisations have participated in the initiative, 40% being Portuguese-owned companies, and 51% foreign-owned firms.

In regards to the markets/countries where the internships take place, 66 countries in 5 continents have already received trainees. Fifty-two percent of the internships were carried out in the following five countries: USA (15%), Brazil (11%), Spain (11%), the United Kingdom (9%), and China (6%). China (PRC) is the country with the highest growth, receiving 91 trainees in the last two editions. The most common sectors of activity represented in the programme are: consulting, biotechnology, and other sectors in the new technologies.

In the last 3 editions of the programme, the companies/organisations involved asked for between 2 and 3 times more trainees than the available supply. In INOV Contacto's 1st edition (2005), 227 companies/organisations offered 595 places for 302 selected trainees; in the 2006 edition, 233 firms/organisations offered 685 positions for 190 available trainees. In the latest edition (2007), still under way, and entirely dedicated to new technology sectors, the 78 participating companies offered 334 places, for 85 selected trainees. These numbers show the increasing prestige of the initiative, resulting in an ever-growing demand (both by firms/institutions and by trainees), and the consequent tighter selectivity.

Outcomes

In order to assess more accurately the outcomes of the programme, a survey is implemented in every edition. At the end of the 8th edition, from a sample of 158 respondents, over 78% declared that they found a job in their preferred area very quickly after the internship's conclusion - most declared that they found employment in less than 3 months. Seventy percent of the trainees were convinced that the programme was a decisive influence in their labour market integration. The majority of those currently working in Portugal believe that the knowledge and competencies acquired during the programme are regularly put into practice, and contribute to enhancing the competitiveness of the Portuguese companies where they work.

The questionnaire employed during the 9th edition (the 1st of INOV Contacto) surveyed 284 trainees; 206 replies were obtained. The 302 available internships were spread over 38 countries, in 5 continents, in a total of 136 companies/organisations. In that edition, 44% of the ex-trainees were invited by the recipient entities to continue working there (the geographical incidence was mainly in Europe). Twenty-six percent of the ex-trainees accepted the proposal. The 18% of the ex-trainees that did not accept that job offer did so due to reasons exogenous to the programme, notably geographical distance and restrictions imposed to obtaining work permits and necessary visas for permanence in those countries. Very few ex-trainees were unemployed after the programme (only 8% were unemployed 3 months after completion). It should be noted that this was the record edition in terms of number of applications by potential trainees (4713) and recipient entities (227).

Another very interesting indicator is that several ex-trainees are also founders of entrepreneurial ventures and start-ups, mostly in the fields of new technologies and specialised consulting. Several former trainees were also recruited by AICEP in 2007, when it undertook a major restructuring of its external offices – for instance, 3 ex-trainees lead AICEP's representation in Mexico City, in Santiago (Chile) and in Tunis – hence recognising the talent, qualification, and expertise of the ex-trainees.

A deeper evaluation of the results of the INOV Contacto initiative is now under way, notably in regards to labour market insertion and the specific contribution of the programme to participants' employment. This evaluation will be available in mid-2008, implying the return of the trainees from the latest edition, and treatment of the respective data.

Recently, an online survey was sent to all companies/organisations and ex-trainees that have participated since the 1st edition of the initiative, asking them about areas like the initial course, the internship itself, and their success in finding a job. This is intended to provide a detailed assessment of the programme that will enable AICEP to continually improve it, suggest innovative approaches, new paths, and/or alter procedures in future editions. It will be possible to obtain the results of this evaluation in June 2008.

Effectiveness and efficiency

The programme was deemed highly effective - it even surpassed the planned objectives - and efficient (the budget of around 25 000–30 000 EUR per trainee is considered a worthwhile and reproductive investment).

Furthermore, the initiative was selected as a 'best practice case' in the area of Human Resource Development/Management Development Programmes (in the sub-area Graduate Programmes), and it was a part of the publication focused on best practices of the Enterprise and Industry Directorate-General (of the EU Commission). This publication (titled "Supporting the internationalisation of SMEs: Good practice selection") aimed to assess how public policy can support SMEs in their international growth efforts, especially in regards to taking an increasingly European and international focus.

INOV Contacto has thus been an innovative programme that inspired new ideas and provided an effective matchmaking between a considerable number of young graduates (who had practical training in several countries in addition to their university degree) and international companies. It also, and very importantly, created and managed an informal knowledge network of national graduates (independent of the country of residence), that are actively in touch, profiting from sharing their experiences, career evolution, and generating new opportunities for themselves and for the companies/organisations they work for, as well as contributing to Portugal's prestige and good image abroad.

The initiative helped to create a vast community, both open and cosmopolitan, with convergent ideas and values, that continuously shares and disseminates information and knowledge, the 'NetworkContacto' (described above), gathering current trainees, ex-trainees, AICEP, and all the organisations involved throughout the years. It is an excellent opportunity for knowledge sharing and information dissemination. NetworkContacto has about 1 781 registered users, from which at least 1 551 accessed the network at least once in 2007. Hence, it can be concluded that this network is used actively by an increasing number of people. The information in the site is rich and diverse, including pieces on foreign markets, sectors, products, trends and perspectives, business opportunities, and on best practices, among other relevant themes.

The interaction among participants has been so successful that they have even created a blog (http://visaocontacto.blogs.sapo.pt), which has been visited more than 21 000 times.

The impact and degree of satisfaction of those involved with the programme is also visible through the many testimonials reproduced in the respective website (https://www.networkcontacto.com/pt/ns0/ta122/s4/ta.aspx).

Below is an example of a testimonial by a top manager:

> "A Win-Win Experience"
>
> We have in the past years received trainees from the Contacto/ICEP programme, and we are thankful to the programme that such trainees usually stay for a long 9 month period. Such period enables us to benefit from the stay of each of the trainees. The trainees can be given sufficient time to get acquainted to the new working environment and to learn experimental techniques to be able to successfully contribute to our ongoing projects at Fluxome Sciences. The INOV Contacto Programme is an excellent opportunity for us to strengthen our ongoing activities as it gives us the freedom to test additional scientific hypotheses. On the other hand, trainees have the chance to get insight into a foreign work environment, and hereby to gain work experience and to apply their university knowledge for the first time. Altogether, we clearly have a win-win situation for both the company and the trainee." *Jochen Förster, CEO Fluxome Sciences*

Strengths of the initiative

What worked well?

The specificity and the targeted and practical features of the programme: by contributing to the training of the interns in critical and much-needed skills, the INOV Contact initiative proved very specific, practical, fine-tuned and targeted to the needs of companies in the process of internationalisation.

The International Management course provided at the beginning raised the trainees' awareness of globalisation, economic integration and corporate strategy in an internationally competitive context, and formed important competencies that were critical to the companies involved.

Selectivity was effective, as the chosen trainees were considered excellent employees and high potential individuals by participating entities.

What was innovative?

The programme was *innovative*, in terms of the implementation of the phases during the internship (course, internship in Portugal, internship abroad), providing a diversified experience in a very short time – yet long enough to deepen the knowledge of a company/organisation/market/sector - and also in terms of the networking opportunities provided after the internship.

Reasons underlying success

Reasons underlying success are, notably, the strong commitment of policy-makers and technical staff at AICEP (and formerly at ICEP) and at the Ministry for the Economy and Innovation; the availability of public funds (national and also provided by the EU); the supply of highly qualified young graduates from the best Portuguese universities, and their willingness to go abroad; and the very positive response from companies and other institutions in Portugal and abroad. Last but by no means least, the consistency in implementation, and the careful follow-up of the initiative by the staff at AICEP.

Weaknesses of the initiative

Obstacles or problems that emerged during the design or the implementation of the initiative

During the design and the implementation of the programme, there were very negligible obstacles and problems. The programme was quite successful, both on the demand and supply side. However, there are a few points to improve, as follows:

- *Dimension/scale*: each edition of the programme should provide a greater number of internships, so as to gain critical mass and scale, in order to augment the capabilities of Portuguese companies in regards to their internationalisation processes, and to reposition Portugal's image through the influence of high-quality, well-placed managers in key positions in leading companies/institutions. The initiative would also help to attract business opportunities in interesting sectors and markets. Increasing the scale of the programme would depend on the ability to gather more funds.

- *Greater involvement of the companies/organisations* throughout all phases of the initiative. In this way, the allocated resources will better correspond to the needs and expectations of both trainees (in terms of their careers) and recipient entities (in regards to their international development). A greater participation in the evaluation seems quite desirable, as well as considering cost-sharing of the initiative by the participating companies.

Quality of response taken to obstacles or problems

AICEP is currently working with the purpose of helping to turn these improvements into reality. The new EU Funding Framework 2007-2013, and the increasingly open and international companies' 'mindset' will provide good opportunities to increase both the scale of the programme, and the involvement of the participating companies/organisations. A greater attention to the evaluation of the Programme and its cost effectiveness is also a step to be accomplished in the next year.

Potential transferability

The approach is deemed relevant for a relatively peripheral, small, open economy such as Wales – that shares these characteristics with Portugal. Wales faces very similar challenges as Portugal, in the

current context of increasing competition and globalisation of businesses. On the one hand, international companies threaten to de-localise. Local companies (especially SMEs) often lack critical mass and are not part of international networks – in sum, are not internationalised (or not enough). Often, they also lack qualified human resources with skills related to internationalisation processes. Hence, this experience could be interesting for Wales given these shared circumstances, as well as the extremely positive track record and success of this initiative. On the other hand, Wales has a group of excellent universities that could supply young, promising graduates, with potential and ambition, to have such a rewarding experience abroad.

This initiative is also in line with the vision of an increasingly competitive and dynamic economy, expressed by WAG in the strategic document "Wales: A vibrant economy". It is particularly consistent with the stated aim of promoting employment, not only in quantity, but also by raising the quality of jobs; with the objective of helping local businesses to compete; with the promotion of exports and other forms of internationalisation; and with the need to respond to the challenges of the global economy, notably the competition by countries such as China and India. Interestingly enough, the INOV Contacto programme and its focus on information gathering and dissemination for the profit of businesses has relevant similarities with a recent Welsh initiative (Knowledge Bank for Business). For all of these reasons, the present initiative seems to have the potential for a very successful application in the Welsh case.

What are the main lessons for Wales and places similar to Wales?

The programme indicates that there are benefits that could be of interest to Wales, notably: the exposure to the global economy and other cultures; the ability to negotiate internationally at a high level; the leverage of placing young professionals in important places; and the return of qualified individuals who may use their newly acquired knowledge to stimulate the internationalisation of companies. The main message is that a group of cosmopolitan and well-trained young managers with international exposure is a strategic asset and quite feasible to develop in a short period of time.

Considerations for successful adoption in Wales and places similar to Wales

Considerations for successful adoption in Wales and places similar to Wales would be, above all, the existence of an institution willing to promote and manage the programme and the availability of adequate financial resources.

For further information

Maria João Bobone
Agência para o Investimento e Comércio Externo de Portugal
Tel. + 351 217 909 690
maria.bobone@portugalglobal.pt

INOV Contacto: https://www.networkcontacto.com

Newsletter of the network/blog with articles written by participants during the programme:
http://visaocontacto.blogs.sapo.pt/

ECONOMIC AND PHYSICAL REGENERATION

NORTH OF MASSACHUSETTS AVENUE (NOMA) INITIATIVE (USA)

Marc A. Weiss
Global Urban Development, USA

Rationale for the initiative

During August 1997, the US Congress passed legislation, signed by President Clinton, entitled the National Capital Revitalization Act. This law was primarily designed to address long-term structural fiscal imbalances harming the financial viability of the District of Columbia Government, such that it was running substantial budgetary deficits, unable to raise sufficient revenue to meet its expenditure obligations. The federal government created the District of Columbia Financial Responsibility and Management Assistance Authority (the "Control Board") to order substantial reductions in personnel and spending, to directly manage the DC government, and to produce a strategic economic development plan designed to grow private sector businesses and jobs for DC residents, among other reasons, in order to increase the tax and revenue base.

In the fall of 1997, Dr. Andrew Brimmer, Chairman of the Control Board, hired Richard Monteilh as the Director of the Office of Economic Development and Department of Housing and Community Development, and then hired me as the Senior Adviser to Mr. Monteilh, and as the Coordinator of the Congressionally mandated strategic economic development plan. Within one year Richard Monteilh and I, working with literally thousands of city and regional stakeholders from business, government, labour, civic, community, and faith-based leadership, including a 40-member steering committee, produced an Economic Summit held at the World Bank, attended by more than 2 000 people, and published *The Economic Resurgence of Washington, DC: Citizens Plan for Prosperity in the 21st Century*. This first-ever comprehensive, private sector growth-oriented economic development strategy, focuses on three broad categories: strategic industries (six key industry networks/clusters, plus growing businesses and jobs across the private sector), strategic populations (workforce development, plus attracting and retaining residents) and strategic areas (downtown and neighbourhoods). The centrepiece of the plan was 40 strategic actions whose implementation was committed to begin within one year of the plan's publication in November 1998. Among these 40 actions were two that are central to this report: Action 26—Develop NoMa (North of Massachusetts Avenue) as a Technology, Media, Housing, and Arts District; and Action 29—Build a Metro Station at New York Avenue to Spur Development.

Description of the initiative

We focused on what is now called NoMa (I actually invented the name in June 1998) because it was a highly underdeveloped and predominantly abandoned and derelict former industrial area close to the centre of the city, immediately north of the main train terminal, Union Station, covered by railroad tracks, large vacant parcels of land, and mostly vacant industrial and warehouse structures. NoMa is traversed by New York Avenue (Route 50), one of the region's most heavily travelled thoroughfares, leading directly to the White House in downtown Washington, as well as other major roadways including North Capitol Street and Florida Avenue. We firmly believed that downtown commercial

development would eventually be moving east and north along the Massachusetts Avenue and New York Avenue corridors. The city had recently built the Washington Convention Center on New York Avenue just north of the downtown, and the private sector, with city government infrastructure financing, had constructed the Verizon Center sports and entertainment arena and the Gallery Place retail and entertainment mall, all of which were serving as catalysts for new investment in offices, housing, and retail in the East End of downtown Washington, generating a dynamic movement east and north that could spark the emergence of NoMa as a major development opportunity.

NoMa Economic Development Strategy: Action 26 and Action 29

The economic strategy for NoMa was built upon the following fundamental assets: centrality of location, regional transportation accessibility, availability of large development sites and industrial loft-style structures, broadband fibre optic cable lines already in place underneath the railroad tracks, the role of the nation's capital as an international media centre, the 1990s boom in information technology and telecommunications throughout the metropolitan region, and the urban lifestyle that is so attractive to talented and creative young artists, multi-media professionals, and technologists. The detailed delineation of the fundamental economic assets and factors that formed the basis for the comprehensive and innovative economic development strategy driving both Action 26 and Action 29 is briefly summarised in the following paragraphs.

The city's 1998 strategic economic development plan, *The Economic Resurgence of Washington, DC: Citizens Plan for Prosperity in the 21st Century*, identified six industry clusters/networks that are the key private sector economic engines of income and employment growth in metropolitan Washington:

- Business/Professional/Financial/Association Service
- Hospitality/Entertainment/Tourism/Specialty Retail
- Universities/Educational/Research Institutions
- Biomedical Research/Health Services
- Media/Publications
- Information Technology/Telecommunications

The first five of these industry networks have a very strong presence within the city of Washington, DC and continue to represent the city's dominant role within the surrounding metropolitan region in fostering such forms of economic activity. The last of these industry networks – Information Technology/Telecommunications – was the fastest growing of the six in metropolitan Washington during the 1990s, but most of that growth took place outside of the city, mainly in northern Virginia. Washington, DC, with the exception of Verizon, MCI, AT&T, and Sprint, did not significantly benefit from the 1990s expansion of "InfoComm" businesses and jobs. The city's economic development plan laid out a clear strategy to change that dynamic, by investing in, emphasising, and combining five fundamental assets of Washington, DC that provide the city with a competitive advantage over distant locations in the Virginia and Maryland suburbs:

- Because Washington, DC is the national capital and a global city, it is the main generator of "content" for the InfoComm industry network. We are where the information comes from

that is being broadcast in newer and faster ways throughout the world. That is why the city's NoMa Action 26 and Action 29 economic strategy directly linked the Media/Publications industry network with Information Technology/Telecommunications, particularly with the key media organisations in the NoMa area, including National Public Radio (NPR), Cable New Network (CNN), Black Entertainment Television (BET), XM Satellite Radio (XM), and Atlantic Video (AV).

- As the largest and oldest central city in the metropolitan region, Washington, DC offers the urban lifestyle that is highly desirable to many talented and creative professionals, and thus a major magnet for the young "techies" and artists that bring strength to multimedia, software, internet, web design, and other related technology businesses. That is why Action 26 designated the city's newly proposed mixed-use technology, media, arts, and housing district as "NoMa" (North of Massachusetts Avenue), to invoke the spirit of New York's SoHo and TriBeCa in lower Manhattan, San Francisco's SoMa, Denver's LoDo, and other hip, youth-oriented urban neighbourhoods that have recently been attracting multimedia technology entrepreneurs, workers, and residents in various US cities. These young professionals and artists want to live and work in pedestrian and transit-friendly urban settings with easily accessible entertainment and nightlife, interesting historic architecture, and ethnic and social diversity. In order to attract more of them to metropolitan Washington, they will need to be living and working within the city's boundaries. Under this competitive strategic economic development scenario, Washington, DC is competing with New York, Los Angeles, San Francisco, Chicago, Miami, and other cities across the country, and not with Herndon, Gaithersburg, or other communities within the Washington region. Hence the city's NoMa economic development strategy also linked the Hospitality/Entertainment/Tourism/Speciality Retail industry cluster/network with Information Technology/Telecommunications.

- Washington, DC, as the traditional metropolitan hub which once contained over 90 percent of the region's people and jobs, still maintains the region's best transportation system in terms of rail, transit, highways, and thoroughfares, and it is the most centrally located and easily accessible point within the entire metropolitan area. Federal Express (FedEx) placed its main Washington regional distribution facility at the corner of New York and Florida Avenues NE for precisely that reason of maximising regional transportation accessibility and centrality of location.

- Washington, DC, by virtue of being the nation's capital and seat of the Federal Government, plus the historic regional centre for railroad lines, possesses a distinct competitive advantage in other key aspects of physical and communications infrastructure, particularly the availability of existing fibre optic cable lines and the ability to lay new ones efficiently. This was and still is especially true of NoMa near the New York Avenue Metro Station.

- Washington, DC, particularly in NoMa, retained a significant of amount of vacant, developable land, and a stock of older industrial factory and warehouse-type brick buildings that are attractive for developing a mixed-use technology, media, arts, and housing district. The older existing buildings had the high-tech look and design features, combined with large open floor space and heavy floor-load capacity that made them cost-effective for quick renovation and occupancy by international telecommunications corporations. These same buildings also attracted smaller start-up multimedia technology companies and live-work space for technology entrepreneurs and artists. New buildings are now being developed to fit well with the contextual character of an older urban industrial high-tech image, both for commercial and residential lofts, as is being done in other cities.

The city's NoMa economic development strategy to grow businesses and jobs in media and technology, as articulated through Action 26 and Action 29, made full use of all five key assets listed above. This meant attracting and retaining both large corporate facilities as well as small business start-ups. It also meant expanding the range and diversity of specialised technology equipment as well as technology people, because both physical and human capital are vital for the long-run success of creating a highly competitive technology sector in Washington, DC. In other words, providing venues for expensive, capital-intensive investment in high-tech telecommunications equipment by corporations such as Qwest, WorldCom, Enron, Level 3, and Global Crossing was seen as being equally as important as providing space for media and software companies like XM Satellite Radio, Blackboard, and Doceus. Both were viewed as being necessary in order for NoMa to successfully compete economically.

While the city did fail to retain the world headquarters of MCI after its purchase by WorldCom in 1998, we did succeed during 1999 in attracting a new MCI telecommunications equipment facility in NoMa at Fourth and T Streets NE, emphasising the continued strength of the fundamental assets that made the city competitive as a technology business location. The commitment by Qwest Communications International in December 1998 to develop a 100 000 square foot "cyber centre" in the long-abandoned Judd & Detwiler printing plant at 1500 Eckington Place NE paved the way for Washington, DC's technology industry initiative, because it demonstrated for the first time that the city could attract high-tech companies that had previously been interested mostly in suburban environments. The Qwest deal in 1998 helped convince XM Satellite Radio in early 1999 to lease the rest of the available space and move their headquarters and 24-hour studios to 1500 Eckington Place, and created the momentum for establishing the McKinley Technology Magnet High School just two blocks up the hill from Qwest and XM.

A key element of the Action 26 economic development strategy was intended to enable Washington, DC to attract location-based investment by large corporate technology users. In order for such a strategy to succeed, the city needed to have in place the most efficient, state-of-the-art broadband telecommunications infrastructure. Private investment in technology centres in NoMa only created a modest number of direct, in-house jobs managing high-tech equipment, but they also served to open up the possibility for many other local technology firms to flourish through the increased availability of up-to-date telecommunications services, plus they generated many new business and job prospects for a much large number of local contractors and suppliers selling goods and services to these corporate entities. In addition, they created substantial entrepreneurial and employment opportunities in adjacent low- and moderate-income neighbourhoods, including for small minority-owned and women-owned firms

When I was serving as Coordinator of the Strategic Economic Development Plan for Washington, DC during 1997-99, under my direction the DC Department of Housing and Community Development provided USD-225, 000 in grant funds for the Cultural Development Corporation to hire Economics Research Associates (ERA), Urban Design Associates (UDA), Peter Calthorpe and Associates, and Artspace as professional consultants to produce a NoMa Development Strategy implementing Action 26 of the city's 1998 strategic economic development plan. The clear purpose and successful results over the past decade was to create a mixed-use urban media/technology district with various types of media and technology businesses, along with arts and entertainment, retail, and housing. Certainly the New York Avenue Metro Station was designed to act as a catalyst for mixed-use development, which is why we included the federal ATF headquarters, a new USD 100 million building for 1 200 employees, as part of the overall community fabric

New York Avenue Metrorail Station as the Key Public-Private Infrastructure Investment

A lynchpin of the NoMa strategy was to construct a new Metrorail station on an existing train line (the Red Line) at the intersection of New York Avenue and Florida Avenue, NE. One of the largest gaps in the central city portion of the Metrorail system was between Union Station and Rhode Island Avenue to the north, nearly two miles apart, and New York and Florida Avenues were precisely halfway in between those two stations, so it made perfect sense to place a station at that location. Further, the US government's General Services Administration (GSA) essentially requires that all government-owned buildings as well as any federal government offices or facilities leased from private sector building owners should be located within 2 500 feet (walking distance) of a Metrorail station, in order to promote transit ridership and discourage automobile usage. Therefore, in order to spur the development of NoMa, we needed to enhance its rail transportation accessibility in general, and specifically to comply with the GSA location leasing criteria, which meant that the highest economic development priority for NoMa was to finance construction of the New York Avenue Metro Station.

We faced several difficult challenges. First, the Washington Metropolitan Area Transit Authority (WMATA), the regional transit agency, had decided not to build a Red Line station at New York Avenue when the system was initially planned and constructed in the 1960s and 70s, and they were very reluctant to add a new station there now. Second, WMATA does not directly finance the building of new stations or lines. Those costs are paid for by the various local government jurisdictions. In other words, the District of Columbia Government was required to pay for building a new station in the city. The DC government at that time, however, was fiscally insolvent with a very large budget deficit, and the Congress was quite upset about the District of Columbia's near-bankruptcy. There did not appear to be any possible scenario that would enable us to get the money for WMATA to build a New York Avenue Metro Station.

Indeed, WMATA engineers even insisted that building such a station was technically infeasible, would need to be constructed further north in a much less economically convenient and desirable location, and would cost a minimum of USD 150 million. To counter their scepticism, we hired the same engineering firm that WMATA employs, the Parsons Transportation Group, who produced an engineering feasibility study clearly demonstration that the station could indeed be built where we wanted it for no more than USD 75 million. We then created a preliminary economic plan for the area to convince people that the development opportunities were clearly on the horizon as long as the Metro station was there. After these two studies were completed, I told everyone that this was a very clear case of "if you build it they will come." We reached out to every major constituency among businesses, property owners, and community residents and convinced them that this was not about building a transit station, but rather about fostering substantial transit-oriented sustainable community economic development. We promised that with the new station would come at least 5 000 new jobs and USD 1 billion of new public and private investment and development.

The problem was that we still had no money to build the station. The DC government had a deep fiscal deficit, and the US government was not in a mood to assist. Accordingly, I turned to the private sector. Surrounding the proposed station site were many large land parcels and old industrial buildings, all of which were zoned for high-density commercial use. I met with the landowners and property developers and presented them our economic vision for NoMa. They all agreed that building the Metro station would successfully spur new development. Then I asked them to commit to collectively paying USD 25 million to build the station. They refused, arguing that it was the government's responsibility. I countered that normally this was true, but we were facing special emergency circumstances that prevented such an occurrence, and that if they really wanted to earn millions of dollars from developing their property near the proposed station, they were first going to

have to help pay for the station. If they would commit, then the DC government would find a way to come up with the matching funds rather than walk away from the potential to leverage such a generous private sector offer, and then the US government would do likewise.

It took an entire year of discussion and persuasion, but in December 1998, the private owners agreed to pay USD 25 million (amortised over 30 years) for the New York Avenue Station. In May of 1999 the DC government agreed to commit USD 25 million as well, and in September 2000 the US Congress appropriated its USD 25 million contribution for the station. In addition, the US government provided an additional USD 6 million for constructing a portion of the Metropolitan Branch Trail (hiking and biking) as part of the New York Avenue Metro Station project, the DC government contributed an additional USD 19 million, and the landowner donated USD 10 million in small land parcels to facilitate station construction, for a final price tag of USD 110 million, USD 35 million from the private sector, USD 44 million from the DC government, and USD 31 million from the US federal government.

After I left the DC government, the Action 29 group was incorporated as a non-profit organisation, the Action 29-New York Avenue Metro Station Corporation, and I served as its Chairman from its inception in 1999 until its termination in 2005. Action 29's Board of Directors consisted of the major developers and property owners; other large corporate NoMa business leaders such as the CEOs of Verizon, XM Satellite Radio (XM), and Black Entertainment Television (BET); elected and appointed senior officials from WMATA, the DC government, the US government; leaders from surrounding neighbourhoods and communities drawn from a wide range of professional fields including small business, education, real estate, community economic development, community services, affordable housing, public health, and religion; and environmental groups such as the Washington Area Bicyclist Association. Extensive community education and outreach over several years yielded outstanding political results: at the WMATA public hearing on the New York Avenue Metro Station's Environmental Impacts Study, there were 35 community witnesses strongly supporting he project, and none opposed.

The Action 29 Corporation represented the private sector financing of the Metro station along with the private sector and community perspective on strategic planning for the entire NoMa initiative, and we hosted monthly "stakeholder meetings" involving all of the relevant actors in the process. These meetings were completely open to anyone who wished to attend. The Action 29 Corporation had a total expense budget of USD 250 000, much of which was spent on fees to legal and financial advisers, plus two huge grand opening parties, one for the New York Avenue Metro Station groundbreaking in December 2000, and the other for the opening of the NoMa Community Outreach and Marketing Center at 64 New York Avenue NE during October 2002. The New York Avenue/Florida Avenue/Gallaudet University Metrorail Station on the Red Line officially opened in December 2004. During October 2006 the DC Office of Planning released the *NoMa Vision Plan and Development Strategy*. In March 2007, private property and business owners established the NoMa Business Improvement District (BID) to market the area, plan for its public and private improvements, and keep the area attractive, clean, safe, and secure.

Action 26 Success: Attracting Qwest Communications International & XM Satellite Radio

Four key actions combined to generate the biggest single success of Action 26, namely the attraction in 1999 of XM Satellite Radio to NoMa. XM actually moved into NoMa from offices in Reston, Virginia, near Dulles International Airport. They moved in order to be closer to the "creative class" workforce, and the energetic activities of the NoMa Arts Coalition and the Cultural Development Corporation helped reinforce NoMa's image as a media-oriented neighbourhood, together with the particularly reassuring nearby presence of Cable News Network (CNN), National

Public Radio (NPR), and Black Entertainment Television (BET). These factors were a necessary but not sufficient condition for attracting the major USD 75 million investment by XM Satellite Radio in their new state-of-the-art studios in NoMa, bringing 800 new well-paid professional media jobs to NoMa, along with rapidly growing corporate revenues of more than USD 1 billion annually from nine million subscribers nationwide. XM Satellite Radio's decision in the spring of 1999 to locate their world headquarters and main production studios in NoMa was also based on the public-private commitment to build the New York Avenue Metrorail Station two blocks from the XM studios, the commitment by the US Bureau of Alcohol, Tobacco, and Firearms to construct a new headquarters building across the street from XM, providing increased community security, and the commitment by the DC Metropolitan Police Department to locate a community facility in the XM building. Finally, prior to XM's major investment in purchasing and renovating the vacant former Judd & Detwiler Printing factory, first Qwest Communications International signed a lease in December 1998 for 100 000 of space in the basement of the building to locate a major regional technology centre. This large-scale private financial investment, the first in NoMa by a world-class telecommunications corporation, helped change the perception of NoMa from a derelict abandoned area into a dynamic and growing magnet for private investment and development. Today XM employs 800 people in NoMa, NPR employs 900 people, CNN and BET each employ 400 people respectively, and Atlantic Video employs 100 people, totalling 2 500 media jobs in NoMa just from these five major companies, with an additional 500 media jobs in NoMa from among many smaller media-related firms.

The story with respect to technology companies is more mixed, and offers a cautionary tale about focusing on particular industry sectors that are subject to the changing vicissitudes of the boom-and-bust economic cycles in the global financial marketplace. After Qwest Communications International invested in a new facility in NoMa, they were quickly followed by similar investments in technology or data centres by other telecommunications industry giants, including Enron Broadband, MCI-WorldCom, Global Crossing, and Teleglobe. This rapidly accelerating growth of technology centres culminated in the fall of 2000 with the proposed investment by Level 3 in developing a USD 500 million technology centre, the largest single such facility to be built in the mid-Atlantic region. At that time the telecommunications industry began to face a market adjustment, or recession, and many corporations began cutting back on spending and investment commitments. Level 3 backed out of their proposed NoMa deal, and soon thereafter Enron, WorldCom (now MCI), Global Crossing, and Teleglobe all faced financial bankruptcy. For example, Teleglobe invested USD 125 million in new high-tech facilities in One NoMa Station, and then the company was purchased by Bell Canada, which decided to cancel the lease and close the facility less than one year after it opened. The good news is that the DC government, as part of the overall NoMa initiative, renovated an old closed high school in the neighbourhood, turning it into a citywide magnet, the McKinley Technology High School. This new state-of-the-art educational facility is helping to train students from low- and moderate-income African-American families for the types of media and technology career opportunities now available from the growing number of media and technology companies located in NoMa as well as throughout the city and region.

The net result is that NoMa has succeeded in becoming a media, arts, and housing area, but not a highly concentrated technology corridor. Some of these newly constructed technology centres are still located in NoMa, but most of the growth is now focused on private office buildings, hotels, apartment and condominium buildings, restaurants and entertainment facilities. The DC government's construction of the new Washington Convention Center in NoMa, together with the nearby Gallery Place retail mall, the City Museum at the Carnegie Library, the Newseum by the Freedom Forum (*USA Today*), the new Shakespeare Theatre, and many other key new retail stores, eating and drinking establishments, and cultural facilities, have served to turn NoMa and its surrounding area into one of the city's and region's most economically dynamic areas.

Impact of the initiative and evaluation evidence

The broader NoMa area extends west to east from Mount Vernon Square to Bladensburg Road, and south to north from Massachusetts Avenue to Rhode Island Avenue. Five separate Metrorail stations generally serve the broader NoMa area: Gallery Place-Chinatown, Mt. Vernon Square-Convention Center, Union Station, New York Avenue, and Rhode Island Avenue. Yet the heart of NoMa is the area around the New York Avenue Metro Station, all of which is now encompassed by the NoMa BID. In evaluating the results to date of this now decade-long initiative, we will focus primarily on the NoMa BID geographic area, in which the total assessed value of private property totalled nearly USD 2.3 billion during 2007, up from USD 535 million in 2001, an increase of more than 30 percent annually. The total number of new permanent jobs (not including temporary construction jobs) created in the area since 1998 is approximately 15 550. The total amount of private investment in the area since 1998 is nearly USD 1.1 billion. The total amount of new development in the area since 1998 is 3.7 million square feet of office space and 21 000 square feet of retail space. Average office rents in NoMa are now at USD 45 per square foot, significantly higher than the citywide average of USD 41. The top price for prime downtown office locations currently is USD 60 per square foot. The New York Avenue Metrorail Station average weekday passenger boarding has increased by 60 percent over the past two years. In addition, since 1998 Metrorail ridership has increased by 39 percent at Union Station and by 32 percent at Rhode Island Avenue.

Also, currently there are five more projects under construction, totalling USD 400 million in private investment and 1.2 million square feet of mixed-use space, including 750 000 square feet of new office space, 212 residential apartments, 218 hotel rooms (Courtyard by Marriott), and 30 000 square feet of retail facilities. The currently projected totals for NoMa in 10 years are as follows: 23 million square feet of mixed-use development (10 million office, one million retail, 8 000 homes and apartments, and 1 200 hotel rooms); more than USD 8 billion in private investment, 36 000 permanent jobs, 75 000 construction jobs, and USD 500 million of increased tax revenues for the city government.

Strengths of the initiative

One thing that worked especially well was the process of consensus building that I coordinated, during 1997-9 on behalf of the DC Control Board, and from 1999 until 2005 on behalf of the Action 29 Corporation. We defined the strategy as a "win-win" situation in which either everyone wins or everyone loses, rather than as a "zero-sum" approach with some winners and other losers. We succeeded in delivering benefits for the low- and moderate-income African-American families and neighbourhoods surrounding NoMa, including construction of the new McKinley Technology High School and new community-oriented shopping centres anchored by Giant Foods, Safeway, Harris-Teeter, CVS, Home Depot, Starbucks, Target, and other major retailers. We also provided a portion of the Metropolitan Branch hiking and biking trail along with a substantial degree of sustainable high-density pedestrian-friendly transit-oriented development for environmental advocates. We provided city-owned land adjacent to the New York Avenue Metro Station for the new national headquarters building of the US Treasury Department's Bureau of Alcohol, Tobacco, and Firearms (ATF), in exchange for obtaining USD 25 million from the US government to help finance the station's construction. We diversified the area economy by mixing and expanding media and technology companies, including recruiting XM Satellite Radio to place its national headquarters with 800 jobs in an abandoned printing factory across from the new Metro station. We generated significant tax revenue for the DC government. Indeed, we have already succeeded far beyond the original two goals articulated in 1998 of generating or attracting 5 000 new jobs and promoting at least USD 1 billion in new public and private investment and development.

The most important strength was that we clearly understood the private market conditions and therefore designed a targeted initiative that could actually succeed in the current business environment utilising the key assets that we identified as our competitive advantage. We managed to convince all of the major stakeholders of the validity of our strategy by including them in the process and empowering each of them to engage in supportive and complementary actions on behalf of their own self-interest as well as the larger public good. If we had not correctly understood the market conditions and tailored the strategy to maximise the potential of the key economic assets of NoMa, we would never have been able to attract the USD 75 million investment and 800 good-paying professional media jobs from XM Satellite Radio, convincing them to move into the city from the suburbs, successfully countering the general trend of corporations moving from the city to the suburbs in metropolitan Washington.

Clearly the most innovative aspect of the NoMa initiative was leveraging private financing by convincing the large commercial property owners and developers to contribute USD 25 million in cash and USD 10 million in land for construction of the New York Avenue Metro Station. Without that private sector commitment in December 1998, we would never have been able to obtain the DC government or US government funds that enable the entire project to be built. And without the New York Avenue Metro Station, much of the NoMa economic development initiative would not have succeeded.

Weaknesses of the initiative

I have already described how we turned the two biggest weaknesses, city government fiscal insolvency and lack of support and involvement by the key community stakeholders, into strengths. Therefore, the longer-term view is that the main weakness was our commitment to ensure substantial economic and social benefits for the existing African-American residents in the surrounding neighbourhoods. Despite many efforts to provide improved education and workforce development, community improvement and small business development, affordable housing and homeownership, and other services, amenities, and economic opportunities, the net result of the NoMa initiative will be a significant upgrading of the income level in the area through the attraction of a higher-income and more ethnically diverse living and working population. This will result in the unfortunate displacement of some portion of the existing lower income population, many of whom will not ultimately benefit for the increased transit, business, and job opportunities or from the new development of stores and services. The cautionary tale here is that the key stakeholders must be more proactive in planning for a successful transition and be more deeply committed to patiently adhering to that part of the plan and devoting sufficient resources to its implementation for at least two decades.

The other key weakness was unfortunate timing due to larger cyclical global economic and financial forces completely beyond our control. But for such timing, we would probably have attracted and retained a much greater degree of private investment by telecommunications companies in technology-based facilities in NoMa. In 1999 and 2000 we experienced rapid growth of new development by such global corporations, but this was followed beginning in 2001 by a slowing down and even subsequent withdrawal by several bankrupt firms. The long-run economic success of NoMa is now well ensured, including a major presence of media companies. The rest of the developable land and buildings will be occupied by administrative offices related to government, law, lobbying, and property development, by hospitality, culture, and entertainment facilities, and by upscale multi-family housing. In short, both Action 26 and Action 29 can be pronounced as resounding successes overall, despite our ultimate failure to attract and retain a major cluster of telecommunications companies.

Potential transferability

The first lesson is that Wales and places similar to Wales can clearly identify their main competitive economic strengths based on their fundamental assets of people and place, and to design effective economic development strategies that emphasise and build on their key assets to grow businesses and jobs, both in general and particularly in targeted industry networks or clusters that most benefit from the availability and advantage of the major assets. In other words, any jurisdiction can take the same approach as NoMa and succeed to some extent, depending on the timing of overall private market conditions. Part of Wales success, however, will be based on very precisely analyzing the region's key economic assets such as transportation and infrastructure, education and workforce development, research and technology, culture and environment, and then designing a carefully targeted strategy to maximise the economic benefits of these key assets in order to grow industry clusters/networks that make the best use of such assets. It was our clear and sophisticated comprehension of NoMa's economic potential as well as its deficiencies that enabled us to beat out Fairfax County, Virginia and every other jurisdiction in metropolitan Washington in attracting the USD 75 million world headquarters and major national production studios of XM Satellite Radio, attracting 800 good-paying media jobs into the heart of NoMa, two blocks walk from the New York Avenue Metrorail Station.

The second lesson is that the best way to succeed is to proactively involve everyone, all public, private, and community stakeholders, in an open public process of formulating as well as implementing the economic strategy. The more people participate, the more they become invested in contributing to the success of the ideas and actions, and the more that they can see how they will be able to benefit from the results.

The third lesson is that leveraging the private sector can and does work. There is a good reason why NoMa won the 2006 Infrastructure Award from the National Council for Public-Private Partnerships. We clearly demonstrated that governments can accomplish a great deal more by mobilising both the financial and intellectual resources, as well as the political support, of the private sector in economic development initiatives. This was the hallmark of our success in NoMa, and Wales certainly can certainly do much better!

For further information

Dr. Marc A. Weiss
Chairman and CEO
Global Urban Development
1250 24th Street, NW, Suite 300
Washington, DC 20037
Tel: 1-202-554-5891
Fax: 1-866-854-2973
marcweiss@globalurban.org
www.globalurban.org

KANSENZONES ROTTERDAM INITIATIVE (THE NETHERLANDS)

Willem van Winden
European Institute for Comparative Urban Research, Erasmus University Rotterdam and HES School of Economics and Business, Amsterdam, The Netherlands.

Rationale for the initiative

Rotterdam (600 000 inhabitants) is the second largest city in the Netherlands and has the biggest port in Europe. The port and its related industries still dominate the local economy, although employment in the port has decreased in the last decades. The city has successfully combated its image as a dull, industrial, working class city, mainly by investing heavily in modern architecture, culture, events, and service industries.

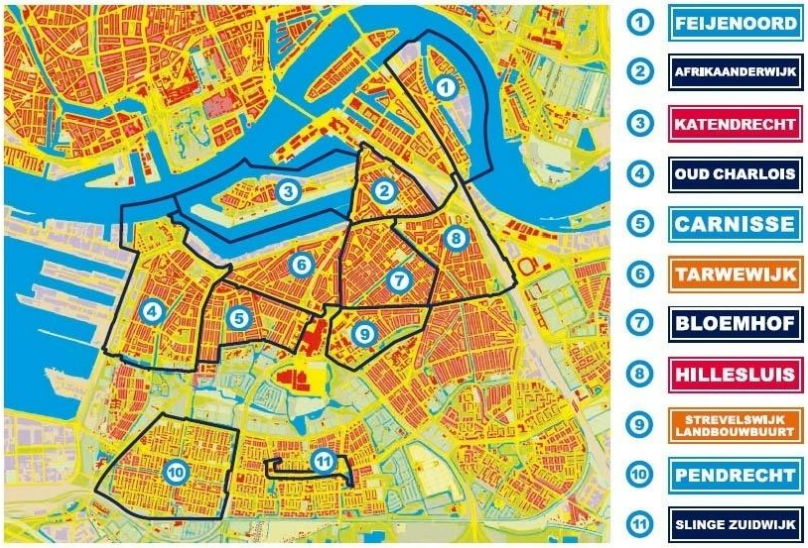
Problem to address

The economic success of the city is, however, unevenly spread. Some parts of the city are prospering and experiencing a process of gentrification, in particular the inner city, but other areas are still relatively deprived. The Southern part of the city can especially be described as a 'multi-problem area', characterised by a high percentage of people with poor or no education, (long-term) unemployment, low incomes, low purchasing power, high crime rates, a large percentage of poor immigrants, and dominated by social housing. There is high mobility in the area: every year, 25% of the population moves. In the last decade, the area has entered a downward spiral: violence increased, citizens of middle income fled to other neighbourhoods, poor immigrants moved in, drug-related problems increased. As a result of decreasing purchasing power and the poor economic outlook, many companies in the area moved or closed down. Some parts of the area gained a national reputation for being the worst neighbourhoods in The Netherlands.

In 2005, in response to these problems, the municipality of Rotterdam took action to 'Save the South'. One of the initiatives was to create Kansenzones ('opportunity zone') in the Southern part of the city. The area covers 11 'boroughs', and has a total population of some 106 000 people (see Figure I.3). There are 2 400 firms in the area, that employ 22 000 people. The number of jobseekers is 11 000.

The project aims to strengthen the business climate for entrepreneurs by giving them incentives to invest in the area. Entrepreneurs/businesses in the zone are eligible for an investment premium of 50%. More investment and entrepreneurship is expected to help to improve the quality of life and work, and bring new hope to the area. The project is financed by the State: the national government considers it as a key pilot project that may be transferred to problem areas in other Dutch cities.

Figure I.3 The Kansenzone-area



Policy context

The Kansenzones project does not work in isolation: it is part of a larger regeneration package, aimed to reverse the downward spiral in this part of Rotterdam. This package (financed by the City of Rotterdam) includes a number of initiatives:

- The 'young starters' project, that aims to promote entrepreneurship amongst young people (born after 1975). They receive support in creating a business plan and are given advice from banks and experts. They are eligible for an investment premium of 50%, and are provided with cheap office space in specific premises for start-ups. This also applies if the firm moves into the Kanzenzones from another location.

- A project aimed to improve the qualifications of young people. This project addresses the large problem of school dropouts: it offers training opportunities for drop-outs, including on-the-job training. This project was created to ensure that the new jobs created by the Kansenzone initiative will be filled by local people.

- A wage cost subsidy. Employers in the area can apply for a 50% wage subsidy if they hire someone who is obtaining benefits (with a maximum subsidy of EUR 10 000). They can also reclaim 50% of the eventual training costs of the new employee.

- Large investments (mainly by the local government) in safety, the quality of public buildings, and infrastructure. The city has allocated a budget of EUR 24m for this purpose. Among other things, the local economic development agency has transformed a grain silo into a workplace for start-ups.

- Commitments of local housing corporations to improve the availability of housing and invest in social projects. This is part of a national 'new deal for communities' type of arrangement, initiated by the new central-left national government.

In the remainder of this paper, we will focus on the Kansenzones initiative, *i.e.* the investment subsidy for entrepreneurs. But it is important to realise that this measure is part of a full package that aims to revitalise the local economy in this area of the city.

Description of initiative

Objective

The project Kansenzones (2005 to 2008) aims to promote entrepreneurship in the area and to boost economic development in order to improve the quality of housing, quality of life and quality of work in the area. More specifically, the initiative intends to stop or prevent the closure of businesses and promote investment by current and new firms. The underlying idea is that entrepreneurship and local investment has a positive influence on a number of other local parameters.

Activities

The programme works as follows. Entrepreneurs/businesses in the zones are eligible for an investment premium of 50%. The programme is aimed at (future) entrepreneurs and owners of commercial real estate. Owners of houses (adjacent to businesses, or on top of them) are also eligible for an investment premium. Entrepreneurs or owners of commercial real estate can obtain an investment premium of 50%, with a maximum of EUR 100 000, for investment in durable equipment (excluding cars) or for the construction/renovation of commercial real estate. The minimum investment is EUR 4 000.

Delivery arrangements

The following key criteria apply for applicants:

- The company should be reliable and credit worthy
- The owner should remain the owner for at least five years; otherwise, he/she has to pay (part of) the premium back.
- The company should operate at that location for at least three years; otherwise, part of the premium should be paid back.
- If a company has received other forms of government support in the three years preceding the subsidy request, this amount will be deducted from the eventual subsidy.

The Kansenzone project is run by a project organisation that is part of the Rotterdam Economic Development Corporation, OBR (Ontwikkelingsbedrijf Rotterdam). The OBR operates independently, and is 100% owned by the Municipality of Rotterdam.

Budget

The budget for the Kansenzone-initiative is €24 million, carried by the State. The City of Rotterdam has invested another €24 million in a larger regeneration scheme for the area.

Impact of the initiative and evaluation evidence

The project is carefully monitored. In 2007, Ernst & Young[1] conducted a thorough mid-term review in which it evaluated the initiatives along four dimensions: effectiveness, efficiency, integrality, and customer satisfaction (of the companies that used the programme). Furthermore, the review measures a number of output indicators (number and size of subsidy requests) and outcome indicators (number of entrepreneurs in the areas, number of business closures and openings, number of start-ups, employment in the area). The review is based on analyses of quantitative information (number of firm start-ups, closures, turnover, number and type of subsidy applications etc.), as well as in-depth interviews with stakeholders including the project management, the municipality, and a number of entrepreneurs. A steering group (consisting of experts and officials from five national ministries) has supervised the evaluation process. In this section, we will briefly summarise the findings of this midterm review.

Outputs

During the first two years of the initiative (2005-2007), 630 firms applied for a subsidy: this is 25% of the total number of firms in the area. Companies sent in subsidy requests for investments worth a total of EUR 46m. Many requests were rejected, and during the mid-term evaluation, many requests were still under consideration. By the time of the review (April 2007), around 200 companies had obtained an investment premium. In total, they applied for investments worth EUR 12.7m. The total subsidy delivered amounted to EUR 6m. This was far more than initially expected by the policy makers.

The average subsidy amounts to EUR 30 000, but there is a large variation in the size of the investments made by the entrepreneurs.

Who gets the subsidy? The review shows that most subsidy requests (60%) come from entrepreneurs who rent their premises. Another 20% of the applicants are entrepreneurs who also own their shop or workplace, and 20% are owners of real estate. In terms of economic sectors, 30% of the investment premium went to retailers; other big receivers were business services, other services, and catering companies. Many of the applications (40%) were from immigrants. One quarter (50 in total) of the subsidised firms were start-up entrepreneurs, and they obtained a subsidy of EUR 34 000 on average.

The data and figures presented above refer to the situation of April 2004. More recent data (end of August 2007) show a rapid increase in the number of applications for the investment premium: see Table I.9. By August 2007, the investments for which firms had submitted subsidy requests had increased to EUR 55m.

Table I.9: Output indicators

	August 2007	April 2007
Total number of applications	852	631
Accepted applications	247	203
Dismissed applications	75	n.a
In the pipeline	368	n.a.

Outcomes

What were the outcomes of the programme? Table I.10 summarises some of the measured outcomes, comparing the situation before the project started (2004) with the situation two years after

(2007) the project's initiation. The table shows that since the beginning of the project, the number of firms in the area has increased, but in this respect, the Kansenzone area follows the trend of Rotterdam. More remarkably, the number of firms closing down or leaving the neighbourhood has decreased substantially, also in comparison with the Rotterdam average. This may be a sign of the increased trust of entrepreneurs in the area, but it is too early to draw hard conclusions about the causal relationship.

Table I.10: Outcome indicators

Indicator	Before project start (2004-5)	Mid-term review (2007-4)
Number of entrepreneurs	2 404	2 413
Number of new entrepreneurs (start-ups and movers)[2]	456	520
Number of firms that left or closed down their business[3]	582	472
Net growth of number of entrepreneurs	-117	48

Effectiveness

To assess the effectiveness, the review focuses on the following questions: to what extent does the programme contribute to more and better entrepreneurship in the area; to what extent does the programme contribute to the quality of life in the area; to what extent has the programme led to the creation of new firms; how has the area developed compared to similar areas in the Netherlands; how many jobs have been created as a result of the programme; what other effects can be observed?

- Impact on entrepreneurship. As already shown, the number of entrepreneurs has increased. There are no signs, however, of an improved quality of entrepreneurship. Investments in the area have increased. There are very few cases of entrepreneurs that have moved into the area from elsewhere in order to benefit from the subsidy opportunities.

- Impact on quality of life. The impact of extra investment goes beyond the creation of employment. Small-scale entrepreneurship contributes to the liveliness of the area, and this is highly regarded by the inhabitants. Furthermore, some of the subsidies supported investments in amenities that are directly relevant to inhabitants. Examples are firms in the health care sector, retail, and catering. Some quality of life improvements can be observed in the area, but it is not easy to attribute them to the Kansenzone initiative. There are some positive indications, however: for instance, several of the subsidised investments concerned improvements of the exterior of buildings and shops.

- Impact on employment and unemployment. There has been an increase in employment in the area, also compared to other boroughs in Rotterdam. But the full effect on employment will probably become visible later. The effect on unemployment is small: It is estimated that 65 jobs were created, and people that live outside the area fill most new vacancies.

- Development of the area compared to other deprived neighbourhoods. There are no clear indications that the areas have outperformed other deprived neighbourhoods. Much depends on the types of indicator used, and there are rather big differences between the 11 boroughs of the Kansenzone area.

- The programme sends a positive signal to entrepreneurs: they consider it as a sign of commitment and partnership of the government, and this increases their trust in the area.

The relatively limited impact on employment should be seen in its proper context: the primary aim of the Kansenzones project was not to create new jobs but rather to improve the quality of life in the area. Nevertheless, additional instruments are deployed to increase employment, as the local government realises that raising employment is the key to improving life in these neighbourhoods. Therefore, the Kansenzone programme is complemented by additional measures, such as wage subsidies, start-up support, and a variety of training schemes (see section 1).

Efficiency (cost of outputs and outcomes)

How do the costs of the initiative relate to the outputs and outcomes? First of all, based on the information from the review, the costs (in terms of subsidy) per new job are rather high. Again, it should be taken into account that there is a time lapse between new investments and job creation, and that job creation is not the primary objective.

Furthermore, the operational costs to run the programme also proved to be rather high. In the first year of the project, they amounted to 70% of the total amount of awarded investment premiums. This figure includes the rather high preparation costs of the programme. In the second year, the figure dropped to 30%, and a further reduction is expected as the process of analyzing and assessing the subsidy requests is being improved. There are several reasons that explain the relatively high costs of running the project. First, the application procedure is rather complicated, and strong efforts are devoted by the project organisation to help the entrepreneurs in this respect. Furthermore, the number of applications was very high, and a relatively high number of subsidy requests are rejected.

A relevant question is whether the initiative has boosted local investment, or whether the entrepreneurs would have invested anyway. Ernst&Young estimate that 25% of the investment would not have taken place if the programme had not been in place. Another 40% of the investments would have been postponed.

In addition to the evaluations presented above, the review also analysed the project's integrality and customer satisfaction. It concludes that the value added by the integrative approach in the area is substantial. As the problems in the area are multidimensional, the project would not work without the large number of parallel initiatives that are taken (as described in section 1).

Overall, the entrepreneurs are satisfied with the project, and many of them have applied for subsidies. They also see the initiative as a sign that the local government cares about the future of their neighbourhood. However, entrepreneurs complain about the length of the application procedure. In some cases it took several months before a decision was made. The main reason was the large number of applications, and the fact that many entrepreneurs were slow (or even failed) to submit the necessary documentation.

Strengths of the initiative

What worked well?

The marketing of the initiative was a success. Intensive campaigning through local media and face-to-face contacts helped to ensure that the project was very well known from the outset.

The outcome of the project, until now, has been somewhat disappointing. Nevertheless, the project has generated new investment in the area, and there are some signs that it helped to restore confidence among entrepreneurs and citizens. More importantly, the exodus of entrepreneurs has come to an end. Also, the provision of national funding was a catalyst to develop an integrative approach for

the area (keeping in mind that Kansenzones is but one of the many parallel initiatives that has been taken to regenerate the area). The instrument of investment subsidies has several advantages compared to fiscal measures (such as general tax reductions in the area). First, rewarding and promoting investments send a strong signal to local entrepreneurs, and it has a 'physical effect'. Furthermore, unlike generic fiscal measures, the instrument does not reward every entrepreneur equally, but only those that invest in the area.

What was innovative?

The project is innovative, in the sense that it considers entrepreneurship not only as an engine for job creation but also as a key factor for quality of life and the sense of well-being in an area. Entrepreneurs are seen as the most vital and active members of local communities. Their attitude has a big impact on the 'mood' of the entire neighbourhood. If they can be tempted to invest, this sends a strong signal to the rest of the community that the area has a future.

Reasons underlying success

A key reason underlying success is the large size of the area in which the instrument is applied (over 100 000 people) and its contiguity: this prohibits perverse 'border effects', *i.e.* the relocation of businesses just for subsidy reasons.

The project also has several strong points in terms of the policy and the integration with other policy measures. The instrument is part of an integrated approach that tackles physical degradation, skills shortages, safety etc. Also, there is a strong commitment from a variety of stakeholders: the State (it funds the programme), local banks, local councils and community organisations are involved.

Finally, the project has a thorough review and monitoring plan: a monitoring plan has been a part of the initiative from the beginning. This enables policy makers to make informed decisions concerning continuation and/or alterations of the project. Also, it helps the State to decide whether or not to transfer the initiative to other cities.

Weaknesses of the initiative

Obstacles or problems that emerged during the design or the implementation of the initiative

The project resulted in high operational costs. The minimum investment eligible for subsidy amounted to only EUR 4 000. This evoked a large number of subsidy applications, put high pressure on the project organisation, and raised the costs of running the project. The project organisation had difficulties in assessing all the applications in a timely and proper manner. As a result, the entrepreneurs complained about the complexity of the subsidy request process, and the slow decision making process (in many cases, however, entrepreneurs did not submit all the required files and information).

Furthermore, the employment effects of the initiative are not yet encouraging. What is worse, most of the new vacancies are filled by people who do not live in the zones. This suggests that the marginal returns of investing in entrepreneurship are low compared to investments in training of local people.

The instrument can be criticised on several other grounds. First of all, the instrument creates market distortions. Giving rather high investment subsidies of up to 50% may evoke 'bad' investment projects (that would never have taken place without the subsidy) and reward poor entrepreneurship.

Second, one may argue that promoting investment is a rather roundabout way of improving a run-down area. If the problems are poor quality of life and poor skills, then tackling these issues directly is likely to yield higher returns. Third, it is still unclear whether the instrument really does contribute to the quality of life in the area. Fourth, area-based economic development policy (whatever the form) can be criticised: some studies suggest that the main beneficiaries of such policies are the owners of real estate, as increased economic activity in an area leads to higher real estate prices[4].

Quality of response taken to obstacles or problems

The main problem was how to deal with the unexpectedly high number of applications. The organisation was unable to process the applications in a timely manner. This problem was solved by hiring more staff and also by using the expertise of professionals of the Chamber of Commerce in the evaluation process. This resulted in faster feedback to entrepreneurs who had submitted incomplete investment plans.

The project management team has concluded that it is too early to give a sound assessment of the effectiveness and efficiency of the project. No major revisions of the project are planned. Rotterdam has asked the Ministry of Economic Affairs to extend the programme by 1 year, and to increase the geographical area somewhat.

Potential transferability

Lessons for Wales and similar places

Like Rotterdam, localities in Wales (and in many other places in the world) have substantial pockets of deprivation: areas with a high and sustained concentration of multiple problems. The Welsh government, in close co-operation with local communities, might consider whether the Rotterdam Kansenzone approach could be applied as an additional measure to regenerate such neighbourhoods.

Promoting entrepreneurship is increasingly recognised as a tool for economic regeneration. Often, policies focus on start-ups. The Rotterdam Kansenzone-approach also focuses on promoting investments by existing local entrepreneurs as part of a large regeneration package. Entrepreneurs are not only considered as economic entities, but also as a factor that determines quality of life in the area. This notion is useful for other regions, including Wales.

In Rotterdam, the co-operation between national and local government helped to develop a truly integrated approach and to raise substantial additional funding. National government considered the project as an interesting pilot and was willing to put money into it. It considered the project as a 'bottom-up' policy innovation with strong local backing. The involvement of national government also contributed to the quality of the policy, first because more 'outsiders' were involved in its set-up (providing fresh views on the local situation and possible interventions), and second because the national government put rather high demands on the proper evaluation of the project. However, it is not easy to transfer this type of fruitful local-national co-operation to another institutional context.

Some lessons can be learnt, though. First, the truly integrative approach as adopted by Rotterdam has important merits. Investment premiums will not work if other measures are not in place, such as (on-the-job) training schemes, anti school dropout projects and physical regeneration programmes. In other words, they should be part of an integrated approach. Second, this case study suggests that the instrument will work best in a relatively large and contiguous area. This prevents perverse behaviour (*i.e.* companies moving into the zone just for subsidy reasons). Furthermore, the instrument could be

improved by introducing a 'quality of life' impact check: this would imply that only investments with a substantial 'quality of life' effect would be eligible for a subsidy.

For further information

Dr. Willem van Winden
Professor Local Knowledge Economy
HES Amsterdam
Tel. + 31 6 41427013
vwinden@few.eur.nl

Mr Andre de Groot
Project leader
Beusrplein 37, 3rd floor
3001 DA Rotterdam
Tel. +31 102052870
a.degroot@obrrotterdam.nl
www.obrrotterdam.nl

ENDNOTES

1. Ersnt&Young and Regioplan (2007), Midterm Review Kansenzones Rotterdam, September.

2. Based on mutations between April 2003 - May 2004, and June 2005 - July 2006 respectively

3. Idem

4. For an overview, see T.J. Bartik (2005), "Solving the problems of economic development incentives" Growth and Change, vol. 36, No. 2 (Spring 2005), pp. 139-166

DOWNTOWN OSHAWA REGENERATION PROJECT (CANADA)

Glenn R. Miller
Iain D. C. Myrans
Brent A. Gilmour
*Canadian Urban Institute, Toronto, Ontario, Canada.*A. Rationale for the initiative

Rationale for the initiative

The focus of this paper is a successful revitalisation programme initiated by the Canadian city of Oshawa that has managed to halt economic decline in the city's downtown area to begin the process of attracting new jobs and investment. The core of the programme is a series of bold steps taken by the municipal council to redevelop contaminated vacant sites in the downtown core known as brownfields.

The Canadian Urban Institute defines brownfields as "abandoned, vacant, derelict or underutilised commercial or industrial property where past actions have resulted in actual or perceived contamination and where there is an active potential for redevelopment." This definition is adapted from work carried out by the National Roundtable on the Environment and Economy (Canada). The Oshawa initiative described in this paper is closely linked with a larger brownfield initiative undertaken at the provincial scale that dates back to 1999.

Oshawa, a medium-sized city located immediately east of Toronto, is one of a number of Ontario municipalities that began to take an interest in opportunities related to brownfield redevelopment in the late 1990s. Prompted by evidence of municipal efforts to redevelop brownfield sites, the province responded by developing legislation and policy designed to support and expand upon these efforts.

Figure I.4 Aerial photograph of downtown Oshawa

The many vacant sites in Oshawa's downtown core reflect its industrial past

Problems to address

In addition to responsibilities for urban planning, the Ontario Ministry of Municipal Affairs and Housing is tasked with supporting municipal initiatives for local economic development. It became apparent that as much as 10-15% of all available land in many of the province's older cities were brownfields (Ontario, Brownfields Showcase, 2000). The common denominator was that, over a period of years, industry in the downtowns closed, moved to the periphery, or moved out of the region all together leaving behind a series of deteriorating urban cores. In discussions with municipal representatives, the province learned that the presence of contaminants or in some cases, the perception that land is contaminated, represented a barrier to redevelopment.

From the provincial perspective, removal of this barrier represented an opportunity to address a number of related problems. These included:

- Loss of economic development potential (including jobs, associated income and sales taxes, and municipal property taxes);
- The existence of contaminated soil conditions representing an environmental hazard as well as a potential liability for past, present, or prospective owners of the site;
- Encouraging the redevelopment of well located sites that were already serviced to help reduce urban sprawl as well as the associated cost of investing in new infrastructure for "greenfield" sites;
- Deteriorating neighbourhoods containing derelict brownfield sites that could create a downward spiral, undermining the economic vitality of the municipality as a whole;
- Vacant or abandoned sites contributing little to the municipal tax base. Redevelopment has clear benefits from this perspective.

Policy Context

When the City of Oshawa began to investigate the potential to redevelop brownfield sites in its downtown core in the late 1990s, there were only three financial tools that municipalities had available to them in order to stimulate redevelopment of brownfields. These tools were:

- Municipal loans and grants (core area grants, façade improvement loans, building renovation loans).
- Waiving of municipal fees (development applications, building permits)
- Tax Increment Equivalency Financing.

Around this time, the Ontario Ministry of the Environment began to formulate regulations for site remediation. This had the unfortunate effect of introducing uncertainties into the development approvals process at precisely the time that municipalities were beginning to show an interest in bringing brownfield sites back into productive use. In response, the Regional Planning Commissioners of Ontario convened a series of meetings to work out a protocol for addressing concerns voiced by individual municipalities. Recognising that leadership was required, the Ministry of Municipal Affairs and Housing assembled a team of policy planners to develop comprehensive responses that would

satisfy economic as well as environmental concerns, providing an integrated approach to planning, financing, and dealing with the liability issues associated with brownfield sites.

As a result, it is now widely acknowledged that 1999 was a pivotal year for brownfields redevelopment in Ontario. This was also the year that the Canadian Urban Institute began to organise an annual conference focused on brownfield redevelopment that has since grown into a networking and learning event of national significance.

A year later, the province convened a Brownfield Advisory Panel to conduct a review of brownfield-related policy, as well as to develop a set of best practice policies from around the world. This panel also was asked to develop a set of policy change recommendations. It concluded that:

- The Provincial Policy Statement, a formal government policy document that outlines matters of "provincial interest" in the realm of urban planning, be amended to explicitly identify brownfield remediation and redevelopment as a "provincial interest." This would provide the province with the opportunity to intervene in disputes being addressed by the Ontario Municipal Board.

- Brownfield redevelopment is best accomplished within the framework of 'an enhanced Community Improvement Plan (CIP) process.

  – This was seen as beneficial because CIPs provide a planning framework that was already understood by planning departments and was community-based, requiring the establishment of a community vision for redevelopment.

  – The Panel believed that the ability to offer incentive programmes and grants within CIP areas on the basis of "public good" and the advancement of the goals and vision was the best way to deliver to municipalities new financial incentive tools.

- TIEG provisions be expanded, allowing municipalities to retain the education property tax increment as well as the municipal property tax increment for use in financing and grants.

- The province's Planning Act be amended to allow municipalities to provide Tax Increment Equivalency Grants or loans directly to the party incurring remediation costs.

In 2000, the Government of Ontario also issued the first 'Brownfields Showcase,' a document highlighting a number of brownfield initiatives in the province. Many Ontario municipalities, including Belleville, Cobourg, Cornwall, Dundas, Sault Ste. Marie, Toronto, and Wingham were featured for their brownfield and downtown economic development projects. Of these, the most significant project was located in Toronto. The Toronto project was a CAD 300M investment in a former distillery site that was in the process of being converted into a tourism and boutique shopping area with 1 000 neighbouring condominiums. The strong Toronto housing market coupled with a developer who was willing to assume the risks associated with the development of a contaminated site with unique and salvageable buildings were major reasons for the success of the project. A second significant project was in Dundas where 400 residential units and 100 retirement units, plus a community centre, were in construction on the site of a former steel foundry. The project predicted an additional CAD 2.1 million to be generated in the local economy through increased population and new spending.

In 2001 the provincial government launched its Smart Growth Secretariat (housed within the Ministry of Municipal Affairs and Housing) which was designed to create "a strong economy, strong

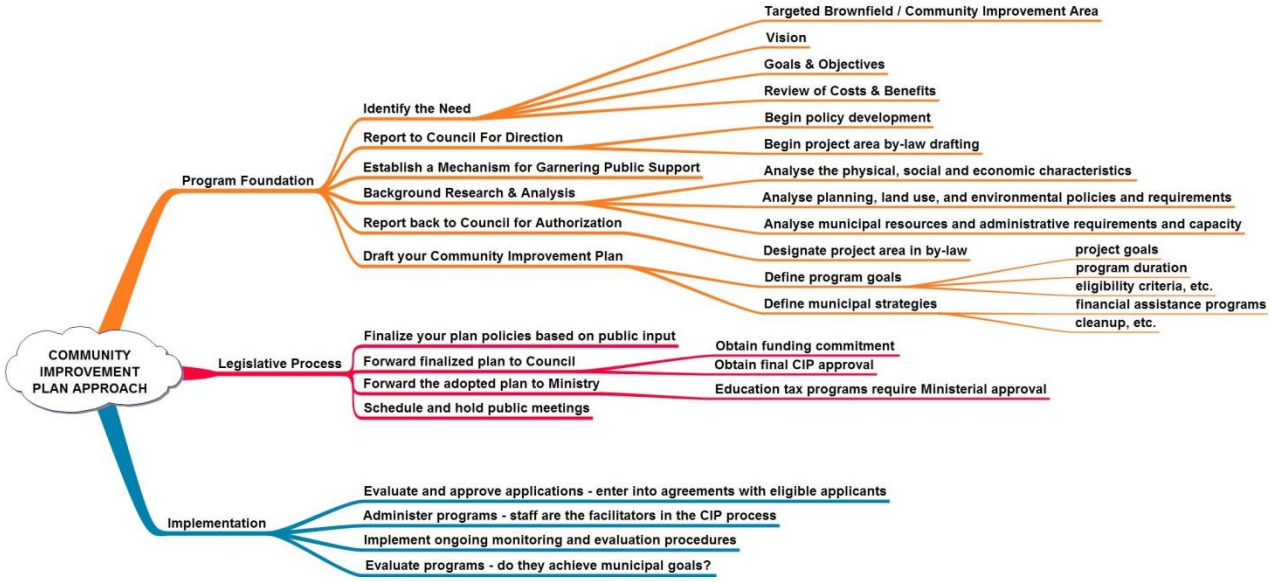
communities, and a clean, healthy environment" (Ontario Smart Growth Secretariat, 2001). As part of its Smart Growth initiative the Province of Ontario passed the **Brownfields Statute Law Amendment Act**, in 2001, implementing many of the recommendations of the Review Panel:

- CIPs could now be created where age, dilapidation or unsuitability of buildings exist, or for economic development and environmental reasons.
- This omnibus act promulgated amendments to the Municipal Act, permitting municipal property tax assistance for eligible properties.
- With Ministerial approval, an application to exempt specific brownfield sites from the province's education property tax could be made, offering relief for up to three years (known as the "Brownfield Tax Incentive Program (BFTIP)." At its creation the government was keeping a CAD 5M reserve to fund this programme.
- Municipalities could initiate tax sales of properties in arrears. With failed tax sales the municipality could take ownership of the property.
- A series of legislative changes clarifying rules for off-site contaminant liability.

The Ministry of Municipal Affairs and Housing (MAH) notes that by 2003 Ontario municipalities had gone from trying to fix brownfields because they were "deteriorating and dangerous" to "promoting them as valuable and viable economic development tools and profitable development sites" (MMAH, 2003).

The second Brownfield Showcase was published by MAH in 2004 and presented the new Community Improvement approach to brownfield sites (see Figure I.5).

Figure I.5 The 2001 Community Improvement Plan Approach



The government continued to amend and introduce new legislation to support brownfield redevelopment and complementary initiatives. In 2005, the new provincial government (wisely deciding to build on the momentum established by the previous government) amended the Provincial

Policy Statement to explicitly include references to brownfield redevelopment – making it part of both the Province's intensification and economic development policies. The Minister of Municipal Affairs and Housing also established the post of Brownfields Coordinator, where the incumbant reports directly to the minister, and is responsible for coordinating government initiatives with respect to brownfields.

- Over the next months the province produced a series of new documents including the *CIP Planning Handbook, Guide to Phase Two Environmental Assessment* (required for access to the BFTIP), and a Risk Assessment Procedures document.

- In 2007, the province budgeted funds specifically for direct investment in brownfields:
  - Hamilton CAD 3M
  - Cornwall CAD 1M
  - Brantford CAD 5M
  - St. Catharines CAD 1M
  - University of Ottawa CAD 1M.

Support for these measures came in part from the success of individual municipalities, including the City of Oshawa, in terms of proceeding with brownfield redevelopment on their own initiative, and later, with support in the form of provincial legislation. As well, the province relied on a study commissioned by the National Roundtable on the Environment and the Economy in which it is indicated that, in Canada and the United States, for every dollar invested in brownfields the multiplier effects would lead to an average of CAD 3.80 being contributed to the local economy.

Description of the initiative

The chilling effect of brownfields on economic investment is well known. The challenge inherent in redevelopment of an area as large as downtown Oshawa is to create favourable conditions that meet the diverse expectations of multiple land owners and investors, and which appeal to a broad spectrum of potential users and customers. The turning point for Oshawa was when the Council acknowledged that its attempts to "hit a home run" by attracting a single large land use was not working. Instead, the City decided to focus on the clean up and sale of municipal brownfield sites to create new "positive impact uses," and ultimately a formal brownfield strategy, that would create an appropriate environment for economic investment.

The City proceeded with two parallel but complementary streams of activity: for the sake of simplicity, each is described separately but a timeline has been provided to allow the reader to follow the progress of these initiatives.

Objectives

The City of Oshawa, located some 60 km east of Toronto, is a fast-growing urban centre with a population of just over 150 000, which accounts for about 50 percent of the Census Metropolitan Area. After many decades as an independent industrial hub, the city is being increasingly drawn into the economic orbit of Greater Toronto, and was recently designated as an Urban Growth centre by the Province of Ontario, part of an ambitious plan to remake the urban structure of the region. Oshawa's population is projected to grow by nearly 90 000 in the next 25 years. Employment is expected to double, to just over 100 000 jobs.

Figure I.6 Designated CIPs in Southern Ontario

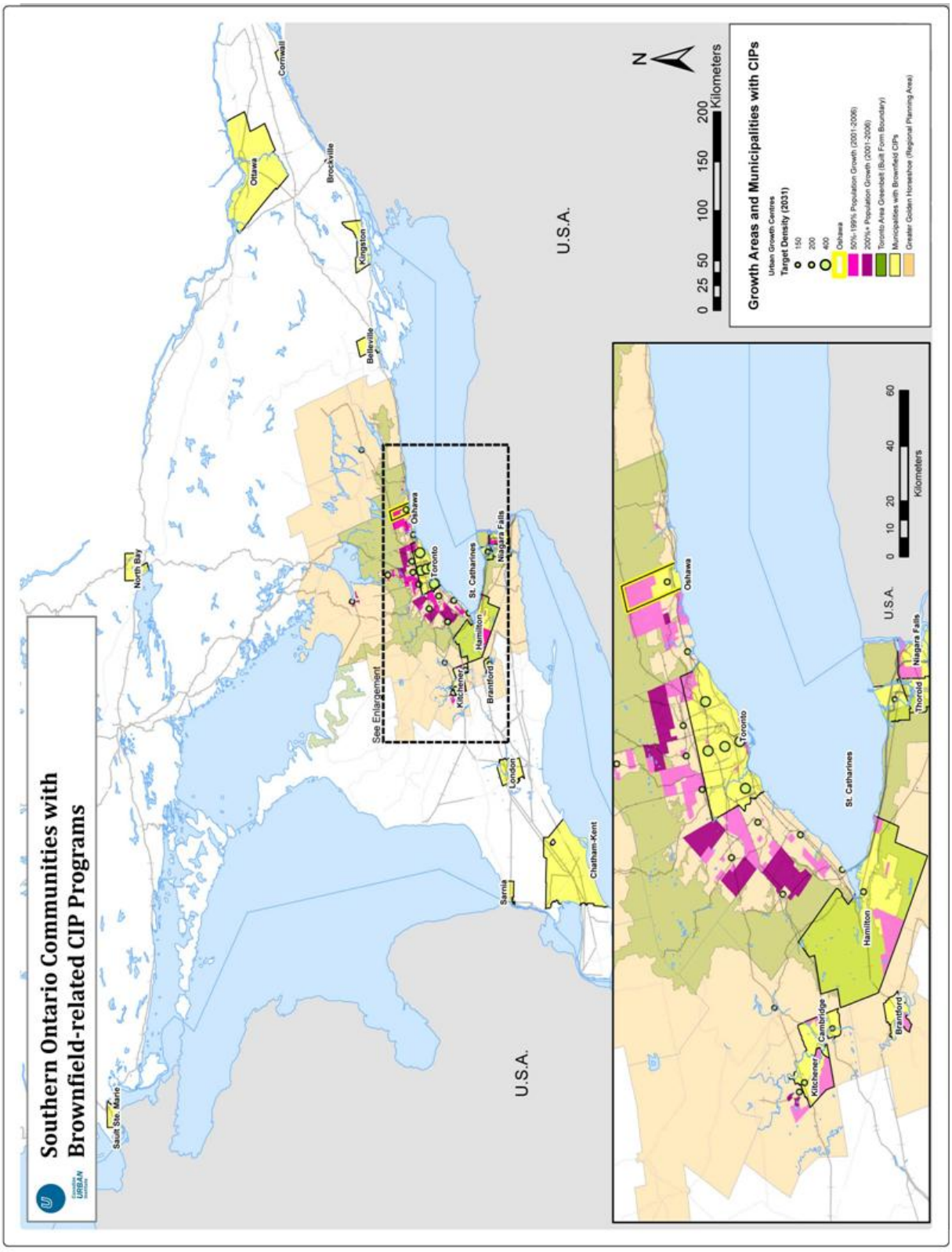
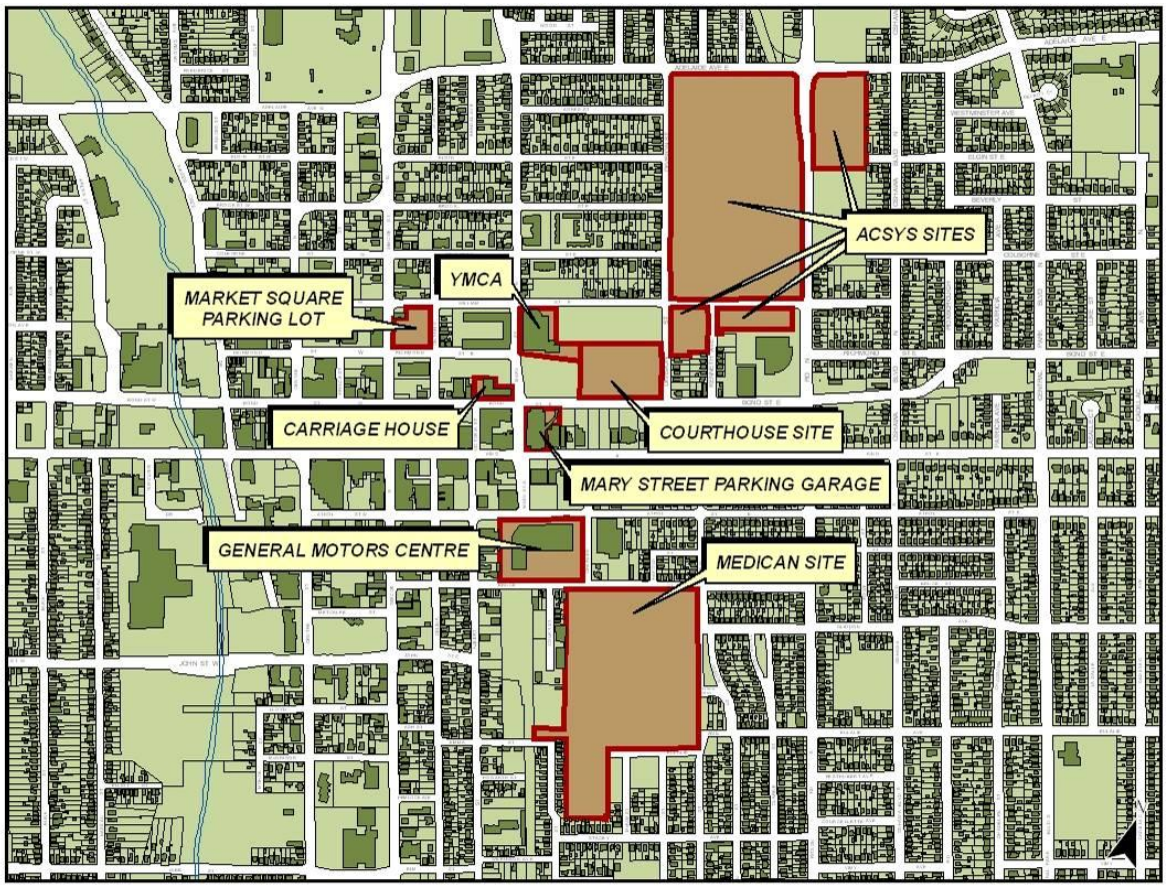


Figure I.7 Major Brownfield Sites in Downtown Oshawa
Brownfield (former industrial sites) are indicated in brown with red outlines.



The principal challenge facing Oshawa is to recapture the traditional role of downtown as a hub for employment, residential growth, shopping and entertainment. Although the City has more than 50 000 jobs at present, only about 6 000 are located in the downtown (also referred to as the central business district). This is a far cry from post-war conditions when downtown was the focal point for all that was important in the economic life of the city.

The experience of the City of Oshawa as a medium-sized city suffering disinvestment in its central business district following the departure of traditional industries from the core is by no means unique. The decline began when a large shopping centre was built on the edge of town in the mid-1950s, draining the downtown of much of its vitality. Like many urban centres in North America, Oshawa also depended for many years on the strong performance of a single large employer, General Motors. When the automotive giant decided to relocate its Canadian headquarters to the southern end of the municipality in the mid-1980s, this exacerbated the plight of Oshawa's downtown, which had been experiencing a loss of manufacturing jobs for some years.

By the end of the 1980s, there were 12 ha of vacant brownfield sites in the CBD, possessing an extensive range of contaminants that reflected the city's industrial past – tanneries, foundries, canning, food processing, printing plants and auto manufacturing. The mood of the community, stimulated by a critical media, was almost as toxic as the soils of downtown. Even though the City was doing well in many other respects, the economic decline of the downtown was a source of embarrassment and concern.

Ultimately, with the departure of General Motors from the downtown, along with closures of other industrial plants, the once active downtown lost its economic momentum. It became evident that the financial costs and risks associated with cleaning-up contaminated sites were beyond the capabilities of the private sector. This realisation led to the Council's decision to proceed with an aggressive programme of municipally-led initiatives. Initially, the City of Oshawa began a piecemeal programme to redevelop its core but, within a few years, public concern regarding the City's decline marked a turning point.

Activities

The first undertaking was the controversial decision in 1990 to borrow CAD 18 million to build an eight storey, 750 stall municipal parking garage on a City-owned brownfield site at a time when there was little evidence of demand for such a facility. The move was especially risky because provincial legislation regulating clean up procedures was still in flux. There was, however, a precedent for such bold action, dating back to when the predecessor to what was to become the General Motors headquarters burned down in 1899: after the plant relocated to another community, Oshawa Council lured it back by rebuilding the factory at its own expense. So, almost a century later, in a bold gesture that demonstrated its confidence in the future, the City constructed the garage as "essential infrastructure," even spending extra funds on the design of the garage to ensure that it would complement future development. The garage opened in 1991.

The next step in 1992 was to finalise a land exchange with General Motors. The auto company acquired a large greenfield site to expand their factory in south Oshawa while the City took control of a 3.6 ha site downtown that had been the location of the GM headquarters and central plant. Although the downtown site was heavily contaminated, carrying out the costly clean up (in excess of CAD 500 000 per ha) set the stage for three subsequent "chess moves" that were eventually to pay dividends in terms of attracting investment, jobs and renewed economic activity to the downtown.

The first move was persuading the YMCA to create a CAD 14M facility downtown instead of in a greenfield community. Designed by one of Canada's leading architects, the facility opened in 1999, visibly generating activity 15 hours a day, seven days a week, adding much needed energy to downtown streets. Emboldened by the success of this project, the City then remediated and sold an adjacent brownfield site to a company willing to invest in a high-end retirement residence, reducing the City's outstanding debt by an estimated CAD 1M. This project, completed in 2001, immediately stimulated demand for local services and began to influence the thinking of realtors about the potential of downtown to attract residential development.

In 2004, the City began the process for its largest investment in downtown to date; the creation of a major entertainment and sports complex. Following a rigorous site selection process, the City used its powers of expropriation to acquire 10 contiguous parcels, requiring the demolition of eight buildings and the removal of large amounts of heavy metals and hydrocarbons. An economic feasibility report commissioned by the City confirmed that a 18 000 m^2 facility would generate net economic benefits from approximately 140 events a year. The anchor use is a hockey franchise, augmented with concerts, trade shows and other sports events. Development of the arena was estimated to generate the equivalent of 400 jobs over an 18th month construction period. Annual spin off revenue generated by the facility's restaurant was estimated at CAD 1.4M annually. The authors of the study estimated that the City would benefit from a significant share of up to CAD 20M annually in terms of future demand for food, culture and entertainment services. The size of the City's investment generated significant public debate. Overcoming many objections, the City subsequently borrowed to cover the CAD 45M development. The arena itself cost approximately CAD 35M, with the remainder being the clean up and other "soft" development costs. The facility opened to much fanfare in 2006.

Concurrent with this activity, the City also began to lobby the provincial government to locate a regional Courthouse facility on lands acquired from General Motors. The contamination was so severe that two separate clean-up efforts were required over a period of 10 years. Two key factors resulted in the City being awarded the facility in 2005. The first was that emerging provincial policy favoured the principle of redeveloping brownfield sites in preference to greenfield locations. The second factor that allowed Oshawa to triumph over competing municipalities was the City's extraordinary financial commitment and demonstrated track record in terms of stimulating downtown revival. The clinching factor was that the City was able to contribute a clean site to the project. In its contaminant-free state, the 2.4 ha site is valued at more than CAD 5M, having originally had a negative value when acquired by the City. As well, through a Community Strategic Plan adopted early in 2005, the City adopted a policy of promoting downtown over suburban sites, formally confirming what could be construed as ad hoc strategies followed over the preceding 15 years. Construction of the Courthouse will be completed in 2009. A value-for-money assessment conducted by the Province of Ontario identified the courthouse as a CAD 377M investment in Oshawa's downtown. The 45 000 m^2 facility is designed as a "green" building; it will house nearly 600 employees, and when fully operational, will attract 1 800 visitors each day, bringing CAD 7.18M in spending to the downtown per annum. Law firms and other support uses have already started to lease space in the downtown in readiness for the opening.

In addition to municipally initiated projects, a number of influential private sector investments are under way. Taking advantage of federal grants for rental housing and an interest free loan of CAD 175 000 from the City, a former hotel heritage site was redeveloped with 32 apartments and ground floor retail.

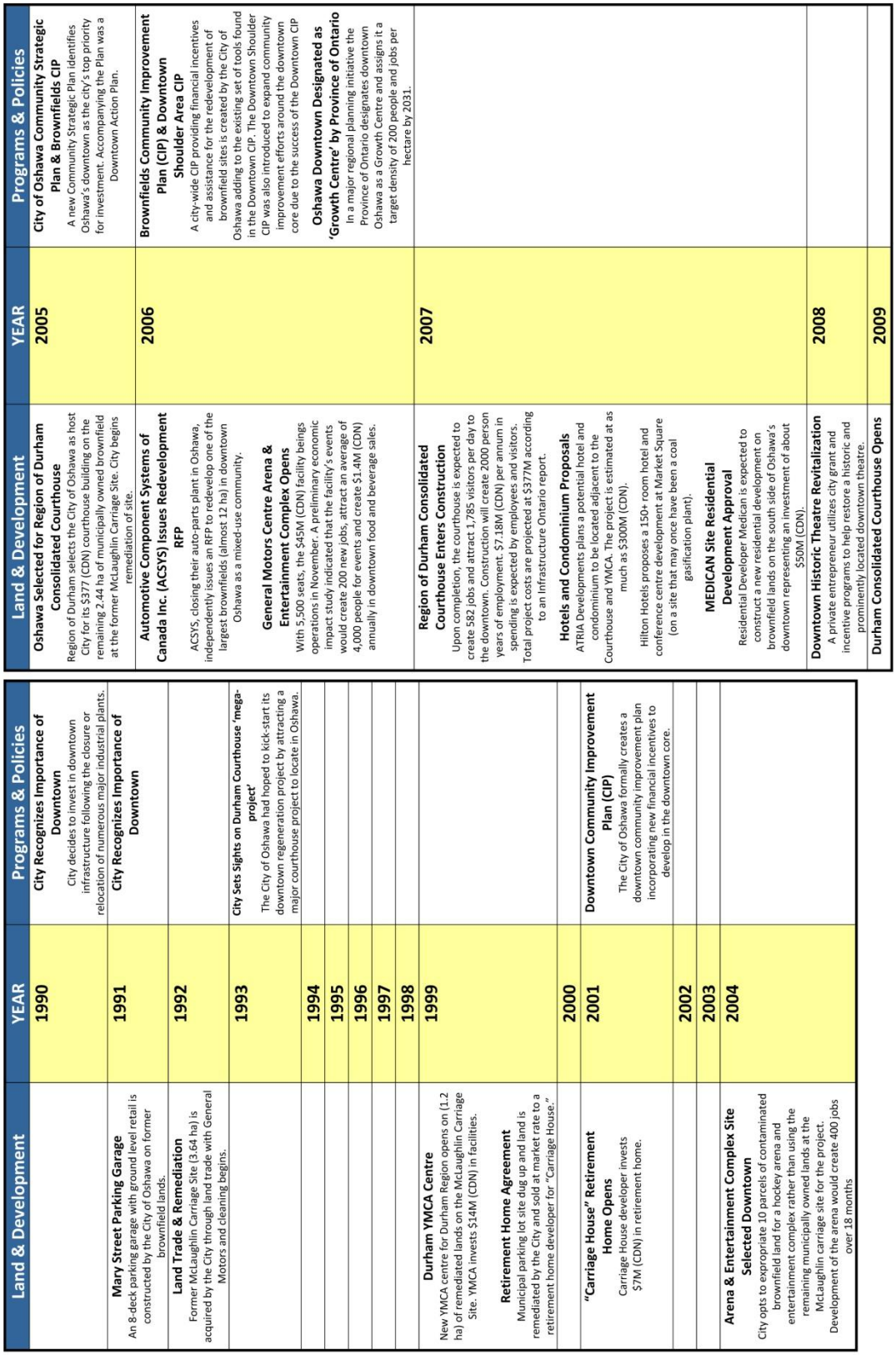
A heritage theatre building is being refurbished and is expected to host a minimum of 100 events a year. Several condominium projects are planned or in process. The 121-unit Parkwood project was just completed, and plans are proceeding to redevelop two of the largest remaining brownfield sites in downtown – the Medican site and the ACSYS site (formerly a parts supplier to GM). An announcement is also expected in the near future regarding a 180-room luxury hotel and conference centre, to be built on a City-owned brownfield site.

Part of the City's brownfield strategy involves appropriate staffing for downtown and brownfield redevelopment projects. Today, the City of Oshawa has two staff positions that are predominantly focused on site remediation and redevelopment: the City's Community Improvement and Housing Coordinator, and a Business Development Manager. There are an additional three-to-five city staff who are regularly involved in brownfield redevelopment projects including the Planning Commissioner.

Delivery Arrangements

The City's revitalisation programme benefited from two streams of effort. In addition to municipal investments in acquiring, remediating and selling brownfield sites (sites used as joint venture collateral are deemed to be sales), the City also created a number of incentive programmes that benefited the downtown. The accompanying time line has been provided to allow the reader to follow the interconnections.

Figure I.8 Timeline of Downtown Brownfield Redevelopment in Oshawa, Ontario, Canada



In 2001, the City took advantage of changes introduced to provincial planning legislation that allowed municipalities to create Community Improvement Plans (CIPs) with financial incentive programmes. The downtown CIP (*Central Business District Renaissance Community Improvement Plan)* built on earlier provincial programmes focused on beautification initiatives, but was fundamentally different in its application in that the plan committed the City to providing grants and loans to the private sector to carry out façade and other improvements to existing private buildings and property. Programmes available in the *downtown CIP provide for:*

- *Increased assessment grants*, which help landowners cope with higher assessment rates that result from increased levels of economic activity in downtown.

- *Building Permit Grant*s, which provide developers with grants equivalent to the cost of building permits to make it more attractive to invest in downtown.

- The City has invested more than CAD 1.7M in its *Façade Improvement Grant* programme, a programme initially created simply to make buildings more attractive, but which has now become a strategic tool to attract new investment into the downtown.

Although not a part of the downtown CIP, the City's Parkland Dedication and Development Charges by-laws also exempt the downtown, providing an incentive for developers to select a downtown site over a suburban one.

In 2005, at the same time as the Community Strategic Plan was adopted, the City created a CIP specifically for brownfield redevelopment. Although this applied to the entire City, the initial take-up has been in the downtown. Opportunities include:

- *Study Grant Program*: This pays up to 50 percent or CAD 10 000 of land development studies.

- *Tax Cancellation Program*: this provides the land-owner or developer with a revenue stream to finance remediation.

- *Redevelopment Grant*: this grant is made to the developer in expectation that the development will generate future tax revenues that otherwise would not have been available to the City. The amount is calculated on a 10-year basis. The approach is modelled on tax increment financing introduced some years ago in the United States.

The City of Oshawa's Brownfield CIP program is funded from future tax revenues. Annual expenditures are, in part, a response to private sector interest. Nevertheless, the municipality provides for complimentary expenditures, such as façade improvement grants, out of its capital budget as part of its Downtown Community Improvement Plan program. It is estimated that, by year end (2008), it will have issued more than CAD 3.5M in grants and loans as part of the above programmes.

Budget

It is difficult to provide a definitive budget for the City's initiative because the strategy and implementation changed over time and involved multiple overlapping projects. The estimated annual human resource cost for direct involvement in the initiative over a 10 year period is approximately CAD 150 000 (2006 value ony), comprising one full time staff person and part-time contributions from a number of others. This estimate accounts for the fact that even the full time staff person has

other responsibilities. The capital expenses – and it should be noted that the administrative, legal and consulting costs associated with these expenses are not addressed – are as follows:

- CAD 18M parking garage. This facility provides cash flow to the City but these revenues are placed into general revenues rather than allocated to recover costs.

- CAD 1.75M cleanup of former GM plant site. This is the estimated cost for the first phase only. Subsequent costs are not available because of on-going litigation.

- CAD 45M GM Centre (CAD 35M for arena, 10M for site remediation and soft costs). The revenues from contracts and attendance at the venue are directed towards repaying the debentures.

- CAD 3.5M spent by year-end on façade and building restoration grants. This amount reflects the City's total outlay from the beginning of the programme to the end of fiscal 2008.

Impact of the initiative and evaluation of evidence

At the time of writing, the City has not undertaken a formal review of outputs, outcomes, effectiveness and efficiency of the revitalisation initiatives carried out over the past 15 years. The first attempt to summarise the success of the programme was a presentation to the 2007 Canadian Brownfields conference organised by the Canadian Urban Institute. Since then the City has had numerous requests to make similar presentations to other communities in Canada that face similar challenges.

In interviews with City officials, it is evident that the focus has been on achieving practical results "on the ground." City Hall is located downtown and executive offices have a view over many of the sites described in this paper. City staff acknowledges that the methods employed by the City of Oshawa now need to be formally documented.

Outputs

The following is a summary of outputs resulting from Oshawa's regeneration initiative:

- 1 500 new jobs in the downtown directly attributed to brownfield redevelopment (as of January 2008).

- While no formal review has been undertaken by the City to-date, the City's Downtown Development Officer reports that 16 new businesses have opened since the entertainment and sports complex began operation in 2006.

- CAD 377M courthouse facility under construction, which is expected to bring 1 800 visitors per day during the working week. This is estimated to yield CAD 7.1M in economic spin-off annually.

- It is estimated that expenditures resulting from food and other entertainment spending in the downtown (linked to the GM Centre) will total CAD 20M per year.

- Total private sector expenditure on brownfield sites over the past decade has resulted in approximately CAD 43M. Another CAD 50M in private development is approved. In addition, a further CAD 300M in private development is proposed.

- The City estimates that in total, some CAD 773.5M in value has been created. This is approximately a 10:1 ratio. Note that these estimates have not been audited.

Outcomes

Although the downtown has experienced business closures and relocations for several decades, the City is encouraged by the fact that 16 new businesses opened over the past few years. More important, but obviously harder to quantify, is the fact that the spate of closures appears to have ceased. The downtown is slowly becoming an attractive place to do business.

A key indicator, as noted by the Commissioner of Planning, is that City staff now has to work with landowners to address concerns over increases in property tax assessment. (Ontario property taxes are valued at market price annually).

The City has now reached a stage where it is prepared to acknowledge publicly its accomplishments. This began with a presentation at the Canadian Urban Institute annual brownfields conference in Autumn 2007. At the same event, the GM Centre received the top award as part of the CUI Brownie Awards program, which acknowledges leadership and innovation in brownfields redevelopment. Since that time, City staff has been in demand from municipalities across Canada to recount the Oshawa experience and provide inspiration to others. This has in turn led the City to conclude that a formal documentation of the programme needs to be undertaken.

Effectiveness

Most important, however, is that the City is no longer required to take the initiative with respect to clean up of brownfield sites. The market in downtown Oshawa has recovered to the extent that the costs of clean up can now be accommodated in pro forma estimates of redevelopment. This does not mean that the CIP grant and incentive programmes can be abandoned. There is still a demand for these municipal incentives. The key point is that the private sector is now willing to integrate the risk for clean up into its development process.

Efficiency

The Oshawa experience is not being promoted as a model of efficiency. Rather, it reflects a culture of practicality that exists within a municipality. One has to take a very long term view in order to conclude that the municipal risk and reward remains in balance. The Oshawa programme has had many up-front expenses (infrastructure, land remediation, land purchases). Throughout most of the programme's history City expenses in the downtown have outweighed revenues. However, the long-term goal has been to recreate a vibrant downtown with living and employment opportunities. This process will increase the assessment rates in the downtown which will lead to increased property tax revenues.

Strengths of the initiative

There are now more than 20 CIPs in Ontario, suggesting that the economic challenges facing Oshawa are commonplace. Interviews with provincial staff also suggest that Oshawa's experience is unique in terms of the level of re-investment. They also acknowledge that only a very limited number of municipalities is prepared to borrow money to invest in brownfield redevelopment at the scale seen in Oshawa (the cities of Hamilton, London and Brantford have also invested in clean up of municipally owned brownfield sites). While this makes the Oshawa approach somewhat unique in the Ontario context, Oshawa's approach is particularly innovative because of its large scale and the City's

willingness to expropriate contaminated lands for redevelopment in order to strategically reserve municipally owned parcels in more appropriate locations for other desired land uses.

An article published in the professional journal of the Association of Ontario Land Economists (AOLE) identified a number of factors, based on current implementation models that can be considered to be prerequisites for a successful brownfield redevelopment project. The author suggests that brownfield programmes are typically facilitative and rely on the private sector to absorb clean up costs and even liability. Therefore, it is also suggested that municipalities should find a way to help assist in the redevelopment process. However, it is also noted that governments typically help only to address back-end costs through tax abatement programmes when most of the risk in brownfield redevelopment is at the front-end. Taking a holistic approach to infrastructure investment is something that is also cited as often being overlooked. In these respects, Oshawa has excelled.

What worked well

Oshawa differs from the typical Ontario model in that it has taken on the responsibility for clean-up at most sites and has itself been the developer in some projects. The City has also invested in infrastructure (such as the Mary Street Garage) to make more intense land uses possible (such as the courthouse). Over the long term, the Oshawa model is designed to create a critical mass of redevelopment that will produce a larger assessment base, increased tax revenues, an improved public realm, and new employment opportunities. With the momentum created by applying this model, the City hopes to spark long-term private sector investment.

Although City staff emphasise that revitalisation of the downtown remains a work in progress, there is a strong sense that a critical mass of new investment has been achieved. This belief is reflected in the City's decision to prepare a new CIP to address the "shoulder" sites adjacent to downtown, suggesting that there is a ripple effect occurring. City staff have also demonstrated that it is important to be flexible in dealings with the private sector to successfully redevelop brownfield sites. Recognising that "time is money" encourages a high level of cooperation among City departments to allow private sector projects to be fast tracked once the decision to proceed has been taken.

What was innovative

It is worth noting that the City decided to tackle brownfield redevelopment fully half a decade before the Province of Ontario initiated specific legislation to overcome barriers to brownfield redevelopment. The City nevertheless deserves credit for seizing opportunities when they arose: our interviews with provincial staff suggest that incentive programmes such as CIPs carried out under the auspices of provincial legislation are most effective when complemented by direct investment by the municipality. The ability to identify "positive impact uses" as part of a reinvestment strategy is a message that is now being transmitted to other municipalities. For example, the Canadian Urban Institute is working with the Federation of Canadian Municipalities (FCM) to help the organisation redesign its revolving loan programme (Municipal Green Funds).

Reasons for underlying success

In a forthcoming book by urban researcher and author Storm Cunningham[1] the author identifies three rules and three processes that brownfield projects ought to follow to maximise their success. Cunningham argues that while brownfield projects can be successful even if only a limited number of the rules and processes are followed, brownfield projects are more likely to become outstanding achievements when aspects of all the rules and procedures are executed in the course of project delivery. The Oshawa model does just this.

- **Rule 1** - *Economic development decisions should be primarily focused on renewing assets that already exist such as: brownfields, historic buildings, or infrastructure, and should not be based on building anew. Municipalities, developers and other stakeholders must change their thinking to Redevelopment not Development, Replenishment, not Depletion*. This rule can be referred to as *the 'De' to 'Re' rule*. As industrial plants began closing or moving to other areas of the City and region, Oshawa realised that it had to find a way to preserve the remaining downtown businesses and, in the long-term, re-direct growth to its core and away from the greenfield development on the fringe. As demonstrated, this required the remediation and redevelopment of vacant unused land left behind by industry. While the City developed some new assets, the idea was to invest in "positive-impact use" city-building structures and infrastructure that would enable, in the long term, more intense uses on the adjacent vacant lands as redevelopment occurred. Municipal development projects (like the parking garage and the sports and entertainment complex) were all placed on municipally remediated land. Other projects and programmes (façade improvement, etc.) have been focused on restoring heritage buildings, such as the old downtown theatre that has been closed for many years, or a formerly abandoned federal office building that is now being reused as a residential condominium.

- **Rule 2** – *When cities go about renewing assets they should integrate their economic, social, and environmental planning processes together*. This rule can be referred to as *Integration.* Regeneration projects in Oshawa were designed to solve social and economic problems in the downtown while remediating contaminated land that left untouched would have long-term environmental impacts. With the hollowing out of the city's core as a result of the closing industrial plants, few employment opportunities existed. Downtown stores and offices were falling into disrepair, or were closing leading to further unemployment. Redevelopment plans have been focused on bringing new jobs to the downtown and on providing entertainment activities to 'positively impact' both the economic and social conditions through restoration or site remediation and redevelopment. In doing this, the hope has been to attract residential (re)development to the downtown -- something that now appears to be happening. Moreover, the Oshawa plan is also integrated with the larger regional-scale planning initiatives of the province which encourage downtown intensification, infill, and brownfield redevelopment.

- **Rule 3** – *Effectively engaging citizens, businesses, and not-for-profits as well as academics is an important economic development activity*. This rule can be referred to as *Engagement.* The formalisation of the Oshawa regeneration project stemmed from a community strategic planning initiative undertaken by the City in which residents identified downtown revitalisation as their top priority. The City has worked with downtown business owners through its local Business Improvement Area (BIA) association.

- **Process 1 –** *Economic development doesn't stem from a vacuum – successful communities are those with a shared vision for the future*. Conducting a *proper visioning* process with community and business buy-in is essential. The formalisation of a downtown regeneration programme stemmed from the community strategic plan and the city's vision that was developed out of that process.

- **Process 2 –** *Culturing*, or *the creation of a culture of renewal by making formal changes to municipal (and regional/provincial) policy and regulations and by creating an environment that creates a culture of revitalisation and which is redevelopment friendly*. Oshawa realised that attracting private investment to the downtown would be difficult, or impossible when its

employment opportunities and residential population were dwindling. Initially, the City served as the developer of several projects (such as the parking garage, the GM Centre Arena), but is now stepping back from this role and into a partnering and facilitating role as redevelopment momentum has been created. The City continues to take on the responsibility for the remediation of contaminated land in most cases. This has demonstrated to developers that the City is doing its best to create a culture supportive of private investment and redevelopment. As identified above, There has now been CAD 43M invested by the private sector in brownfield redevelopment to-date and as much as CAD 300M in private development is proposed. This commitment to culturing may also be responsible for the acquisition of the substantial provincial courthouse project, the Durham Consolidated Courthouse.

- ***Process 3*** – *Cities must create the ability to produce exceptional public-private and public-public partnerships.* This process can be referred to as *Partnerships.* The City has been partnering with developers (public and private) since the early years of this initiative -- the YMCA was the first in this role. Essentially, for that project the City paid for substantial site cleanup and gave the land at virtually no cost to the YMCA on which they built a CAD 14M facility. The City has also partnered on similar projects with a seniors residence and a CAD 377M provincial courthouse. Other development projects and partnerships appear likely in the future with a hotel project and large residential condominium development. Partnerships have also been forged with knowledgeable consultants who have been able to guide the city through the redevelopment process.

Oshawa's approach to investing in community strategic planning, positive impact land uses, partnerships, and culturing has built the framework for a successful economic development model and downtown regeneration. While political will is obviously required to meet each rule and follow each process, we believe it deserves special recognition. It is the combination of political will and long-term commitment and belief on the part of City planning and economic development staff that has contributed to the ultimate reasons for success. By working closely with a few trusted consultants, City staff has acquired considerable knowledge, expertise and capacity - and thus the confidence - to recommend specific actions to their Council. For their part, city councillors have shown a willingness to shoulder capital investment risks at a scale that may well be unique relative to the size of the City.

Weaknesses of the initiative

As this section demonstrates, the weaknesses of the Oshawa brownfields regeneration initiative can be categorised into three groups: problems with stakeholder interests, problems with the legislative and municipal framework, and municipal strategy. Each are examined in more detail in the subsections below.

Obstacles or problems

One of the most difficult challenges overcome by the City of Oshawa was to maintain its course in the face of significant opposition from vested interests and stakeholders who did not appreciate the value of the process being followed by the City.

Oshawa is one of eight lower-tier municipalities, and one of two cities, within the Regional Municipality of Durham. As a lower-tier jurisdiction Oshawa is limited in the tax exemptions it can offer. The City can exempt brownfield projects from its portion of the property tax but cannot offer relief from the regional portion of the property tax without the regional council's approval. Furthermore, under section 106 of the Ontario Municipal Act, regional municipalities are not

permitted to offer site-specific grants or relief from levies or charges.[2] Instead, they may offer grants for brownfield redevelopment but those grants are issued on a first-come, first-served basis. This means that regional grants cannot be *specifically* directed to downtown Oshawa, so development projects elsewhere in the region may consume the bulk of the available regional grants and loans. This means that once the regional council has given its approval for the grant (or loan), with a specific beneficiary in mind, another party can gain access to the grant if an application is made before the intended participant. Oshawa points out that a number of other cities in Ontario do not have upper-tier regional governments and are, therefore, able to avoid these problems and offer larger exemptions. Finally, education taxes are also levied through the property tax system but are provincially regulated and require ministerial approval for exemption in all jurisdictions.

A glance at the timeline accompanying this paper indicates that the large financial bets placed by the City were not necessarily always in step with formal Council policy as reflected in officially sanctioned incentive programmes. A potential downside to this approach is that the impact of disagreement is borne by the Oshawa Council resulting in an unnecessary amount of acrimony.

Quality of taken responses

The City of Oshawa chose to acquire and assemble a number of brownfield lots through expropriation for facilities, such as the sports and entertainment complex, when landowners were unwilling to sell their properties. Expropriation was seen as necessary where the City believed that redeveloping specific brownfield sites would provide the largest 'positive impact use' and public benefit. As demonstrated above, facilities like the sports and entertainment complex have already helped to attract new business and development to the downtown.

Financial incentive programmes are regulated by the Province of Ontario. Ultimately, while the Region may be willing to provide grants for certain downtown redevelopment projects, the upper-tier is restricted in its funding capabilities by Provincial statute. Because of this situation, Oshawa has to work inside the current legislative framework. The City continues to strategise with the Region and discuss the problem with the province. In the short term there is no available response to this 'weakness'.

Finally, in 2001, Council formalised its first Community Improvement Plan indicating a new strategic approach to downtown redevelopment. This response was so effective that the City formalised additional strategies for brownfield sites city-wide and for redevelopment in the 'shoulder area' surrounding the City's core in 2005 and 2006 respectively.

Potential transferability

Transferability is possibly the hardest challenge in local economic development. City staff point out that the success of Oshawa has been achieved in the absence of significant natural assets such as a waterfront, mountain views or attractive climate. The image of Oshawa as a working class town dominated by the auto industry will always be present, but staff suggest that being prepared to commit to revitalisation over the long-term is something that any community is capable of doing.

What are the main lessons for Wales and places similar to Wales?

The following lessons are based on the experiences of staff and developers in the Oshawa context:

- Unexpected contaminants and/or tanks can be unearthed during cleanup at any time adding to cleanup cost while also creating delays. Having experienced consultants and lawyers who specialise in brownfield development will help to identity the risks well in advance.

- Investing in environmental risk assessments before committing to a development project is important.

- Even when the inner workings of City Council are divisive, leadership is defined by a willingness to make difficult decisions, even when the popular wisdom is opposed to such decisions.

- The ability to visualise an area such as the downtown as a "chess board" where different sites have different potential, then take action to move "value" around is priceless.

- Identifying and then defining the potential of "Positive Impact Uses" is a skill that can be learned through experience.

- Mega projects are not required – acknowledging that time horizons are longer than political terms of office is key to avoiding frustration and succumbing to the temptation to change direction.

- Investing in quality is worth it, even if there are premium costs initially.

- Brownfield redevelopment done well can be an effective economic regenerator that builds community pride (and wins awards). Awards have genuine benefit for raising the standards for all players.

Considerations for successful adoption in Wales and places similar to Wales

The Ontario model for brownfield redevelopment differs from UK applications. First, in the UK like in Ontario, initiatives are typically privately-led but developers are encouraged to conduct regeneration projects through a tax-credits-for-remediation programme. This programme provides the crediting of 150 percent of cleanup expenditures against taxable income. However, tax credit programmes do not address the front-end costs of developers and, while these types of programmes may work well in the majority of cases, urban centres in decline may not see regeneration occur. Where private redevelopment is not possible under this programme, 'quasi/non-governmental and independent public agencies' operate a separate set of programmes and have the power to acquire land and fund regeneration projects.[3]

Perhaps the single most significant lesson to be identified here is that it is essential to create the conditions necessary for success. In the case of Oshawa, this translated into being able to successfully compete against other municipalities for senior government investment. To achieve overnight success required an investment of nearly 15 years of effort.

For further information

Canadian Urban Institute
555 Richmond St. W., Suite 402
PO Box 612
Toronto ON M5V 3B1
Canada

Tel: 416-365-0816
Fax: 416-365-0650
www.canurb.com

Glenn R. Miller
Director
Education & Research
gmiller@canurb.com

Iain D.C. Myrans
Research Planner
Education & Research
imyrans@canurb.com

Brent Gilmour
Project Manager
Education & Research
bgilmour@canurb.com

ENDNOTES

1. S. Cunningham, 2008, Rewealth!, McGraw-Hill: forthcoming.

2. Ontairo Municipal Act, S. 106: Despite any Act, a municipality shall not assist directly or indirectly any manufacturing business or other industrial or commercial enterprises through the granting of bonuses for that purpose. The municipality shall not grant assistance by, giving or lending any property of the municipally including money; guaranteeing borrowing; leasing or selling any property of the municipality at below fair market value; or giving a total or partial exemption from any levy, charge or fee. The Planning Act provides for grants to be offered to the owners of property for the purposes of carrying out community improvement. Because community improvement planning is largely a lower- and single-tier municipal responsibility, upper-tier municipalities do not have the same ability to provide location-specific grants.

3. International economic development council (2005), International Brownfields Redevelopment, available online at: www.iedconline.org/Downloads/International_Brownfields_Summary.pdf

BUSINESS PRODUCTIVITY IMPROVEMENT

APPALACHIAN REGIONAL COMMISSION ENTREPRENEURSHIP INITIATIVE (USA)

Erik R. Pages
EntreWorks Consulting, USA

Rationale for the initiative

Problem to address

The origins of the Appalachian Regional Commission's Entrepreneurship Initiative (EI) were rooted in the challenge for states and communities throughout the region – a challenge that is shared across rural America – of how to foster the economic and cultural conditions that give birth to entrepreneurs, support innovation, and assist in the development and expansion of successful enterprises. These desired outcomes were, and still are, considered critical to Appalachia's future economic vitality.

While entrepreneurship has always been a feature of the American (and Appalachian) landscape, the history of explicit public support for regional entrepreneurial development is quite brief. Indeed, ARC's Entrepreneurship Initiative serves as one of the first such large-scale efforts, and the absolute first such effort investing Federal dollars in regional entrepreneurship strategies.

Policy context

At the time of the Entrepreneurship Initiative's unveiling in 1997, ARC's leadership had grown increasingly concerned about Appalachia's future vitality. The region was especially hard hit by cutbacks in declining sectors such as timber, textiles, tobacco, and was seeking new approaches to jump start development. Entrepreneurship-focused economic development strategies were viewed by ARC as '...a critical element in the establishment of self-sustaining communities that create jobs, build local wealth, and contribute broadly to economic and community development.'

By investing in the Entrepreneurship Initiative in 1997, the ARC was something of an 'early adopter.' Up to that stage, economic developers had focused almost exclusively on industrial recruitment as a core strategy. The industrial restructuring of the 1970s and the 1980s had stimulated some interest in business retention and technology development strategies, but entrepreneurial development strategies represented something of a 'new thing' in 1997.

Description of initiative

Objectives

When the EI was first begun in 1997, programme managers sought broadly to build more entrepreneurial economies across Appalachia. While ARC officials did not explicitly articulate these goals, their investments sought to serve three primary purposes:

- *More entrepreneurs* – To increase the number of entrepreneurs establishing businesses in Appalachia.

- *Stronger entrepreneurs* – To increase the survival rate of entrepreneurial ventures in Appalachia.

- *More high growth entrepreneurs* – To increase the proportion of entrepreneurial ventures that achieve rapid growth rates, thus providing jobs and wealth within and increasing the competitiveness of Appalachia.

These fundamental goals can be operationalised into six programmatic goals:

- *More entrepreneurs in the pipeline* – increasing the number of people, youth and adults, who are actively considering setting up their own businesses.

- *More entrepreneurs staying* – creating the conditions in which entrepreneurs wish to stay and grow their businesses in their community.

- *Better informed entrepreneurs* – providing entrepreneurs with the information and tools they need to establish and grow their businesses.

- *Better skilled entrepreneurs* – providing entrepreneurs with the technical and managerial skills they need to sustain and grow their businesses.

- *More job creating businesses* – providing the tools and resources to encourage entrepreneurs to expand and employ others.

- *Greater business productivity* – providing the tools and resources to enable entrepreneurs to operate efficient and competitive businesses.

The initiative sought to promote new business and job development, but also served as a tool to promote entrepreneurship as a local development model. Many communities in the region had previously relied exclusively on the recruitment of branch plants as a means to develop the local economy.

Activities/Delivery Arrangements

ARC invested in local programmes in five key areas: Entrepreneurship Education, Business Incubation, Capital Access, Technical Assistance & Training, and Networks/Sectors. Projects included a wide mix of policy interventions. Examples include targeted technical assistance to entrepreneurs, seeding of local equity funds, funding for local incubators, and cluster development investments. Local partners applied to ARC which then invested in programmes that also included matching state, local, or private funding. All programmes were structured to serve a city, county, or wider regional customer base.

The funded projects covered a wide variety of programme interventions. For example, in the field of business incubation, grants were primarily used to fund incubator feasibility studies and the development of new service offerings from existing incubator programmes. Because each individual grant was relatively small in size (averaging approximately USD 126 000 per project), few of the ARC-backed incubator projects used the investment for facility construction. In the area of capital access, ARC funds were frequently used to help capitalise new loan funds or microenterprise

programmes. For example, ARC dollars were used to help start-up Appalachian Community Enterprises which has now emerged as the largest microenterprise organisation in Georgia.

A number of ARC projects also supported local sector or business cluster strategies. For example, ARC investments were used in Southwest Virginia to create the Crooked Road Music Heritage Trail, a driving route that allows tourists to visit key locations in the history of American country music. The trail, and its attendant publicity, have helped spark the start-up of many new music venues, restaurants, crafts organisations, and other tourist-related businesses.

Budget

The EI was originally funded with USD 15 million over three years, with additional investments being provided beyond this original total. Through 2000, ARC had invested USD 17.6 million in 169 projects.[1] Through 2003, ARC had invested USD 31.4 million in 368 projects in thirteen states. An additional amount of approximately USD 11 million was invested in subsequent years through the EI or via the use of other ARC funds. Today, the EI no longer operates as an official stand-alone initiative, but ARC does continue to fund entrepreneurship-related projects through other programmes and its ongoing Asset-Based development initiative.

Impact of the initiative and evaluation evidence[2]

ARC's Entrepreneurship Initiative was unique because its investments were made in a diverse project portfolio, varying widely by geography, programme type (*i.e.* access to capital, technical assistance and training, incubators, entrepreneurship education, and sectors), type of lead institution, and identified output and outcome measures. As such, no single performance measurement or metric would adequately capture the impact of ARC entrepreneurship investments on the region.

Outputs/Outcomes

As identified through the final reports submitted to ARC, the EI led to the creation of at least 9 156 jobs, the retention of a further 3 022 jobs, the formation of 1 787 new businesses, and the provision of services to 8 242 businesses. The public cost per job created was USD 4 693, which compares favourably with other economic development efforts. ARC investments were made in 340 unique projects across the region at an average investment per state of USD 3.3 million and investment per capita of USD 1.82. The total ARC investment has leveraged an additional USD 72.8 million in private investment for those projects that have been closed, a figure that is projected to rise to USD 109.9 million when all projects in the portfolio have been completed.

Other metrics identified through in-depth investigation of outcomes from the sample of projects expand on this picture. In the 88 projects included in the sample, over 11 500 students and teachers participated in or received training in entrepreneurship education projects, 1 500 entrepreneurs took part in sector-focused activities and another 1 620 received training and technical assistance.

The outcomes data was obtained via the following procedures. Initial outcome data for each project were gathered from ARC files, and from budget documents provided by each grantee. Additional data on project performance were gathered through phone interviews with project directors – outcomes produced (both quantitative and qualitative), value attributed to the project, success in achieving objectives. Findings regarding broader capacity or policy impacts were gathered through phone interviews with both project and non-project stakeholders. Finally, additional information was developed through site visits in geographic areas where a large number of investments in diverse set of key programme areas had been made.

Effectiveness

Evaluations of the ARC's EI have also sought to capture some of the initiative's qualitative impacts as building a local 'enterprise culture' was an important goal of these investments. Interviews with key stakeholders indicate the EI investments did contribute to the generation of new thinking and approaches to local economic development. Interviewed participants noted that the programme helped raised the profile of entrepreneurship as a development strategy, and also helped facilitate networking and collaboration among practitioners. EI dollars represented 'but for' money in the region, providing start-up funding for innovative projects In other cases, EI dollars were used to leveraged additional resources that helped some projects achieve scale and impact.

On a broader scale, the impact of the EI on overall economic trends in Appalachia appears less pronounced. Over the period of the EI, trends in nonfarm proprietor and microenterprise employment in Appalachia showed increases in line with the nation as a whole, but trends in nonfarm proprietor income showed the region lagging behind the nation and slipping further behind by 2005. Data on the impact of entrepreneurship on the local economy showed that only 15 percent of Appalachian counties saw income increases associated with entrepreneurial activity that were higher than the national rate. It appears that entrepreneurship had greater impact in term of both employment and income in the southern tier of Appalachian states.

Efficiency

The EI's limited scale and scope (investing approximately USD 42 million in 13 states over ten years) makes it difficult to draw any causal connections between ARC investments and broader regional economic trends. However, it is clear that new firm formation has become an important driver of the Appalachian economy, and that entrepreneurship development must remain a key piece of regional economic development strategies.

Strengths of the initiative

What worked well?

When the ARC Entrepreneurship Initiative began in 1997, it was the first Federally-sponsored regional entrepreneurship programme in the US. Many of its innovations have now been implemented elsewhere in both the US and overseas. Thus, it is important to recognise that the EI played an important role in legitimising entrepreneurship as a core aspect of regional economic development strategies.

What was innovative?

Beyond ARC's role as an 'early adopter' of entrepreneurship strategies, the EI also utilised several other approaches that proved to be highly effective. First, the EI was heavily and appropriately focused on building strong regional partnerships that included national, regional and local partners. A related advantage resulted from ARC's efforts to introduce new players into the mix. Economic development in Appalachia had traditionally been led and dominated by government agencies and Federally-supported Economic Development Districts (EDDs). Through the EI, ARC invested in a wide range of new community-based organisations, such as youth clubs, faith-based organisations, microenterprise funds, and others. Many of these non-profits have subsequently assumed major local and regional leadership roles in promoting alternative economic development strategies. For example, in Virginia, Appalachian Sustainable Development has assumed a more prominent local economic development role. Prior to EI, ASD had worked to provide technical assistance to local farmers and

foresters. Today, the organisation manages a sustainable woods processing centre and markets its own line of sustainable wood products. In Tennessee, the Jubilee Project, a Methodist Mission Project, used ARC funds to expand its highly successful kitchen incubation programmes. It now sponsors two cooperatives that help market Appalachian crafts and food products.

Reasons underlying success

ARC's programme also benefited from its inherent flexibility. While the programme set broad programme guidelines to invest in key programme categories, it supported a widely diverse mix of initiatives, ranging from youth entrepreneurship education to the initial capitalisation of local equity funds. ARC also encouraged programme partners to alter programmes in the face of changing conditions. As a result, local partners were empowered to respond to local needs and circumstances in a flexible way.

Finally, ARC placed great emphasis on linking the EI to wider professional development opportunities for economic developers in this 13-state region. It funded numerous training opportunities and also sponsored several region-wide conferences on key topics, such as rural tourism and developing equity capital resources. ARC also created four national Advisory Committees of subject matter experts (*e.g.* on business incubation) who advised ARC and its partners on programme design and delivery.

Weaknesses of the initiative

Obstacles or problems that emerged

While the EI worked very well as a 'seed stage' investment in supporting entrepreneurship across Appalachia, its impact would have been more pronounced with several changes in the initiative.

- *Increase the overall amount of money allocated to the programme*. State and local programme managers were challenged by the relatively small pool of money allocated to the EI. State programme managers noted that it was difficult to figure out what to do with small amounts of money and it was hard to get state wide recognition for the EI as a result. Most of those interviewed recognised the political necessity for ARC to spread resources throughout the region but noted that this often resulted in too little money to achieve significant impacts.

- *Encourage a more holistic approach to entrepreneurship development.* ARC's programme design recognised that effective entrepreneurial development requires a holistic strategy that involves education, technical assistance, finance, and other support mechanisms. But, in practice, local investments provided support to one programme or one type of intervention.

- *Provide 'next level' investment for local initiatives spawned via the EI.* ARC was instrumental in seeding entrepreneurship activity in the region. However, in some cases, emerging successful programmes would benefit from 'next level' funding that would allow project leaders to move these initiatives to a level that has the potential for transformative impact.

- *Support more assessment of impact and follow up with projects.* Practitioners would have benefited from ongoing assessment of project outcomes and follow up from ARC to share lessons learned and support mid-course changes as needed. It was clear that a better metrics system, both in terms of defining relevant outcomes and collecting and reporting data, was needed.

Quality of response taken to obstacles or problems

During the course of ARC's EI, the agency and its partners did make major efforts to address the problems cited above. Some professional training was provided to programme partners, but no other systematic programme design changes were put into place. However, ARC has sought to introduce a more holistic economic development perspective in its ongoing 'Asset-Based Development' initiative. This initiative has not yet been subject to outside evaluation.

Potential transferability

A model similar to the ARC's Entrepreneurship Initiative could be transferred to Wales or to other regions considering new economic development approaches. While the ARC is a somewhat unique institution in America's federalist government structure, its programme design for the EI was quite flexible and responsive to local needs and circumstances.

What are the main lessons for Wales? - Consideration for successful adoption in Wales

If Wales sought to pursue a strategy based on the EI, several important considerations should be addressed during the programme design phase. These include:

- *Entrepreneurship development initiatives should include assessment of existing capacity and capacity building activities as part of project design.* The evaluation of ARC's EI investments highlighted the value of capacity building – visioning, leadership development (youth and adult), asset mapping, community engagement, and strategy development. Successful entrepreneurship development initiatives build on existing or create new capacity. Therefore, including capacity building as an integral part of entrepreneurship investments should result in stronger, more effective initiatives.

- *Entrepreneurship development investments should be made with a focus on the long term and sustainability.* The long term nature of entrepreneurship development requires a long term approach to investment. If a goal of these initiatives is to transform the culture of Appalachia, or another region, then a ten-year or longer time horizon is more appropriate than the more typical three-year grant cycle. However, it is also appropriate that project leaders articulate a plan for sustainability and show progress toward reaching that goal as a condition of long-term investment.

- *Entrepreneurship development initiatives should be market-driven and practice continuous improvement.* A key driver of entrepreneurship development should be customer needs, whether customers are defined as youth, entrepreneurs, communities, or others. Initiatives should be designed to include mechanisms for getting performance feedback and to allow for mid-course corrections and even redefinition of project goals, based on what project leaders are learning from their markets.

- *Emphasis should be placed on initiatives that demonstrate the ability to form regional partnerships and collaborations.* Successful local projects placed great emphasis on building collaborative networks for programme development and delivery. With capacity and resource limitations a reality for most organisations, the ability to form partnerships and share resources becomes paramount to success. These cross-organisational and cross-regional collaborations should be emphasised in the design of entrepreneurship initiatives, and effective partnerships should be rewarded as part of the investment process.

- *Build a robust and comprehensive performance measurement system.* Entrepreneurship development efforts have traditionally been assessed using classic metrics such as job creation or retention, leveraged investments, and the like. These traditional metrics paint an incomplete picture of the outcomes of entrepreneurship development investments, and should be replaced by an 'entrepreneurship development metrics portfolio.' This measurement system would be developed by grantees and their customers, *i.e.*, the entrepreneurs, and would be designed to provide project leaders with useful information that could be used to adapt programmes to changing circumstances and to report on project performance. The evaluation framework should be built into the programme from the beginning, and project leaders would be expected to sign off on that evaluation system as part of a grant agreement.

This portfolio approach would provide much more information on programme impacts and outcomes. Under current Federal rules, ARC grantees must provide data in several areas: Businesses Served, Jobs Created, Jobs Retained, Project Participants, and New Businesses Created. A portfolio approach would assess programmes according to two sets of metrics: a base set of metrics for all programmes, and a tailored set of metrics for each specific type of programme intervention. For example, an entrepreneurship training programme and a new business incubator might both be assessed according to traditional metrics of job creation or new business starts. Beyond these base measures, incubators might be assessed according to the number of firms graduated from the facility, the incubator's annual revenue, and a range of financial metrics for businesses served by the incubator. Training programmes might use a common customer satisfaction survey or other tools that assess whether participants gained new skills or knowledge, supplemented by follow-up surveys to collect financial performance metrics for business customers. Youth entrepreneurship education programmes might develop metrics related to measuring the entrepreneurial skills acquired by young people who participate in these programmes.

For further information

Appalachian Regional Commission
1666 Connecticut Avenue, NW
Suite 700
Washington, DC 20009-2068
USA
202-884-7700
www.arc.gov
www.arc.gov/entrepreneurship

ENDNOTES

1. For a review of EI projects, see Appalachian Regional Commission. Entrepreneurship Initiative: Programme Summary and Approved Projects. Washington, DC: ARC, 2003.

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'NO WRONG DOOR' MODEL (USA)

Erik R. Pages
EntreWorks Consulting, USA

Rationale for the initiative

For decades, US government agencies at the local, state and federal level have created a host of programmes and initiatives designed to help new and aspiring business owners to start and grow new businesses. A huge and diverse mix of business support organisations now exists across most regions and communities in the US. At the federal level, US Small Business Administration programmes, such as the Small Business Development Centre (SBDC) network, provide access to technical assistance and various forms of financial support. At the state level, nearly every state government operates various small business support programmes through state Departments of Commerce or other key agencies. Finally, at the local level, dozens of organisations, run by local governments, non-profits, and the private sector, operate to support and nurture small businesses and aspiring business owners.

Problem to Address

Given this history, it is difficult to argue that American entrepreneurs are 'underserved' when it comes to publicly-sponsored technical assistance or financial support. Most US regions have dozens of organisations that view small business support as a primary mission. Yet, despite this apparently robust support system, American business owners do not seem to be 'getting the message.' Entrepreneurs regularly report that they are unable to identify and access needed information and support programmes.[1] And, when they do identify relevant programmes, they complain that such services are difficult to access and don't effectively meet their needs.

Policy Context

As policy makers sought to understand this 'disconnect' between support providers and entrepreneurs, they found that, in most cases, the problems do not result from poor design of existing programmes. Instead, problems arise because small business assistance operates within a crazy quilt of programmes, initiatives, and support efforts. Entrepreneurs don't know how to access these programmes, and the programmes themselves are not 'user-friendly.'

Faced with this challenge, many US communities have sought to enhance the 'user-friendliness' of their small business support services. They have sought to do so via creation of local or regional systems of entrepreneur support. This essay summarises three related initiatives in the states of Kansas and Wisconsin, and in the Kansas City Metropolitan area (which includes communities in both Kansas and Missouri). These efforts were organised around three broad service provider networks: Network Kansas, the Wisconsin Entrepreneur's Network (WEN), and KCSourcelink.

Description of initiative

Objectives

Each of these service provider networks shared a similar primary goal: *To make it easier for business owners and aspiring entrepreneurs to identify and access needed business support services.* Each sought to introduce a service model known as a 'No Wrong Door' approach.

The 'No Wrong Door' approach builds on service delivery models first used in health care and social service programmes. It is designed to improve coordination between government agencies, and to make it easier for entrepreneurs to access needed services.

Activities

A 'No Wrong Door' model seeks to create a seamless and coordinated system of business support across a region or state. These efforts build a collaborative structure where organisations jointly market their work, share a customer database, and make referrals within the system. Each organisation in the network is trained in a common customer intake procedure and also learns the programmes operated by partner organisations. This collaborative project makes it easier to access the system, and also ensures that entrepreneurs are linked to the appropriate organisation and resource. Finally, the collaborative programme allows service providers to avoid their traditional generalist approach and instead specialise in specific services or target specialised markets (*e.g.* technology firms, minority entrepreneurs). Several characteristics are essential:

- *Common Intake Procedures*: All local service providers are trained to perform a brief intake and diagnosis of an entrepreneur's issues and service needs. Thus, when an entrepreneur calls a service provider, she is not given an immediate referral. Instead, her basic information is obtained and entered into the system. At that point, she will be referred to the appropriate local service provider. For example, if her firm is looking for export opportunities, she will be referred to a local expert in that process.

- *Clear Referral Systems*: Referrals are the cornerstone of the system. The process must be clear to both entrepreneurs and service providers. This requires that service providers explicitly state their specific areas of expertise. They can no longer simply serve all entrepreneurs; they must focus on a specific set of issues or types of businesses. For example, a non-profit might identify its niche as 'training entrepreneurs to work with institutional venture capitalists.' Effective referrals also mean that providers must understand the system, and each organisation's role within it.

- *Clear Guidelines for Entrepreneurs*: As noted above, the system must be understandable to entrepreneurs. They must understand the purpose of the initial diagnostic process, and why they have been referred to a certain service provider. Finally, the type and level of support to be provided must be clearly articulated and understood.

- *Regular Collaboration*: The system will work if the partners effectively collaborate with one another. They must meet on a regular basis, and regularly review how the system is serving local businesses. In addition, service providers must create a single 'brand' for the system so that entrepreneurs are supported by the 'system' and not by a single service provider.

While programmes differ slightly by region, they generally include the following elements:

- A Joint Marketing Campaign.
- Shared Website that serves as 'resource navigator' for customers.
- Shared Database for referring and tracking customers.
- Joint training of all service provider personnel—creation of business service provider network.
- Creation of regional entrepreneur networks to provide peer learning and mentoring opportunities for business owners.

Delivery Arrangements/Budget

Each of these local efforts developed in a unique fashion. In Kansas City, KCSourceLink's[2] creation was funded with support of the locally-based Ewing Marion Kauffman Foundation, the US's largest philanthropic supporter of entrepreneurship. With this grant in hand, network building began in 2003. Ultimately, 140 different resource partners opted to collaborate in the KCSourceLink Network. For the first three years of its existence, KCSourceLink operated with an annual budget of approximately USD 450 000 with the bulk of these funds coming from Kauffman Foundation grants.

In addition to building this people-based network, the KCSourceLink team also developed three information technology tools that help drive the network's operations. The Resource Navigator® was created to organise resource partner programmes and services into a user-friendly, online database. Entrepreneurs and service providers alike can go online, answer a few questions about business needs and get to the specific resources they need.

KCSourceLink also developed its own methods for managing clients and tracking impact. Fifteen of the partner organisations came together to brainstorm about a good management system, and out of that process Biz-Trakker® was born. Biz-Trakker is a versatile client management system that allows for easy referrals between organisations, manages events, and has an embedded survey system that measures business growth and economic impact.

Finally, KCSourceLink also developed a shared website that brings together information about the partners in one easy-to-find place. The site includes a central list of programmes, events and classes provided by the partners, a resource library with detailed information on frequently asked questions by entrepreneurs and information on high-growth resources in the community.

These software tools have been refined over time and are now available for purchase by other organisations across the US and overseas. The Wisconsin Entrepreneur's Network (WEN) and Network Kansas were early adopters of these systems.

WEN traces its origins back to late 2003 as part of Wisconsin Governor Jim Doyle's 'Grow Wisconsin' initiative. As part of this broader effort, the Governor invested USD 1 million to create WEN as a partnership of the University of Wisconsin Extension Networks (and its 13 Small Business Development Centres), the WiSys Technology Foundation, the Wisconsin Technical College System, and the Agricultural Innovation Centre. WEN officially began operations in June 2005.

WEN operates through its partner organisations, but it also utilises four regional directors and a minority business specialist who have special expertise in high impact business development. In

addition to coordinating state wide services, WEN provides discounted training opportunities and access to state grants for entrepreneurs.

Network Kansas also began operations in June 2005 as part of the Kansas Centre for Entrepreneurship. It formally launched operations in March 2006, with 244 network partners on board. The centre was created by the Kansas Legislature as part of the 2004 Kansas Economic Growth Act. This legislation sought to stimulate the development of entrepreneurial enterprises and new technology clusters (especially biotechnology) within Kansas. In its first year of operations (fiscal year 2006), Network Kansas expended USD 506 000.[3]

Network Kansas focuses on serving all 105 Kansas counties. While it provides assistance to entrepreneurs across Kansas, its current network includes partners from 80 of these counties. To date, the programme has served more than 1 500 clients, and it receives 4 800 inbound contacts (via phone, mail, or web access) per month.

In December 2007, Network Kansas announced a new effort to partner with six 'E-Communities.' These regions will tap into Network Kansas' entrepreneurship tax credit programme with the purpose of raising USD 1.6 million in equity capital that will be made available to local start-up companies.

In addition to operating a service provider network, the Kansas Centre for Entrepreneurship also oversees StartUp Kansas, a programme (begun in August 2006) to provide funds to small business in distressed Kansas communities.[4]

Impact of the initiative and evaluation evidence

Outputs/Outcomes

Many of these efforts have been subject to preliminary evaluations which indicate the following impacts: 1) Major improvements in customer satisfaction, 2) Significant cost savings for service provider organisations, and 3) Improvements in regional business productivity and growth. These findings have been determined through surveys of programme customers and partners. No independent analyses have yet been completed. Additional detail on these effects is provided below. However, it must also be noted that the short life-span of these programmes (anywhere from 2-4 years) places some limits on data collection.

KC SourceLink

As part of the hotline referral system, KCSourceLink engages in follow-up assessments with customers at three points: four to six weeks after initial contact, at six months, and again at one year. Ninety-eight percent of feedback from these follow-up calls is positive. A more detailed follow-up survey of 100 clients yielded the following results. The 100 survey respondents reported that:

- 16 started a business.
- 13 expanded significantly.
- 20 are actively engaged in growing a new business.
- 12 solved an operational problem.

- 14 made significant changes to the nature of their business.

In addition to these customer impacts, KC SourceLink highlights other accomplishments since its inception in June 2003. To date, 2 600 aspiring and existing business owners have accessed the KCSourceLink network via telephone hotline or e-mail. In addition, an average of 6 700 monthly visitors access the KCSourceLink website for business information.

KCSourceLink partners have expressed strong satisfaction with the programme in various surveys. They contend that KCSourceLink raises community awareness, resulting in more clients. They also note that clients are now better matched to organisations, resulting in increased productivity. In addition, partners have more knowledge of other network services, resulting in new cross-referral and collaboration opportunities.

Finally, partnerships generated via KCSourceLink have spawned new collaborations in the Kansas City region. For example, more than 20 partners are collaborating to review training classes available throughout the network and investigate training delivery systems to better meet the needs of the entrepreneur. Ten organisations collaborate to host a monthly entrepreneur happy hour for the high-tech market, and seven groups have partnered to market services to the Hispanic population.

Network Kansas

In its initial analysis of its first year of formal operations (March 2006-March 2007), Network Kansas found that more than 80% of clients deemed the service 'excellent' or 'above average.'[5] In addition, ninety-seven percent of surveyed clients could identify positive outcomes as a result of programme assistance. These positive results took the form of a decision to start a new firm, to expand an existing business, or to change some part of current business operations. Overall, the Network Kansas intake Centre is averaging 4 800 inbound contacts per month.

Via StartUp Kansas, the programme also provides direct funds to business. Since 2006, StartUp Kansas awarded USD 583 485 in grants and loans to 22 rural businesses. These firms leveraged an additional USD 2.8 million in other investments.

WEN

WEN has regularly tracked client activity since it began operations in 2005. In the latest year of operations, WEN provided counselling services to 7 168 people, and offering training to 11 558 people. These figures are nearly double WEN's initial output in 2005. Overall, WEN surveys indicate that its programmes have helped create 1 968 jobs while retaining another 2 649 positions. WEN support has also helped companies improve operations through increased sales or productivity enhancements. On average, WEN customers enjoyed annual profitability improvements of USD 16 000 as a direct result of WEN assistance. These findings were determined from interviews with company officials.

WEN has helped spawn a number of other interesting initiatives across the state. Beginning in 2006, the Wisconsin Department of Commerce began providing small grants (of USD 1 000 per county per year) to help the state's county governments create local Inventor and Entrepreneur Clubs. These clubs meet on a regular basis and primarily provide a networking venue for new and aspiring entrepreneurs. An early evaluation of these clubs[6] identified 45 clubs operating in Wisconsin in 2007. A survey of club facilitators found that 38% of clubs reported new regional job creation as a result of participation in the clubs. Similarly, 29% of facilitators indicated that club members had received grants or outside financing due to club participation.

Effectiveness/Efficiency

The short life span of these programmes limits our ability to fully assess the effectiveness and efficiency of these policy interventions. While early results are promising, a more rigorous assessment is needed.

Strengths of the initiative

What Worked Well?

The primary strength of the 'No Wrong Door' model is its heavy focus on the customer. Its basic concept responds to strong customer sentiment---displeasure with the difficulty of identifying and accessing small business support services. Instead of making entrepreneurs wander from one support programme to another, this new model seeks to create a less complex and frustrating experience for entrepreneurs.

What was innovative?

The model also embraces new organisational structures based on collaborative networks. Instead of creating a one-stop shop that seeks to provide all services to all customers, the new service provider networks encourage organisations to focus on 'core competencies,' such as a targeted industry sector, a demographic group, or a type of business (*e.g.* microenterprise).

The creation of new software platforms (*i.e.*, BizTrakker and Resource Navigator) has helped stimulate participation in local networks. The Wisconsin and Kansas programmes also provide financial incentives to network partners to help defray costs and encourage participation in the network.

Reasons underlying success

These programmes have been successful because they have created strong leadership teams with sufficient resources to seed, promote, and expand the service provider networks. The central network weaving role is critical to success. These network weavers encourage participation, and also provide other benefits—in the form of new resources and professional development opportunities---to network partners. For example, the WEN leadership team produces a weekly newsletter, supports on-site and web-based training for local service providers, and also provides grants to network participants.

Successful network leaders also work diligently to share credit with network members. They promote the work—and the accomplishments—of the network as opposed to individual constituent organisation. These individuals and organisations must shoulder a heavy administrative load in terms of managing, motivating, and marketing the network. As a result, additional funding for network management must be included in any proposal to replicate this model.

Weaknesses of the initiative

Obstacles or problems that emerged

The primary obstacles to success revolve around issues of building a strong and sustainable service provider network. Many service providers are reluctant to participate in these networks, viewing them as 'simply more meetings' that do not contribute to their own agency's bottom line. Encouraging these reluctant partners to engage in the network can prove challenging. Strategies to

address this issue have included providing payments to network partners, providing special resource opportunities (such as training) to network partners, and the blunt tool of mandating that organisations participate in the network.

A related problem concerns the sharing of customer data via the service provider referral network. These organisations have addressed this problem via the development of special confidentiality agreements that protect proprietary customer information. In other communities across the US, these confidentiality issues remain unresolved. In these cases, network partners collaborate in terms of marketing and the resource navigation tool, but they do not share customer information within the network.

Quality of response to obstacles or problems

The responses noted above have tended to be effective in terms of assuaging the concerns of reluctant partners. The most effective approach has involved the provision of financial support to network partners. Even small sums, sometimes as low as USD 5 000 or 10 000, have served to help encourage active network participation.

Potential transferability

What are main lessons for Wales and places like Wales?

These programmes could be easily transferred for use in Wales or in other similar settings. The basic software packages developed by KCSourceLink are available for purchase, and many other regions in the US are starting to use these products.

Considerations for adoption

The primary obstacles to implementing a 'No Wrong Door' model do not result from technical concerns. Instead, they result from political turf battles between different organisations in competition for resources, customers, and public recognition. These programmes thus require an extensive commitment to fostering collaboration among network partners. In many cases, this requires creation of a full time network coordinator whose primary job is to build connections between various network partners. As noted above, these network building positions should be robustly funded. If possible, additional funding should be provided to provide incentive payments to other network partners.

Network operations also improve when partners participate in regular meetings. At the network's inception, partners might meet on a monthly basis, either in person, via conference calls or via webinars. These sessions help partners learn about each other's programmes, and should also be used for joint professional development opportunities.

Web site and database hosting is another issue to consider when implementing a no wrong door approach. These three programmes all operate with one lead partner who manages the network database and web portals. Each partner organisation may continue to operate its own website and internal databases, but the network sites are managed by one of the partner organisations, which manages access to the data and ensure quality control over information and marketing materials.

For further information

KC SourceLink – Ms. Maria Meyers, Network Builder, KC SourceLink, 4747 Troost, Kansas City, MO 64138, USa – Tel. 001-816-235-6116 – meyrsme@kcsourcelink.com – www.kcsourcelink.com and www.ussourcelink.com.

Network Kansas, c/o Kansas Centre for Entrepreneurship, 1845 Fairmount, Box 202, Wichita, Kansas, 67260-0202 – Tel: 001- 877-521-8600 – Fax: 316-978-7311; info@networkkansas.com.

Wisconsin Entrepreneurs Network; 423 Extension Building, 32 Lake Street, Madison, WI 53706-1496; Tel: 001- 608.263.0398; Fax. 001- 608.263.7830; www.wenportal.org; gayle.kugler@uwex.ed

ENDNOTES

1. See, for example, Erik R. Pages, Building Systems for Entrepreneur Support,' Economic Development America, Winter 2005; Erik R. Pages and Deborah Markley, The Climate for Entrepreneurship in Rural North Carolina.' Report prepared for North Carolina Rural Development Centre, January 2004; Thomas S. Lyons, The Entrepreneurial League System: Transforming Your Community's Economy through Enterprise Development. (Washington, DC: Appalachian Regional Commission, 2002); Wisconsin Entrepreneurs' Network, A Medium for Growth: The State of Entrepreneurship in Wisconsin, Wisconsin Department of Commerce, 2006. This situation is not unique to the US. For a similar business perspective from Great Britain, see Confederation of British Industry, 'Improving Government Services for Small and Growing Businesses,' CBI Enterprise Brief, January 2006.

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VÄSTRA GÖTALAND REGIONAL GROWTH AGREEMENT (SWEDEN)

Andy Pike
Centre for Urban and Regional Development Studies (CURDS), Newcastle University, UK.

Rationale for the initiative

Västra Götaland's regional growth has been propelled by industrial specialisation in shipbuilding as well as automotives, petrochemicals, pharmaceuticals and food from the 1960s and 1970s. From the 1980s and 1990s, the region's economy faced a slowdown and adaptation challenges, acutely affecting its more traditional industries, in response to a globalising and integrating economy, international liberalisation of trade and capital flows, technological developments and Sweden's EU accession in 1995. Since the 1990s, however, the region has effected a relatively successful transition from a predominantly industrial region toward one based upon more knowledge-intensive and higher-value added economic activities in both manufacturing and services. The regional governance system has undergone change too. From 1999 and recently extended to 2007, Region Västra Götaland was one of two national pilots in Sweden of directly elected regional bodies with a higher level of autonomy in the balance of responsibilities between central and local government. Traditionally, central and local government in Sweden have been strong while the regional tier has been weak, fragmented and politically insignificant.

At the national level from the early 1990s, Sweden suffered from sluggish growth, deteriorating public finances and growing regional disparities polarised between growing and stagnant and/or declining regions. Paradoxically, slow long term economic growth was accompanied by relatively high levels of RTD expenditure in both Swedish industry and universities[1]. In this context, in 1998 national government shifted from a redistributive model of regional policy seeking balanced regional development to a new 'national regional growth policy' to devolve responsibility to develop initiatives and promote growth in *all* regions of Sweden to contribute to the national economy[2]. The transition towards more growth-oriented spatial policy reflects an international shift based upon perceived problems associated with attempting to redistribute activities in the context of more open and integrated national economies, as well as issues of relatively high costs and deadweight effects in publicly subsidising developments that would have occurred anyway through the workings of the market. Growth-oriented spatial policy is underpinned by new (endogenous) economic growth theory that emphasises the potential for dynamic increasing returns, positive externalities and spillovers from the geographical concentration of economic activities.

The principal instrument of the new growth-oriented spatial policy was the introduction of Regional Growth Agreements (RGAs) (*tillväxtavtal*) based upon a conceptual model that emphasised the regional foundations of economic growth, localised learning and the effectiveness of decentralised spatial policy[3]. The RGAs were established to co-ordinate and adjust sectoral policies better to exploit unique regional potential and to mobilise regional actors to explore new approaches to regional and local development. The RGAs have since evolved into three year Regional Growth Programmes (RGPs) (*tillväxtprogram*) from 2003 (2004-07) with a greater emphasis upon promoting clusters and innovation systems regionally.

Description of initiative

The RGA aimed to provide a strategy and lead in the co-ordination of the region's economic development strategy. The RGA was a 3-year (2000-03) development 'contract' that provided a strategic analysis of regional development, set the goals and established regional priorities through stakeholder dialogue and consensus and planned for financing from national and EU funds, implementation and evaluation. In line with the new national regional growth policy, the RGAs were underpinned by several principles:

- *Inclusive and broad partnership* – building upon the long history of public policy co-operation in Sweden and inspired by the partnership approach in EU Structural Funds[4], the RGAs established partnerships open to regional and local actors, including public, private, civil society and higher education, but prioritised private business sector involvement.

- *Systematic and process-based approach* — Thorough and rigorous analysis was encouraged to identify regional growth potential and innovative interventions married to an evolutionary view of strategy development over time.

- *Specific regional growth potentials* — The RGAs focused on the unique and particular assets and potential for economic growth at the regional and local levels.

- *Sustainable development* — An integrating principle for the RGAs was the search for forms of regional and local development that were sustainable in economic, social and ecological terms.

Specific activities and projects within Västra Götaland's RGA were focused around four often connected and mutually supporting themes:

- *Industry and entrepreneurship* – For entrepreneurship, the aim was to support projects to encourage and promote 'creative active citizens' interested and willing to start and develop new business ideas. Projects worked at school and University levels, for example including entrepreneurship shows. However, the construction of the regional innovation system especially the incubator programmes – discussed below – has been commended as 'good practice' within Sweden.

- *Competence and skills enhancement* – Lifelong learning provided the core concept for projects under this theme. For example, a project aimed to provide verification and validation services for the education and qualifications of new citizens from other countries to support their competitiveness and integration in the labour market and to support migrant entrepreneurs in starting new businesses. Another project under this theme was the Bättrekonceptet (The Better Concept) which sought to promote knowledge transfer between SMEs and universities principally by providing bespoke and modular courses for skills development tailored to particular SMEs to allow staff to accumulate credits that would be recognised and count toward University qualifications. All courses have been developed based on the companies' needs, participation is free and their delivery is designed to facilitate the involvement of working people.

- *Attractive living environment and local development* – Culture and tourism provide the focus for this theme in creating and projecting an attractive and competitive region in Västra Götaland. Projects were also themed in association with the particular characteristics and attributes of parts of the region, for example nature and boat-life in the west of the region,

medieval history and attractions in Skaraborg and the regional symphonic orchestra and opera in Göteborg. Initially established with the help of EU Structural Funds, the regional film foundation Film i Väst (Film in West), for example, was the institutional focus for a number of RGA supported projects under this theme.

- *IT and infrastructure* – Two examples are pertinent. First, infrastructure investment has been targeted at 'regional enlargement' to broaden the labour market area, enhance connectivity and labour mobility, and expand the skills and competences pool. In particular, the focus has been to try and lessen skills shortages and inflationary pressures in the Greater Göteborg city-region and better connect second tier cities and towns undergoing restructuring, for example Trollhatten's declining automotive sector employment. Second, since 2003 building up the national broadband network across all municipalities, especially rural areas, has been the focus of activity in Västra Götaland under this theme. Part of the funding for the RGA from central government has been specifically for the regions to manage the roll-out of this IT infrastructure. The RGA and subsequent RGP have managed provision in urban areas in the region and extra measures have been put in place for the remote and rural north western municipalities.

Drawing upon its key assets of corporate R&D functions, relatively high R&D expenditure and internationally renowned research universities, the core of Västra Götaland's RGA explicitly focused on creating and stimulating a regional innovation system and providing specialised platforms for the stimulation and mobilisation of technology-based economic activities in new and existing businesses. The aspiration has been to create 'competence networks' with a range of specialised hubs, involving Research Institutes, Universities and businesses. The rationale for intervention and support through the RGA was to construct and/or build up points or hubs for development where networks of companies can be brought together to stimulate new ideas for research and development. This knowledge-based strategy was based upon high R&D intensity, new technology-based firms and intermediate organisations to facilitate university-industry knowledge transfer using the 'science park' or 'technopole'-type model. Better connecting the regional knowledge base with existing economic activities and more effective commercialisation and exploitation of new innovations and technologies in new and existing businesses were viewed as key to transforming the regional economy toward more knowledge intensive and higher value-added activities. Cross-cutting and interconnecting the more generic research-oriented hubs and platforms were cluster-oriented initiatives focused upon automotive, forestry, metallurgy, IT and telecommunications, pharmaceuticals/biotechnology and medical technology, and aviation and aeronautics.

Informed by a regional innovation systems approach and stimulated by the National Agency for Innovation Systems (VINNOVA), Göteborg has been the focus of interventions seeking to effect this transition, especially through its world class and specialised science parks, including:

- *Borås-Istigrea* – Specialised in technical textiles for biomedical applications and the automotive and construction sectors.

- *Chalmers Technology Park* – R&D centres for established companies.

- *Chalmers Innovation* – Incubator for high-tech companies.

- *Lindholmen Science Park* – Specialised in IT and telecommunications. One RGA project funded the infrastructure to support an 'open arena' with the objective of bringing businesses together to undertake research and demonstration projects. This involved Ericsson, Volvo and the security sector working on pre-competitive applications projects.

- *Sahlgrenska Science Park* – Specialised in biotechnology and linked to the Faculty of Health Sciences at Göteborg University. This includes an incubator programme for new medical and related businesses.

- *Trollhatten Science Park* – Specialised in production technology and closely linked into the local automotive sector, particularly the research programmes of Volvo and SAAB.

Other smaller scale initiatives include the regional film foundation Film i Väst (Film in West) which provides incubator accommodation and services for film and media businesses and is co-owned by the region and funded through the RGA.

The RGA was delivered by Region Västra Götaland which has evolved from the County Council (*landsting*) and taken over responsibility for regional development from the County Administrative Board (*länsstyrelser*) state bodies at the regional level as part of the directly elected regional government pilot initiative. At the national level, RGAs were overseen by NUTEK (the Swedish Business Development Agency – recently renamed the Swedish Agency for Regional and Economic Growth in line with the more growth-oriented regional economic policy) working for the Ministry of Enterprise, Energy and Communications. While the RGAs were not formal legal contracts but voluntary agreements without formal compliance measures, national government ensured the participation of the relevant actors. Specific projects within the RGAs utilised specialised institutions with appropriate networks. For example, the SME skills development projects were delivered through the regional network of Lärcentrum (Learning Centre). These centres were established in 1997 as extension and outreach programmes with the aim of involving SME staff in university education and 35 of the 49 municipalities in Västra Götaland have a learning centre. Lärcentrum act as brokers to identify training and competence development needs in the local and regional labour market and channel them to the network of educational providers, including the employment offices, universities, businesses, the Swedish Agency for Networks and Cooperation in Higher Education, local education providers and libraries.

No new funding was provided for the RGAs. The aim was to encourage more efficient and effective utilisation of existing national and EU funds controlled by existing institutions (*e.g.* County Councils, County Labour Boards) through increased regional and local influence deliberated and exerted through the RGA partnership, including reappraisal of existing approaches and funding priorities. The total turnover of the growth programme was just above 3bn SEK (EUR 319m), of which 1.3bn SEK (EUR 138m) funded specific projects[5]. Some 90% of the funds supported activities in communications, culture, business development and lifelong learning. The remainder were allocated to activities in environmental development, entrepreneurship and ethnic diversity. Across the programmes, an 'economic creativity' theme, focused on clusters and innovation systems, accounted for 40% of the total funds. The total funds were provided by the national Swedish government (40%), Region Västra Götaland (25%), business community (17%), municipalities (9%) and the EU (9%).

Impact of the initiative and evaluation evidence

The RGAs were evaluated annually by the national Ministry of Industry, Employment and Communications, although the lack of formal output and outcome targets means the RGA evaluations are more qualitative and general than quantitative and formal. At project level, however, more formal evaluations have been undertaken. The three national evaluations (2001, 2002 and 2003) undertaken conclude that the RGAs have been moderately successful nationally[6]. Specifically, RGAs have raised awareness of growth issues at the regional level, the importance of the regional context to firm competitiveness, the importance of mobilising non-governmental regional and local actors with especially municipalities becoming more active and co-operating to enhance regional and local

competitiveness both domestically and internationally, enhanced opportunities for knowledge sharing and learning, and improved the awareness and coordination of regional development resources. Areas identified for improvement included the need for more formal output and outcome targets, higher levels of private sector involvement particularly from SMEs, improved regional-local and regional-national relations, more bottom-up stimulus for new initiatives and enhanced consideration of more critical issues such as the role of large corporations. Region Västra Götaland's assessment of its first RGA acknowledges that it was a very new initiative established in 2000 in a region that had only gained its regional government in 1999. As a consequence, the first RGA was relatively unfocused and contained too many projects spread across the region. It did, however, bring relevant actors together for dialogue and prioritisation. For example, as part of the RGA for the first time all 49 municipalities in Region Västra Götaland agreed to concentrate 95% of infrastructure funding for the first 5 years on Göteborg.

Despite not being 'owned' by any specific actor in order to encourage broad discussion and innovative new ideas, existing well established actors with funds tended to dominate, incorporating ideas for change into existing initiatives and programmes. Similarly, despite the emphasis upon specialisation and mobilisation of unique regional potentials for growth, the RGAs were dominated by 4 generic themes: industry and entrepreneurship; competence/skills enhancement; attractive living environment and local development; and IT and infrastructure. Between 80 and 95% of average total budgets for all RGAs for 2001-02 were expended on these 4 themes.

Available evidence of impact and evaluation suggest that successful incubators are especially evident in medical sciences at Sahlgrenska Academy and the Film i Väst regional film foundation where over half of the films made in Sweden are produced at the foundation in Trollhatten. The first Bättrekursen (Better Concept) course was developed and implemented during the 2003-2004 academic year with a very positive response from businesses and learning centres (Lärcentra), and the University Colleges of Borås, Skövde and Väst jointly decided to further develop the methodology. The courses are in the form of distance learning on the Internet with personal meetings at a local learning centre. Up to the spring of 2007, 27 Better Courses have been completed, with approximately 830 participants[7]. The Innovative Actions Programme "Industrial Dynamics" in Region Västra Götaland (VG-region) received a positive evaluation that recommended it should receive long term financing, its central concept should be further developed and the concept should be integrated with other regional initiatives[8].

Further RGA evaluation work by the Parliamentary Commission on Regional Policy emphasised the need for institutional reform for regional policy implementation, further development of the institutional setting and process for RGAs, and the importance of inter-firm co-operation, entrepreneurship, new technology and universities for economic growth[9]. Indeed, the Commission recommended that the long term orientation and specialisation of higher education should be more closely related to the RGA process. In 2007, the national Committee on Public Sector Responsibilities set out plans for a new regional system of public administration with clearer roles and division of responsibilities between the levels of government and the creation of regional divisions that are the same for the national and local government sectors. The regional government pilots in Västra Götaland and Skåne were evaluated as successful, especially in developing, co-ordinating and delivering the RGAs, and the report suggested the creation of 6-9 large regions across the national territory on this model. Region Västra Götaland's assessment of the regional government pilot has been very positive because it has enabled them to establish a legitimate body with authority and autonomy to raise and distribute its own resources, establish particular priorities for its region – in this case R&D and the regional innovation system – as well as providing the region with a stronger political voice in its dealings with national government. The regional government status is viewed by Region Västra Götaland as essential to the 'bottom-up' approach to regional economic growth policy

within the national framework and in supporting its ability to innovate and experiment, for example in sustainable development initiatives. Regional government status has meant the region has been able to take a role as the catalyst and co-ordinator of development to a greater extent because of its political mandate and resources to set-up partnerships and develop and support projects. Previously, the County authority had limited political mandate and enacted central, national government-designed plans.

Available assessments of Västra Götaland's RGA conclude that it has been an important tool for co-ordination and co-operation between regional and local actors and played a contributory role alongside a favourable international macroeconomic context in the region's recent economic change, supporting its attempted transition toward a more knowledge-intensive economy. By 2004, Västra Götaland had experienced a decade of relatively strong growth and GDP and employment rates were 99% and 73% of the national average respectively (119% of EU average). The number of jobs increased by 4 300 from 1994, mostly in the city of Göteborg and its surrounding region. Västra Götaland can claim an exceptional performance in levels of R&D investment and the growth of new technology-based firms in recent years, especially in the leading science parks in Göteborg. Productivity and investment levels have improved alongside new firm formation rates[10]. Sectorally, the region has become dominated by services (82% GDP) alongside a sizeable manufacturing sector (18%), suggesting a relative evolution in its economic structure away from the historical dominance of the manufacturing industry. Regional public finances and property prices have benefitted from rising prosperity within the region.

Strengths of the initiative

The RGAs were innovative forms of centre-region agreements because they combined a strategic lead and co-ordinating focus for regional development with accountability and inclusion of key institutions at the regional level. The systematic and process-based approach in the RGA underpinned a focused, long-term and evolving strategy for regional growth. Thorough and rigorous analysis of regional assets and growth potential provided a context-sensitive means of developing an appropriate strategy built upon the unique growth potentials of particular regions. Such growth potentials are better understood, identified, recognised and prioritised by regional and local actors than by central national government departments. While sometimes uneven in practice, this approach constitutes a 'bottom-up' as opposed to 'top-down' approach to territorial development policy[11]. For Västra Götaland, this has meant recognising the strengths and dynamism of Göteborg — Sweden's second largest city — including its key position as a transport hub and R&D centre with strong universities supporting growth in IT and biotechnology. Indeed, Göteborg has been a key focus of activities to stimulate and mobilise better connections between the regional knowledge base and both new and existing businesses.

Västra Götaland's RGA has been innovative as a forerunner in integrating economic, social and environmental aspects in a model of sustainable regional development. Specifically in the city of Göteborg, model environmental initiatives have been developed and clear priorities set by the public sector, for example in making the urban transport system more sustainable, reducing harmful emissions, renewing the energy sector and stimulating local markets for ecological products[12].

Västra Götaland's RGA partnership was inclusive and consensus-based which enabled a large scale mobilisation of relevant actors and a deliberate opening up of the dialogue and institutions of regional development to new formerly excluded voices, including ethnic minorities and young people. The aim of the broadly based partnership was to improve efficiency and democracy by including relevant stakeholders. The partnership model was new and brought relevant actors together to discuss and prioritise their plans. The operation of the RGA partnership was facilitated by a two-tier

organisational structure involving more diverse local level discussion and working groups that then fed into the considerations of the regional level partnership.

Weaknesses of the initiative

The experience of the RGAs within Sweden, and Västra Götaland in particular, reveal a number of weaknesses, many of which are being addressed in the successor Regional Growth Programmes.

First, as a broadly conceived and voluntary development contract, the RGAs were relatively weak on analysis and strategic planning and lacked formal output and outcome targets that could be formally evaluated. This enabled relatively loosely focused RGAs to emerge around common themes (industry and entrepreneurship; competence/skills enhancement; attractive living environment and local development; and IT and infrastructure) that were uneven in their relation to unique regional assets and gave insufficient priority to their orientation and contribution to regional growth. The early versions of the RGA contained insufficient levels of prioritisation to identify and promote key areas and 'thematisation' to group large numbers of projects together in mutually supportive ways to reinforce and expand their potential impact. Much time and effort was expended by the partners in establishing consensus about the RGA strategy. The RGPs are more thematic and focused on delivery and achievement with 4 main hubs to focus and connect activities, for example in trying to make the regional innovation institutions work in a more systematic way, but also to ensure knowledge and resources are spread across the region. The tendency with the early RGA was to support too many insufficiently related projects that limited their impacts but still created substantial administrative and co-ordination activities and workloads.

In response, to prioritise policy evaluation and learning, the national Institute for Growth Policy Studies (ITPS) was established in 2001 to provide and support better analysis, intelligence and evaluation for policy, especially for growth, innovation systems and entrepreneurship. The new Regional Growth Programmes have sought to emphasise the importance and articulation of growth orientation in the strategies and to increase the ability to monitor regional growth processes more explicitly. In addition, a more proactive and integrated role for regional sustainable development has been sought within the current RGPs (2004-07)[13]. The mid-term evaluation of the current RGP in Västra Götaland has identified the need for closer working and formalisation and streamlining of the partnership at higher levels involving the key decision-makers from the most important organisations involved. The aspiration is to make the partnerships more effective at making decisions, taking action and working in a more prioritised, thematic and project-oriented way. This kind of formalisation might compromise the aspiration for wider inclusion of interested parties, however.

Second, a further concern for RGAs has been the extent of national central government involvement in strongly steering the regional growth initiatives through setting a general framework concerning content and funding[14], although to a lesser degree in the more devolved pilot regional governments of Västra Götaland and Skåne. A degree of detail was provided in the national guidance for RGAs that in some cases limited the possibilities for regions to make the best of their own conditions. Evaluations highlighted the need for improved and increased vertical and horizontal co-operation and co-ordination between agents involved in regional development at the centre and in the region. The Swedish Government is introducing a new ordinance and standing national forum to support such activities in 2008. National centre-region relations and co-ordination and cross-sectoral working are important in Sweden and internationally and analysis and good practice exist[15].

Third, the issue of University and higher education's involvement in the RGAs is being resolved in the RGPs following a national study[16]. This research found that nationally the RGAs had high levels of university involvement, despite an unclear message from national government on whether or not

they should be involved. This is being resolved now in favour of a clear role for universities and higher education in contribution to the new RGPs, particularly in contributing to building and sustaining the regional innovation system[17].

Fourth, the RGA initiative aspired to develop strategy for functionally defined regions, for example using travel to work areas, but in practice most RGAs retained the administrative region defined by County Council boundaries. Few regions extended their strategic analysis beyond their administrative regional boundaries to consider functional economic linkages or neighbouring centres of competence and/or specialisation that might impinge and/or complement the strategic development of their own growth orientation. Again, the RGP in Västra Götaland has sought more thoroughly to address the issue of externalities, spillovers and cross-boundary working amongst the 4 major areas within Västra Götaland. Another problem for the RGAs was the missed opportunity to rationalise and provide more specialised business support in a fragmented system with too many competing institutions and lacking cost effectiveness.

Fifth, following the critical national evaluation of the very limited extent to which gender equality issues had been integrated into the RGAs in 2000, national government selected Västra Götaland as one of three pilot regions for developing methods to ensure the integration of gender-equality would be a self-evident strategy in regional development policy. However, even with an enhanced sensitivity to include the voices of women, ethnic minorities and other communities of interest in regional policy development, such groups were typically limited in their ability to contribute and participate due to their lack of resources.

For the Västra Götaland region, the extent and character of the recent decade of growth is marked by a number of ongoing regional and local development challenges. Growth has been uneven both socially and spatially. Socio-spatial disparities have grown with the benefits of growth concentrated in the Göteborg region and amongst the younger and more educated population, although even here exclusion and particularly ethnic segregation problems persist. Unemployment remains relatively high accompanied by considerable growth in the number of people funded by social insurance on sick leave, equivalent to 11m workdays or 31 000 annual jobs between 1998-2005, and early retirement pensions, 10% or 100 000 people[18].

Potential transferability

In common with Västra Götaland, Wales is seeking a similar transition toward a more innovative knowledge-intensive economy. Raising business productivity across Wales as a means of improving job quality by increasing value-added per job and earnings is a priority in the Welsh Assembly Government's frameworks for economic and national development[19]. Similar to Region Västra Götaland, Wales has a comparable if slightly higher proportion of manufacturing activity, an important and relatively well internationally connected city-region in Cardiff and a degree of governance autonomy for economic development. Indeed, as a relatively recent but since extended pilot initiative, Region Västra Götaland may value closer understanding of sub-national governance from the Welsh Assembly Government experience. Important differences compared to Västra Götaland include Wales' low and weak levels of growth and productivity, and the relatively smaller extent and lower international standing of its research intensive university activities. Contrasts which together suggest any transition toward a more knowledge-intensive economy in Wales will be challenging. Moreover, size is significant too. Wales' population is close to 3m people compared to 1.5m in Region Västra Götaland.

The RGA experience in Västra Götaland suggests the following lessons and transferability issues for Wales. First, the systematic and process-based approach to sustainable territorial development

emphasises the need for thorough analysis and strategic planning on an ongoing basis that feeds into an evolving development strategy over time. This approach is particularly important given the long-term nature of sustainability issues and the desire to identify durable, higher value-added economic growth potentials. Wales has a firm basis and head start for such an approach in its statutory responsibility for sustainable development and commitment to approaches that emphasise the strengths of the environment, culture, language and people of Wales[20]. Västra Götaland's sustainable development strategy — Vision Västra Götaland — was only approved in 2005.

Second, the inclusive and broadly-based approach to establishing the RGA partnership provided a means for tapping into local knowledge, consensus-building and identifying priorities with regional and local growth potential. New combinations of regional and local actors and interests have provided a stimulus to innovation and new ways of thinking about regional and local growth potential. The partnership approach was a wholly new innovation for public policy-making in the Swedish and Västra Götaland contexts. Formerly, public authorities alone maintained decision-making power and worked within national centrally-defined frameworks. Adaptation has been necessary amongst public institutions and their staff to work within broader and more diverse partnerships. The regional government has recognised the importance of the connection between research and policy-making by supporting a new Centre for Regional Analysis at Göteborg University, an evaluation panel for the recent Vision Västra Götaland and postgraduate study for staff development to improve their capacity for strategic and long-term thinking and connecting and integrating projects into coherent themes. For example, Västra Götaland demonstrated its commitment to the equalities agenda and made this concrete by integrating into strategy development assessment of regional growth policy for its differential gender impacts. Sweden's democratic corporatist traditions and systems of extensive consultation (*remiss*) between state, business (private sector and trades unions), and civic society mirrors the Welsh institutional history and stakeholder engagement arrangements[21]. Potential therefore exists to deepen and extend such a partnership approach to economic development strategy formulation and ongoing development. Wales' experience with supporting social partners with limited resources to contribute and participate might also be of interest to Region Västra Götaland.

Third, the RGA experience underlines the importance of the alignment and co-ordination of strategies within a multi-layered governance structure. For strategy and policy coherence and effectiveness an important lesson is the need to achieve connection and complementarity between strategies and frameworks working at different territorial scales and, in some cases, areas. For example, Västra Götaland region is part of the larger Västsverige region for EU Structural Funds. In Sweden, this co-ordination has taken the form of the National Strategy which aligns the new Regional Growth Programmes with Regional Development Programmes, Regional EU Structural Fund programmes for Regional Competitiveness and Employment and Territorial C-operation Programmes[22]. This coordination has to be handled carefully to avoid an overly centralised approach. National strategies can provide guidance on priorities for the regional strategies but sufficient scope and flexibility needs to be retained to encourage and stimulate regional and local initiative and innovation in identifying and prioritising regional and local growth potential. In the Welsh context, the RGA experience underlines the need to better connect and co-ordinate policy agendas both across the Assembly Government and in relation to national central government. For example, although economic development is a devolved responsibility, the relationship between Welsh and UK government policy impinging upon economic development, for example on tax, public expenditure and macroeconomic issues, is clearly important.

Finally, at the strategy level, Region Västra Götaland's RGA and subsequent RGP suggest possible complementarities and ideas for addressing common problems and strategic priorities in Wales. First, in the approach to spatial planning, the way in which the contribution of dominant cities and their relationships with their broader regions is handled is instructive, particularly given the

concerns about the balance of spatial development across Wales[23]. When Västra Götaland was created as a region there was a conscious decision not to centralise all the functions in Göteborg in order to reduce the potential for political tension and frictions and to reduce the sense that Göteborg was the only dominant centre within the region. In future strategic planning scenarios, Göteborg is interpreted as one of the key hubs for western Sweden within and beyond Region Västra Götaland. As the national capital in Wales and despite its relatively small size in a UK context, the Cardiff city-region occupies an important position and large cities and well connected urban areas are recognised as powerful centres of economic growth in Wales' economic development strategy. Region Västra Götaland has been careful to encourage and stimulate growth potential in the economic core of its regional capital while being mindful of sustainability issues and the constraints of overly concentrated spatial growth and the problems of disparities *vis-a-vis* other parts of the region. Indeed, regional balance is a key element in the new RGP dialogue with a desire not to just focus all the resources on Göteborg, but to ensure that the resources of the whole region are used for the whole region and the competence networks established as part of the regional innovation system can be spread out and connect, for example, the rural areas. The build of broadband provision, for example, has contained extra measures to ensure the connectivity of the remote and rural municipalities in the north west of Västra Götaland. Wales has similar needs in managing the articulation of the pattern of spatial development between north, south, east and west Wales. Second, Wales has the potential to learn from Sweden's relatively higher standing, higher value added and competitiveness in key growth sectors and forms of support and policy intervention, especially in raising productivity, RTD and knowledge transfer between universities and new and existing businesses, job quality and earnings. This might be exploited effectively in the cluster/sector initiatives that overlap between Wales and Region Västra Götaland's shared focus upon automotive, forestry, metallurgy, IT and telecommunications, pharmaceuticals/biotechnology and medical technology, and aviation and aeronautics. Third, Region Västra Götaland is experimenting with initiatives to stimulate public entrepreneurship, for example in regionalising its public procurement programmes. Wales has also been active in localising food and drink purchasing for public institutions such as schools and hospitals[24]. Fourth, mutual policy learning might be possible concerning increased workforce participation. While Västra Götaland's employment rate is high internationally due to high levels of participation amongst women and the elderly, it shares a common challenge with Wales to address inactivity, particularly amongst those of working age in receipt of social assistance.

For further information

Agneta Mårdsjö
Västra Götalandsregionen
Regionens hus
Box 1091
405 23 Göteborg
Tel: 031 - 63 09 48
Mobile: 0703 - 75 19 23
www.vgregion.se/vgrtemplates/Page____23208.aspx

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HOTHOUSE BUSINESS INCUBATOR (IRELAND)

Declan Murphy
Strategy Partners Ireland.

Rationale for the initiative

Problem to address

National development policy in Ireland over the past two decades has emphasised the importance of promoting the establishment of new small and medium-sized enterprises, especially enterprises that have the capability to grow and serve export markets ('National Development Plan 2007-2013'). In the transition to a knowledge economy the education system is seen as a 'key driver of Ireland's competitive advantage' (Higher Education Authority 'The Transition to a Knowledge Economy' www.hea.ie). Addressing this challenge involves a multitude of players including third level campus centres and enterprise development programmes such as the Hothouse programme in Dublin.

In the 1980s more than 90% of the graduates from many Dublin Institute of Technology (DIT) courses were emigrating due to lack of opportunities at home (www.theboltontrust.com). As the country's economy stagnated Ireland was experiencing a 'brain drain', continuing a pattern of emigration that had begun in the 19th century. This led to new initiatives to foster and help new SMEs by the DIT with the establishment of the 'Project Development Centre' (1983) and by the staff of the DIT ('The Bolton Trust' was established for this purpose in 1986).

Internationally less than 10% of SMEs go on to be high growth companies and in many countries it is much less than 10% (UN, 2003 and Forfás/GEM National Coordinator, 2007). Notwithstanding its progress with entrepreneurial activity over recent decades, Ireland, similar to many other countries, faces the challenge of promoting more growth oriented SME companies in higher value added products and services that are not dependent on low cost competition.

The Hothouse programme, organised by the Project Development Centre (PDC) in Dublin, contributes to meeting these three main policy challenges. Initiated by the Dublin Institute of Technology (Ireland's largest third level institution with over 21 000 students)[1] in 1983 as the DITs enterprise support unit, the Project Development Centre has been instrumental in encouraging and stimulating the development of indigenous enterprise through a range of activities. For over 20 years more than 400 companies have been supported through their various training programmes (Forfás, 2007). From 1991 to 1999 the PDC ran a successful 'Enterprise Development Programme'. This one year support and management development programme helped graduate entrepreneurs to start up and run their own businesses. Through this practical and innovative support scheme the PDC has been successful in facilitating the launch of over 250 new cross sectoral businesses. In 1996 the PDC launched the 'Fast Growth Programme'. This helped owner/managers deal with the issues of rapid expansion and almost 50 entrepreneurs have successfully grown their businesses through this initiative.

In 2001 the PDC launched 'Hothouse', a start-up programme that helps entrepreneurs of knowledge-intensive businesses to start up and build firms with global potential. Located in the business environment of Docklands Innovation Park (not on the DIT campus), the Hothouse Incubator – now the main activity of the PDC – has 1 128 square metres of incubation space and gives participants the opportunity to work alongside fellow entrepreneurs, business mentors and experts and others who understand the start-up and early development stage process. It offers a full training, mentoring, counselling and incubation programme and an environment of ideas and support services from which their businesses can thrive. Hothouse is not restricted to graduates of the DIT. It is open to graduates from all third level institutions in Ireland and has also attracted participants, for example, from India, USA and France who were based in Ireland as well as graduates from other regions in Ireland. This openness and proactive outreach to diverse participants from different sources was cited by some companies as a highly positive feature of the Hothouse approach.

Central to the Hothouse philosophy and concept is the recognition that starting a business involves, as one venture capital company described it, a 'huge level of uncertainty' with some entrepreneurs having developed project concepts and others just project ideas. Entrepreneurs need support and guidance at that stage and Hothouse gives a good structure and forum to examine ideas and viability, to provide quality thinking time to entrepreneurs (GEM national coordinator) and to accelerate the process of examination. There is a broad consensus now (in reports, surveys and people consulted) that campus programmes and incubators like Hothouse are 'useful, and provide a real service', are 'very good for companies to get started', are a 'seed bed for the feeder system of new emerging companies' and are 'an essential part of the enterprise mosaic you need in a country'.

The Hothouse programme has succeeded in its first main target of generating knowledge-intensive business. A survey of companies in the programmes over the years, conducted in 2007[2] by Hothouse management, shows a high proportion of technology companies participating. Out of 186 companies that had enlisted in the Hothouse programme at the time of the survey, 125 responded to the survey (giving an overall response rate of 67%) and were in the sectors shown in Table I.11.

Table I.11: Number of participating companies by sector

Sector	% of Company Participants	Number of Companies
ICT	23.7%	29
Healthcare and Biotech	4.9%	6
Engineering	3.2%	5
Digital Media	15.5%	19
Software	32.7%	41
Other	19.6%	24

Source: Hothouse Survey, 2007

An analysis of the participant companies by industry sector reveals that the largest area in which Hothouse participants are involved is software (both software services and software application products), with information and communications technology (ICT) in second position. The industry with the least activity is engineering. The main industry sectors listed as 'other' included marine technology, financial services, market research, consumer electronics & software, training and auditing, and translation.

Feedback from some companies (Hothouse Survey 2007 and company discussions in March-April 2008) highlighted common motivations and contributions for many participants:

- Peer to peer contact and environment – this peer networking was highly valued and deemed the most important factor for the majority of companies, although not always anticipated as such when enrolling for the Hothouse programme. A common view expressed was that starting a business is a 'lonely' and 'isolated' activity. The opportunity to have an interactive sharing of difficulties and robust review of business obstacles encountered (or 'cross pollination' as one company described) with other participants and with practical business experts was seen as constructive.

- The opportunity to have a serviced office space and administrative support as well as a credible business address with expert business advisors was significant. Some companies had commenced the start-up at home but the more business-like and structured environment of the incubator centre was seen as much more helpful and conducive to business progress.

- Funding by way of training grants and salary support (see paragraph on 'delivery arrangements). For many participants pursuing their enterprise vision meant leaving a secure salaried job. In practical terms, therefore, the subsidisation provided eased the personal financial burden for them over the year long programme.

Many other factors influenced the motivation of participants. The predominant background of most participants was technical and there was a realisation of the need to understand better the full range of business functions. Learning how to research markets, how to sell, how to license software etc., were issues where expert training and advice was needed. In a number of cases participants were strongly advised by state and private sector funding agencies and business advisors to go through the Hothouse process if they wished to obtain investment and grant funding for their business.

The Hothouse programme is part of a wider range of entrepreneurship development initiatives in third level technology institutions -- the 'Enterprise Platform Programmes' -- now conducted by all institutes of technology in Ireland. These are funded mainly by the Department of Education and the Higher Education Authority. In addition, all universities (there are seven universities and fourteen institutes of technology in Ireland) have established campus centres to promote commercialisation of research and new enterprise and have attracted both public and private funding. Each college or institute organises its own programme and while there are many common features (*e.g.* focus on graduate entrepreneurs, technology orientation and companies with growth potential) the programmes differ in many other respects. The introduction of these programmes, mostly over the past 10 years, has brought a new dimension to entrepreneurship policy, promotion and development in Ireland. Hothouse is generally seen as a pioneer in this field and frequently referred to by companies, mentors, investors and state development agencies as one of the leading and most successful incubators in the country. 'Very good at what they do', 'The more of Hothouse we have the better', 'Proactive, very good communicator', 'Great learning in the overall process', 'Hothouse is among the best of the campus programmes', 'Hothouse is The Benchmark in Ireland' – these are typical views expressed in feedback by VC funds, state agencies and other players. At the same time there were constructive insights on changes and policy developments that need to take place – these are outlined in later paragraphs.

Policy context

A key focus of national enterprise strategy in Ireland is to help the development of a seed bed of vibrant indigenous entrepreneurs, successfully harnessing the creativity and innovation of Irish people. Developing knowledge intensive industries and innovative products is seen as critical to Ireland's future as it strives to build new and growing enterprises and export sales.[3] As Ireland seeks to compete

in global markets its competitiveness will depend, to a significant extent, on the establishment of new enterprises that build their market position on intellectual property.

Enhancing the culture for entrepreneurship and reinforcing entrepreneurship in the education system are some of the specific platforms for a national entrepreneurship policy recommended by the Small Business Forum (2006) and Forfás (2007). This is a core focus of Hothouse.

The national development agency, Enterprise Ireland, has set out clear targets that reflect the national objectives in entrepreneurship and SME development (see Box 1.4).

Box 1.4: Targets set in the Enterprise Ireland Strategy: 'Transforming Irish Industry 2008 – 2010'

- €4bn in new export sales by 2010.
- Increasing to 800, the number of client companies engaging in meaningful (€100 000 spent annually) in-company R&D.
- 55 companies engaged in significant in-company R&D (€2m spent annually).
- 200 new high potential start-ups, 100 of which are to be in regions outside Dublin
- Growing companies of scale: 225 companies achieving annual global sales of €20m and 635 companies achieving global sales of €5m.

Source: www.enterprise-ireland.com

Campus incubators are seen as an important element in the overall national policy framework. While the national aspiration for successful incubators is clear, the national policy on campus centres and incubators is fragmented and not clearly expressed in one policy document. There are different players with different interests and also differing views amongst the policy players. Some people in the education sector, for example, see the role of incubators as mainly education and training and commercialising of research. The national development agency sees these centres primarily as a source of high potential start-ups and tailors funding support to individual companies in the incubators accordingly. Within the national enterprise policy framework, campus incubators, including Hothouse, are expected not just to educate and train entrepreneurs but to contribute to the achievement of these national targets and in particular to the emergence of high potential start-ups (HPSUs)[4].

The PDC and the Hothouse Programme have been pioneers in promoting new technology and growth companies, with their programmes stretching back over 20 years. The programme is consistent with national policy aims as outlined above and promotes new enterprise, encourages export oriented enterprise and contributes to the exploitation of university based knowledge and intellectual property.

Description of initiative

Objectives

The PDC has the mission to stimulate growth by helping entrepreneurs to start and build their known businesses. With Hothouse this has evolved to promoting a cohort of new technology oriented and knowledge based businesses that will grow and build their ventures in Irish and international markets. This is consistent with the goals of the DIT and the Bolton Trust. The DIT has a strategic objective of being 'closely allied with and responsive to industry within its future vision' ('DIT

Strategic Plan: A Vision for Development 2001 – 2015') and lists among its goals 'establish a strong industry centre on campus with incubator and near-market units and with links to research initiatives/industry'. It refers to a number of key hubs at its core including 'incubation facilities to support innovation and start-up enterprises leading to technology transfer and spin-off companies'. Hothouse is described as an important component of this future vision (DIT, 2008).

In a wider context the Irish government has the aspiration that Ireland should be among the leading entrepreneurial countries in the world, characterised by a conducive environment for entrepreneurship and the innovative nature of its entrepreneurs. Again Hothouse is a contributor to those goals and to strengthening strategic technology sectors.

Activities

The Hothouse programme is a year-long programme that provides:

- A base in the dedicated incubator with broadband and support/office facilities to conduct business and with on-site training and regular coaching from the PDC team.
- Training workshops to improve capabilities in key business areas (strategy planning, finance, IP, selling, marketing, raising money, presentation skills, building the management team and team building with the Hothouse group). A group of 10-12 expert trainers deliver 24 days training (2 days per month), using real life case studies and sometimes on offsite residential weekends.
- Mentoring by experienced business people: 10 sessions given to Hothouse companies (9 individual sessions and one with a mentor panel of four people).
- Access to a network of experts and entrepreneurs including R&D expertise and commercial evaluation help. Counselling by a successful entrepreneur from the PDC network.
- Finance clinics: help in raising investment finance.
- Market research clinics: done with individual companies as well as group training.
- Technical consultancy on intellectual property rights issues, patenting, licensing.
- Business plan evaluation: done typically by two experts twice a year.

The 'soft' areas of informal networking, sharing experiences and learning by company participants are a highly significant element of the overall Hothouse process. This interaction, where all learn from each other and have to defend their viewpoint and answer their peers, is supported by the centre management and wider network of Hothouse partners and alumni. While the primary focus is on enterprise and business development, participants also have the opportunity to gain a post-graduate Diploma in New Business Development on completion of the Hothouse programme.

Since 2001 the Hothouse programme has supported over 200 firms at the start-up and early stages of their development. Many participants have grown successful businesses in international markets and have in turn become part of the network of advice and support to new participants in Hothouse.

The PDC and its programmes form part of the regeneration of the Dublin docklands area. In attracting new start up businesses this has created new employment and economic contribution in the area.

In summary, Hothouse's year-long programme provides knowledge-intensive start-ups with the expertise, networks and tools they need to develop highly successful businesses capable of competing in global markets. Hothouse invites competitive applications for up to 32 places per year on two programmes. Through the activities and networks outlined above, Hothouse has contributed significantly to the new group of technology and knowledge based companies that have emerged in Ireland in recent years.

Delivery arrangements

The PDC's Hothouse Programme offers participants incubation space and facilities for one year. It gives participants the opportunity to base themselves alongside fellow entrepreneurs, business experts and others who understand the start-up process. The Hothouse Incubator offers participants a source of ideas and interactive contact with fellow entrepreneurs from which their businesses can thrive. Participants have access to full broadband communications, professional reception services and meeting rooms, along with a range of office facilities.

The centre provides office space for all Hothouse participants and, in addition, meeting rooms in a range of sizes, from a large training room which can hold up to 100 people and is ideal for product launches, training seminars etc, to the more intimate meeting rooms which hold between 6-8 people and are ideal for meetings, interviews etc. Audio visual equipment is available. The Innovation Park has own-door office units to rent that range in size from 150 – 4 000 square feet.

All participants receive a training grant of €6 600 and selected participants (essentially those that can demonstrate a better prospect of growth and exports) receive, in addition, a salary contribution of 50% of their previous year's salary, subject to a maximum of €38 000. This latter support was seen by some participants as crucial in allowing them to commit more time to building their new business.

Contributing industry partners on PDC programmes include, for example:

Deloitte & Touche, one of the world's leading professional services firms, delivers workshops and counselling to PDC participants in the area of financial strategy & management. LK Shields (www.lkshields.ie) deliver workshops and counselling to PDC participants in the area of legal issues. Leading firms of European patent attorneys and community trademark attorneys (with specialist knowledge of all technical disciplines ranging from electronics and software to chemistry and biotechnology) deliver workshops and counselling to PDC participants in the area of patents and licensing.

International Partners: The PDC has built links over the years with a number of European organisations. For example, partnerships with universities or development agencies in various countries: Spain, France, Italy, Germany, Finland, United Kingdom and Sweden. Both Enterprise Ireland and the DIT see the development of such international links as an important strategic element of their campus and incubators programmes.

Budget

Funding for Hothouse is provided by the Department of Education and the national development agency, Enterprise Ireland (the EI funding is mainly through the 'Commercialisation of R&D –

CORD' grants provided to selected participants). Table I.12 shows funding for the period 2000-2003. Private sector representatives contribute time and support to elements of the programme at their own cost.

Table I.12: Budget and funding of Hothouse 2002-03

Total Funding Allocated	Total Number of Participants	Average Cost per Participant
€ 1.485 m	90	€ 17 145

Source: TSR Review, 2005

Currently the PDC management reports the annual budget for the programme at €535 000 per annum *i.e.* €267 500 per programme with each programme supporting 16 entrepreneurs (€16 718 per participant).

Impact of the initiative and evaluation evidence

The marriage of practical business development training, mentoring and counselling, incubation space and support facilities and funding for new start-up and early stage enterprises has helped to build a new community of knowledge based enterprises and generate new employment, exports and economic contribution. Equally important has been the network of expertise and partners surrounding the Hothouse (and other PDC programmes) and their continuing commitment and support for the programme. The PDC has been creative in promoting and publicising both the programme and the participants (*e.g.* through award schemes, focused PR and meetings with investors). All of this has contributed to fostering the environment for new entrepreneurship in Ireland.

Ireland is an entrepreneurial country (Global Entrepreneurship Monitor, 2006). GEM research shows it ranks 3rd highest in the EU in terms of early stage entrepreneurial activity and similarly 3rd highest in the OECD in terms of high expectation early stage entrepreneurs. Hothouse is generally perceived as contributing to that achievement. At the same time recent trends in new business formation show a decline in the number of early stage entrepreneurs (see Table I.13) thus highlighting the need for continued enterprise policy efforts in building on the progress of Hothouse and other successful policy initiatives.

Table I.13: Ireland's new business entrepreneurs 2001 -2006 inclusive
(% of the adult population)

Year	New business entrepreneurs
2006	2.93
2005	4.73
2004	3.59
2003	3.76
2002	4.20
2001	4.88

Source: GEM 2006.

At a general and specific level there are assessments and evaluations that assess the type of activity being undertaken by the Hothouse Programme. Forfás (national policy review agency) has highlighted that the Enterprise Platform Programmes run by the Institutes of Technology, 'are becoming an increasing source of high potential start-up businesses' (Forfás, September 2007) and recommends that public funding should be continued for the establishment of entrepreneurship centres linked to universities. In that context the Hothouse Programme and work of the PDC – the largest

training and incubation programme within the Enterprise Platform Programme framework -- can be seen to be broadly consistent with and supporting national entrepreneurship policy. GEM research (GEM, 2006) validates this viewpoint, pointing out that feedback from entrepreneurs highly praises the Enterprise Platform Programmes. Similarly the Small Business Forum, (SBF, 2006) has recommended to government that 'reinforcing entrepreneurship in the education system' should be one of the three main strands of national entrepreneurship policy. OECD studies indicate that management development training in the first three years after start-up can cut failure rates by almost half (OECD, 2003). In a review of the higher education system in Ireland the OECD recommended that all higher education institutions 'should have business incubator units or other facilities to encourage the exploitation of research through spin out companies' (OECD, 2004). The intensive training and support by Hothouse can therefore be seen to be fully consistent with national policy and policy recommendations and directly focusing on this significant challenge for start-up businesses.

In a review of the sources of high potential start-ups over the period 2003 – 2007 approximately 23-25% of all HPSUs (360 companies in total) were participants in the Enterprise Platform Programme including Hothouse (Enterprise Ireland, March 2008). Other factors influenced the development of these companies, such as the advice and financial support of Enterprise Ireland, however this indicator confirms that Hothouse and similar programmes are contributing to national enterprise targets. Hothouse management advises that 162 companies (74%) out of a total of 218 companies that participated on their programmes continue to survive and trade. In some cases entrepreneurs have changed their business – about one third have moved on from their original project concepts to new business profiles.

Policy gaps and policy evaluation

In looking at the impact of Hothouse and evaluation evidence there are significant gaps in the policy environment that Hothouse operates in. Campus centres and enterprise development programmes now exist in all third level institutions in Ireland. There is a broad consensus on their role and benefit in enterprise policy. But national policy is fragmented (referred to in various documents and often in an unconnected way) and largely programme driven as opposed to policy driven. The primary focus is on programmes and operational matters rather than the long term strategic objectives of such programmes and the essential roles, resources and responsibilities of players. To some extent campus centre policy has fallen between the 'two stools' of education and enterprise policy. There are different views on the expected results from Hothouse (and other campus centre programmes). The DIT sees Hothouse primarily as an education and training programme and this is reflected, for example, in the single formal deliverable at the conclusion of the programme being a well developed business plan. Enterprise Ireland expects harder results: that 25% plus of all entrants to the programme (and similar programmes) will emerge as high potential start-ups and achieve measurable progress in employment, sales and exports within a three year period. Other players see successful companies as being an important measure of impact but that equally 'failure experience should be seen as a prized possession as in the USA' (venture capital company). The national enterprise culture and environment is served by the experience gained on programmes like Hothouse *e.g.* a business project that is tested through the Hothouse process and does not succeed – it is argued -- is an equally valid outcome and should be recognised as such. These outcomes are not necessarily mutually exclusive but they point to the desirability of having a well articulated national policy and stated objectives and the need for common understandings on the role of campus centres and programmes, all of which are closely coordinated with national and regional development policies. More 'stitched up thinking' on policy is needed, according to the GEM National Coordinator for Ireland. It should be noted that Enterprise Ireland is in the process of reviewing policy needs and proposing policy development in this area.

Hothouse has no systematic and regular review of policy and progress that is published and discussed with responsible players. Much of the reporting and review has been driven by funding applications. DIT recognises that evaluation has been 'ad hoc and needs to be more streamlined and structured'. Again this is an important issue for national policy. Developing better policy will be informed and underpinned by more structured evaluation of policy and sharing of policy assessments and successful practice. Some comparative assessment and benchmarking of campus centre programmes may be beneficial.

These are important considerations for the future development of Hothouse and other campus centres in Ireland. Notwithstanding the national policy vacuum it is clear that Hothouse has delivered concrete outcomes.

Views of the participating companies

The Hothouse survey 2007 gives in-depth and specific feedback on the impact of the various Hothouse programmes on individuals and their companies over the years. In response to the question *'Did Hothouse make a positive contribution to you and the development of your business?'* there was a unanimously positive reply – all individuals expressed the view that they had personally benefited from the programme and they had progressed with their business concept and business development. The programme assisted them in gaining support from state agencies and funding sources as well.

Individual elements of the programme were rated by participants as shown in Table I.14 (participants were allowed to refer to more than one element) and it is notable that the three elements of training workshops, entrepreneurial environment and financial support received substantially more mention than other elements:

Table I.14: Elements of Hothouse programme seen as beneficial by participants

Programme element	Mentioned as beneficial % (No. of companies)
Workspace	43.9 (54)
Entrepreneurial Environment	69.1 (85)
Mentoring	46.3 (57)
Training Workshops	74 (91)
Networking	50.4 (62)
Financial Support	67.5 (83)
Other	10.6 (13)

Source: HOTHOUSE Survey 2007.

Employment

By 2007 the number of jobs created by companies that took part in all the Hothouse programmes was a total of 750 jobs of which 524 were full-time and the remaining 226 were part-time positions. This gives an average of 4.2 full-time employees and 1.8 part-time employees per company, showing that the bulk of the companies were still relatively small. However this is not significantly out of line with the scale of SMEs in Europe. European SMEs have an average staff of 6 people (High Tech Federation, 2005). To some extent this also reflects the stage of development on completion of the Hothouse programme as shown in Table I.15

Table I.15: Stage of Business Development on Completion of Hothouse Programme

Stage of development	Percentage of companies (No. of companies)
Developed Business Model	47.5 (57)
Commercialisation	31.7 (38)
Steady Level of Growth	16.6 (20)
High Level of Growth	1.7 (2)
Exporting	2.5 (3)

Source: Hothouse Survey 2007.

The nature of some participating businesses (*e.g.* pharmaceutical product development) means that the early development life cycle is much longer than one year and in some cases it extends over many years. Nonetheless the overall view emerging from participants was that measurable progress had been achieved over the duration of the programme.

Table I.16: Sales Levels of Companies on Hothouse Programmes

Sales	Percentage of companies (No. of companies)
0 - €100 000	57.3 (71)
€100 000 - €250 000	15.5 (19)
€250 000 - €500 000	12.9 (16)
€500 000 - €1m	9.7 (12)
€1m - €2m	3.2 (4)
€2m +	1.6 (2)

Source: Hothouse Survey 2007.

Over half (57.3%) of Hothouse companies were generating revenue in the region of 0 - €100 000 a year. The next largest group (28.5%) were generating an annual turnover of between €100 000 and €500 000. This is divided into two groups: 15.5% in the region of €100 000 to €250 000 and the remaining 13% generating between €250 000 and €500 000. A further 5% of Hothouse companies were achieving sales of over €1 000 000 annually with 1.6% exceeding €2 000 000.

In terms of profits, 58% of Hothouse companies were not profitable, at the time of the survey. The majority of profit generating companies were at a level in the region of €0 to €50 000 annually.

Table I.17: Profit Levels of Companies on Hothouse Programmes

Profits	Percentage (No. of Companies)
Not Currently Profitable	58.1 (72)
€0 - €50 000	29.8 (37)
€50 000 - €100 000	7.3 (9)
€100 000 - €250 000	3.2 (4)
€250 000 - €500 000	0.8 (1)
€500 000 +	0.8 (1)

Source: Hothouse Survey 2007.

A midterm evaluation of the programme (2005) was conducted some years ago. It looked at all the Enterprise Platform Programmes (including Hothouse) and this evaluation combined with the survey of participants by Hothouse (2007) and feedback from a cross section of Hothouse companies and partners (see references) provide main insights outlined below.

Strength of the initiative

Hothouse management has established a service oriented 'can do' culture and delivery process that is widely respected and appreciated by companies and other commentators. The style of management and training is not seen as academic but business like and relevant to the reality that start up companies must deal with. The attention to detail on many small issues by management is described as a significant element in this process. The background 'patron' presence of the Bolton Trust (The Bolton Trust is a unique and voluntary initiative by staff of a third level college in Ireland and has always sought to be innovative in its activities) provides useful advice, support and assistance to Hothouse.

The second prime strength of the programme is the level of experience and success built up over the years, complemented by the unique range of management support and support partners that actively contribute to all Hothouse programmes. At this stage Hothouse has gathered a cooperative network of experienced trainers, mentors, consultants, technical advisors (*e*.g. legal, intellectual property, software development), financiers and venture capital companies, Hothouse alumni, etc. and these are prepared to regularly give their time and support to the programme. Many continue their links with Hothouse companies after the year long programme. Hothouse has established its image and credibility with this extended network and the ongoing efforts of PDC management have facilitated and enabled this.

The general feedback from participants was very positive in the Hothouse survey, 2007. Typically 80%+ of participants were very satisfied or satisfied with the management and organisation of the programme, with their rating of the training, with networking, with mentors and all details of the programme and with the progress achieved with their business concept and business establishment.

What worked well?

The Hothouse Programme is perceived as a good example of the various state development agencies, the education sector and private sector working together to foster and help entrepreneurs based in a campus environment to research, develop and refine their business ideas and bring them to market.[5] This coordination is important to participants as it can facilitate support from different sources. Executives in the state development agencies (Enterprise Ireland, Dublin City Enterprise Board, etc.) refer clients to Hothouse and vice versa. At interview panels for selecting Hothouse participants, presentation of company profiles and various other events there is frequently joint involvement by Hothouse partners. This horizontal approach is vital to effective handling of clients and shows a constructive collaborative approach to individual entrepreneurs.

The broad structure, content and interactivity of the Hothouse programme is endorsed by most participants. The general feedback from participants is positive and generally very complimentary as reflected in these quotations:

> 'HOTHOUSE is a model that works! The programme's mix of training, mentoring, networking and financial support greatly assisted me in becoming a successful entrepreneur'
> *Ed Field, Managing Director, Digino.*

> 'Tremendously positive (about Hothouse)… catalyst for development of company… look back and wonder would company have ever started if not for Hothouse'
> *Dr. Ivan Coulter, Chief Executive Officer, Sigmoid Biotechnologies Ltd.*

> 'Hothouse made a huge difference to us… people to network with every month… firm believer in getting skills if you don't have them… they taught me how to sell …'
> *Philip Martin, Managing Director, Cora Sytems Ltd.*

Where suggestions for change were made by participating companies they tended to refer to operational refinements rather than fundamental strategic changes to the Hothouse programme.

The involvement of real life entrepreneurs, for example, as mentors and consultants, in special lectures and as advisors (sometimes drawn from the alumni network) was seen as 'very enriching'. Using people who could talk about the difficulties they had encountered and how they overcame them was critical in influencing the thinking, creativity and behaviour of Hothouse participants.

The workshop session with other participants where the 'slicing and dicing' - as described by one company - of one participant company per month is undertaken and seen as valuable and helpful to all participants. This has helped companies in their market focus and awareness.

A notable strength is the 'word of mouth' that has generated new applicants for Hothouse programmes. This feature combined with informal public relations at no cost has been effective in maintaining a flow of interested candidates.

What was innovative?

The management of the programme have been innovative in regularly promoting and publicising the Hothouse brand and programme. They publicly launch the participants at a high profile public event on concluding the programme. This type of event has been combined, for example, with an award scheme (funded by the Bolton Trust) to which a wide cross section of people are regularly invited. In addition to all those involved in the programme, politicians, press, banks, state agencies, academics, etc. are invited and the format of such events has been newsworthy and entertaining. Successful alumni members are invited to speak at such events and this conveys an atmosphere of success and encouragement.

Individual companies have praised the level of free and widespread publicity and public relations that they have obtained through initiatives by the Hothouse management. This has been a feature that they welcomed and also brought their own attention to the need for active publicity and public relations work as they seek to grow their businesses.

Venture capital firms have commended the 'pitch' made by many Hothouse companies at investment seminars and conferences. The professional quality of presentation, the description of the market opportunity and the development of business plans have measurably improved in Ireland over the years and Hothouse has been at the forefront of this progress, according to some VC firms.

Reaching out to non-DIT graduates – making places available to good candidates from regions in the west of Ireland as well as international participants – this flexibility is deemed responsive by participants.

As previously stated, the scope of the partners network and the fostering of their continued involvement have also been actively developed and innovative.

Reasons underlying success

The primary reasons for success, according to the programme manager and other commentators, lie in five main areas:

- Client service and culture: Responsiveness to participants and a client service culture and orientation. This involves great attention to detail on all aspects of the programme.

- Alumni network: The committed and innovative support of the alumni network. 'Word of mouth' is a major factor in encouraging new participants to join the programme. The practical knowledge of people who have already built successful businesses has been a valuable guide for participants.

- Mentors and trainers: Mentors who have been able to advise on business and lifestyle issues and trainers who are experienced and practical.

- Partnership network: The level of partnership and credibility built with diverse players (*e.g.* state agencies and industry partners).

- Funding provided: CORD grants by Enterprise Ireland plus the joint working between Hothouse management and such state agencies.

Weaknesses of the initiative

The midterm review and other reports and discussions point to some issues that might be seen as weaknesses. However it should be noted that some commentators saw the same features as strengths of the programme. The points are drawn from the overall review of the Enterprise Platform Programme and do not necessarily refer directly to Hothouse. However they are included here as they are part of the environment within which Hothouse must operate and they represent significant issues for consideration. The views below are outlined under policy, role of colleges and operational matters:

Policy

- Ireland needs a national brand and national policy for campus centres and incubators, better consistency in specifying the content and procedures of programmes based on successful experience and practice and a policy steering group to overview implementation and progress.

- This policy should clarify the purpose, goals and expected results from campus centres. The differing views and expectations within education policy *(e.g.* 'Hothouse is a training programme') and enterprise policy (*e.g.* 'Campus centres and programmes should be first and foremost generators of high potential start-ups') should be discussed and reconciled. Campus company programmes that are 'purely educational are questionable and poor value for money' and should not have enterprise policy funding allocated to them is a view expressed by some commentators. In brief, the understandings on the role of campus centres like Hothouse in generating high potential start ups should ideally have a common dialogue and consensus.

- Evaluation procedures (and adequate resources to properly undertake this work[6]) should be built in from the start in this policy and the evaluation regularly conducted.

- The funding of Hothouse (and similar programmes) is currently approved and renewed on an annual basis. For the strategic development of such programmes and in order to enable better planning and tenure of structures and management, the funding should be assured for a longer period (*e.g.* 5 years). Such a process can have annual performance measures built in.

- Policy should address significant gaps in the participation in campus centres *e.g.* the low level of female participation in Hothouse and similar centres at a time when 60% of all third level graduates are female. Only 11% of HPSUs supported by Enterprise Ireland in the period 1999-2006 had a woman in the management team (Forfás, 2007) so the issue of female participation in enterprise development programmes is wider than the scope of individual programmes like Hothouse. While individual programmes can make appropriate efforts on issues like this there should preferably be policy guidelines to assist those efforts.

- Policy should establish a single information site on all campus incubators where information on companies and activities is accessible. Better communication about Hothouse, Genesis, Nova, M50, Sligo Institute of Technology, etc.

Role of Colleges

- The Enterprise Platform Programme organised by the institutes of technology and funded by the Department of Education has three streams of activity: R&D, training and enterprise. The institutes are engaged in a substantive way with the first two but less with enterprise. In many instances – it is suggested by some commentators – the colleges would prefer to allocate funding to R&D instead of enterprise activity with the consequence that 'enterprise' is funded through residual budget.

- Campus centre programmes are often not fully integrated into colleges or adequately 'owned' by colleges. External consultants are used to deliver programmes with the result that the intellectual property of programmes like Hothouse is not evolving within the core thinking and ethos of colleges. This issue needs to be balanced with the widespread view by companies in Hothouse that they value the real life and non-traditional academic approach in delivering the programme.

- Heads of colleges are, in many instances, not fully engaged with or committed to campus centres. How colleges intend to commit to, manage and develop their centres and programmes should be a significant factor in determining the allocation of funds.

- The whole notion of awarding diplomas to people on campus start-up programmes reflects the way in which enterprise activity is being 'bent' to fit into the academic sphere and is a view that colleges need to consider and address or at least explain in policy.

- The Institutes of Technology should play a more active role across all their faculties in promoting the programmes. Hothouse could be more 'visible' to different sections of DIT.

Operational Matters

- A pre-Hothouse programme that gives a broad introduction to starting a business might be of benefit to selected candidates prior to them engaging in the more intensive training and incubation programme. This process would give some thinking time to potential participants on their commitment to the programme and improve filtering of candidates while still not excluding them from seeking participation.

- Similarly the termination of the programme at the end of one year should not be abrupt *i.e.* withdrawal of financial support and office/space facilities. A staged reduction might be more appropriate as companies are still at a vulnerable stage of their development on completion of the programme and a 'step down' process would put less pressure on them.

- A stronger project management approach should apply to all company participants with more structured hands-on and 'clinic' approach.

- With two separate funding sources for participants (training grant from Department of Education and salary grant from Enterprise Ireland – the latter only for selected participants) a single application process would be beneficial.

- Hothouse is presently located away from the DIT campus (DIT has 19 different locations spread around Dublin for its constituent colleges and faculties). This has both advantages and disadvantages according to feedback from Hothouse companies. By being based in an industrial environment it makes the environment business-like and not academic. This was seen as positive. The down side of not being close to DIT colleges is that Hothouse participants may miss out on useful links that they could develop with experts within the DIT structures. There is also poor identification with DIT. To address this it was suggested that some Hothouse training sessions might take place in DIT premises.

- More information and access to initial funding at the early stage – from Enterprise Ireland, from business angels, etc. -- is seen as more relevant than VC funding.

- The inherited legacy from previous programmes might be better documented – 'best tips and tricks of the trade'. This would, for example, cover suppliers of products and services to small businesses. Survey participants at the end of each programme and pass on so that they can save time and money, was a view expressed by some companies.

- Improve the physical facilities in Hothouse – only small investment needed to upgrade.

- Official 'old boys network' on 'where are they now' news might be beneficial in building business interaction and links

The above points are not the majority views of Hothouse companies and others but provide useful insights on areas for consideration and for action.

Obstacles or problems that emerged during the design or the implementation of the initiatives

In the early phases of the Hothouse programme the prime issue was obtaining the essential funding from the two main sources of support. As progress and results were achieved this has grown into better support partnership. Other obstacles or problems that arose were largely administrative and operational issues that the programme manager could, over time, successfully resolve or address. Examples of such issues are as follows:

- Venture capital companies are reluctant to engage with early stage companies on the programme – they were seen as too early in their development cycle for VC funding. Attracting VC funding was, according to one participant, like 'reaching for the stars'. The focus of the programme might concentrate more on maximising other sources of funding – for example, business angels, various sources of grants, and invoice discounting.

- More e-enabled training sessions so that material could be downloaded and all generic training to be provided at the start of the programme was sought.

- More networking with participants, potential financiers and state agencies was cited by a minority as an issue.

- More sector knowledgeable or technical mentors were requested – many participants have a solid technical background and sought similar familiarity from mentors.

In all such cases it was possible to take action to deal with reasonable or balanced requests.

Potential transferability

What are the main lessons for Wales and places similar to Wales?

Hothouse provides a valuable learning experience and useful insights into policy and operational issues for policy makers, third level colleges and others concerned with the promotion of new technology enterprises. The overall programme is relatively well defined and the concept proven and well established at this stage. Main lessons that may be drawn from the Hothouse process and experience are as follows:

- The wider policy environment for campus incubators and campus programmes is an important central issue for guiding and supporting the establishment and development of successful campus incubators. Hothouse should therefore not be considered and looked at from a narrow operational perspective only or in isolation from the wider policy environment.

- Linking and coordinating enterprise policy and education policy is important. This requires a process of effective policy dialogue, broad horizontal consensus on purpose, objectives and expected outcomes of incubators and campus enterprise programmes, and joint implementation.

- Ideally a Hothouse model should develop within the framework of a stated national policy on campus incubators and campus enterprise programmes. This policy should establish concrete objectives and robust evaluation procedures, based on best international practice and established from the start, as well as ensuring essential resources to implement policy and evaluation.

- In the information and knowledge society of today, entrepreneurial development and enterprise activity by third level colleges are a crucial part of the national enterprise policy and enterprise goals. This demands thinking beyond the traditional borders of education and enterprise policies. Third level colleges need to be committed not just to educating and training but to building successful new enterprises, if they are to establish credibility with participating entrepreneurs.

- The role of management and the operating culture and service ethos inculcated by the incubator management are central to success. A simplistic view of the operations of Hothouse shows many standard procedures (*e.g.* training, counselling, and networking) that appear easy to replicate. However real effectiveness in implementation will be determined by the client service, human interaction and experience sharing cultivated amongst all

participating companies and with campus management, alongside good management planning and systems.

- Campus centres need close involvement with national local development agencies as well as a wider network of partners in the public and private sectors. Ideally the approach to entrepreneurs and campus companies is coordinated with development agencies with the aim of delivering a joint programme of support, encouragement and guidance.

- The quality of mentors, counsellors and other advisors is important for participating companies. In general companies in incubators seek real life experience rather than academic theory. The theoretical foundation of management techniques and methods recommended needs to be delivered in a practical way, preferably by people with business experience.

- Providing good quality office, administrative facilities and technology guidance (*e.g.* software licensing) and essential funding support are key components of a successful incubator model aimed at technology based companies.

Hothouse management have shared their experiences with other institutes and incubators in Ireland and are open to discussion with similar groups overseas. Indeed there is a strong desire expressed by various partners to the Hothouse network (including Hothouse companies that export to the UK) to see international links develop. This may lead to partnership or twinning arrangements. The proximity of Wales might enable the full network (*e.g.* industry partners, alumni network, mentors) to potentially become involved in any such experience sharing or transfer process and in general most commentators were favourably disposed, subject to time and cost, to this concept.

Considerations for successful adoption in Wales and places similar to Wales

Important considerations at the outset are the establishment of the policy framework referred to above and main funding sources. The Hothouse programme requires significant ongoing funding but its concrete results, as demonstrated by the progress achieved, make it a value for money proposition. The challenge of promoting new growth enterprise – especially technology oriented companies with export potential – requires dedicated policy and focused programmes. A 'Hothouse model' can assist that challenge.

The possibility of exploring partnership or twinning arrangement with PDC and DIT to facilitate adoption in Wales may be worth considering as a first step in examining transfer prospects. Similarly the involvement of some of the Hothouse network (*e.g.* alumni, industry partners) in examining and proposing approaches for adoption in Wales could also be beneficial.

In order to understand and consider the underlying elements for success it would be desirable to instigate a process of dialogue and experience sharing in the first instance. The Hothouse management and network of partners are open to considering and discussing all such proposals.

For further information

Ms Bernadette O'Reilly
Centre Manager,
Project Development Centre,
Docklands Innovation Park,
128-130 East Wall Road, Dublin 3
Ireland

Telephone +353 1 2401300
Fax: +353 1 2401310
www.pdc.ie
www.dit.ie

Ms Margaret Whelan
Head of Strategic Planning, Development
and Corporate Relations
Office of the President,
Dublin Institute of Technology,
Aungier Street, Dublin 2
Ireland
Telephone +353 1 402 7011
Fax: +353 1 4023393
www.dit.ie

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Breakout Gaming Concepts, Andrew Deegan, Managing Director, Breakout Gaming Concepts, Docklands Innovation Park, 128-130 East Wall Road, Dublin 3, Tel +353 1 4498114, www.breakoutgamingconcepts.com

Cora Systems, Philip Martin, Managing Director, Cora Systems Ltd., Carrick on Shannon, Co. Leitrim, Tel +353 71 9622078, www.corasystems.com

Dublin Business Innovation Centre, Des Fahey, Chief Executive, The Tower, TCD Enterprise Centre, Pearse St., Dublin 2, Tel+353 1 8422587, www.dbic.ie and former chairman of the Irish Venture Capital Association (IVCA)

Dublin City Enterprise Board, Eibhlin Curley, Assistant CEO, Dublin City Enterprise Board, 5th Floor, O'Connell Bridge House, D'Olier Street, Dublin 2, Tel +353 1 6351144, www.dceb.ie

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Dublin Seed Capital Fund, Des Fahey, Director (see Dublin Business Innovation Centre)

Enterprise Ireland, Dr. Michael Brougham, Manager Enterprise Prospecting and Preparation, Entrepreneurship and Regions Division, Enterprise Ireland, Athlone, Co Westmeath, Tel +353 90 6487142, Mobile +353 87 2798663 and Kevin Sherry, Manager, International Services Division, Dublin 4, Tel +353 1 8082000

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MG Business Consultants, Mary Goulding, Mentor and Consultant to Hothouse Programme, 'The Hollies', Glen of the Downs, Co. Wicklow, Tel +353 86 2454126, mgoulding@eircom.net

NCB Ventures, Michael Murphy, Chief Executive, 3 Georges Dock, IFSC, Dublin 1, Tel +353 1 6115611, www.ncb.ie

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The Bolton Trust, Rea O'Neill, Chairman, The Bolton Trust, Dublin Institute of Technology, Tel +353 1 4023133, www.theboltontrust.com

Trinity Venture Capital, John Treacy, Chief Executive, Beech House, Beech Hill Office Campus, Clonskeagh, Dublin 4, Tel +353 1 2057700, www.tvc.com

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ENDNOTES

1. The Dublin Institute of Technology's origins go back to 1887 and the establishment of technical education in Ireland. The DIT Act 1992 provided for the formation of the Dublin Institute of Technology by bringing together six colleges of higher education dealing with applied arts, built environment, business, engineering, science and tourism and food. These colleges were recognised as centres of excellence in their areas of specialism and their expertise formed the nucleus of the faculty structure within DIT today.

2. The Hothouse Survey, 2007, was conducted by the PDC management and shows feedback from ca. 125 participants in 13 Hothouse Programmes organised over the period 2001 – 2007.

3. Speech by Minister of State at the Department of the Taoiseach, Mr. Tom Kitt, 'Docklands Innovation Enterprise Awards' 23 Feb 2006.

4. HPSUs are defined by Enterprise Ireland as companies that have the potential to reach annual sales of €1 million, have growth and export potential and at least 10 full-time jobs within three years of start-up.

5. Speech by Mr. Tom Kitt. Minister of State at the Department of the Taoiseach.

6. The OECD report 'OECD Framework for the Evaluation of SME and Entrepreneurship Policies and Programmes' quotes research that states 2%-5% of the budget of a programme should be made available for evaluation. For programmes in larger countries it is suggested that 0.5% to 1% of annual expenditure would be more usual.

NITEC INITIATIVE – SUPPORTING R&D UNITS IN SMEs (PORTUGAL)

Vitor Corado Simões
ISEG (Instituto Superior de Economia e Gestão), Technical University of Lisbon, Portugal.

The present report deals with the first phase of the NITEC programme (NITEC stands for *Núcleos de Investigação e Desenvolvimento Tecnológico no Sector Empresarial*, *i.e.* Research and Technological Innovation Teams in Companies). Launched by the Regulatory Decree nº 441/2003, of 28 May, the NITEC incentive system was in force until late 2006, when it was closed to further applications, since the Third Community Support Framework 2000-2006 was coming to an end. The system has been re-launched, with some changes, in November 2007, under the new Competitiveness Factors Operational Programme (CF Programme) of the 2007-2013 National Strategic Reference Framework (NSRF). In the new policy context, NITEC has a companion programme, on R&D Centres, to a large extent aimed at capitalising from, and leveraging, the initial NITEC initiative. The managing organisation will no longer be the Innovation Agency (AdI); all company incentive systems under the CF Programme will be managed by IAPMEI, the Institute for Supporting Small and Medium-sizes Enterprises and Investment. Since the first call for proposals under the 'new NITEC' was closed by the end of January 2008, our analysis will be focused on the first phase of the programme, roughly covering the three and a half years from May 2003 to December 2006.

Rationale for the initiative

Problem to address

The launching of the NITEC programme was aimed at addressing a key problem in the National Innovation System (NIS) in Portugal: the low level of in-house technology and innovation capabilities in Portuguese firms. By 2003, when the programme was launched, Business Enterprise R&D expenditures (BERD) corresponded to only 0.26% of GDP, and amounted to only about one third of total R&D expenditures. Besides being very far away from the so-called 'Barcelona objectives' of reaching an R&D to GDP ratio of 3% (two thirds of it being undertaken by companies), it was felt that the low levels of R&D expenditures as well as the weak in-house capabilities seriously undermined Portuguese firms' response to the increasing competitive challenges stemming from globalisation. An additional problem was the weakness of the linkages among the various players in the NIS. Companies' low in-house R&D capabilities had been identified in various policy analyses as an important hindrance to a stronger co-operation among the various actors, namely between Universities and Scientific and Technological (S&T) organisations, on the one hand, and Industry, on the other.

Policy context

Although the idea to implement a programme to promote the creation and/or consolidation of in-house R&D capabilities in companies had been voiced earlier (at least informally) by some policy-makers, to understand the policy context behind the launching of the NITEC programme, one need to look at the broader political landscape in 2002-2003, when the programme was launched. The right-wing government that emerged from the 2002 elections decided to undertake a significant change in the Operational Programme for the Economy (POE), which was part of the Third Community Support Framework 2000-

2006, re-labelling it as PRIME, the Specific Programme on the Modernisation of the Portuguese Economy. To foster economic growth, it was decided to design and implement the Programme for Productivity and Economic Growth (PPCE), launched in July 2002, focused on the liberalisation of the economy and on promoting productivity.

PPCE also identified technology and innovation as important drivers for improving productivity and enhancing the country's international competitiveness. It was felt that increasing international competition required a new approach, breaking away from price as a competitive weapon and fostering productivity. This demanded a new strategic approach from Portuguese companies, while entailing a significant upgrade in their innovative competences. In fact, a need was felt to promote soft capabilities, namely R&D capabilities, as an instrument for enhancing competitiveness. The PPCE was associated with the launch of a batch of five programmes under PRIME, aimed at fostering entrepreneurship, cooperative R&D and innovation: NEST (New Technology-based Enterprises), for the creation of technology-based firms; QUADROS (Young Executives), for the recruitment of young graduates for SMEs; IDEIA (R&D consortia), supporting R&D consortia between companies and S&T organisations; SIME Inovação, fostering innovative investments by business enterprises; and NITEC, for the creation of small R&D teams in companies.

Other relevant aspects of the policy context behind the launching of the NITEC programme include the following:

- The European policy, namely the move towards reaching the above-mentioned 'Barcelona objectives': the encouraging of companies R&D expenditures was essential to approach (not to reach, since the target had been put too high for Portugal's capabilities) those objectives, especially in a period of tough control of public expenditure;

- The need to strengthen the relationships between companies and S&T organisations, namely in the context of the boost of University/Industry relationships mentioned by PPCE; and

- The increasing rate of post-graduate unemployment: the creation of NITECs was also envisaged as an instrument to fill the gap between the commitment required for post-graduate education and the scarce employment opportunities for these people in the labour market.

Description of initiative

Objectives

According to the Regulatory Decree nº 441/2003, of 28 May, which established the NITEC programme, its main objectives are the following: (1) to support the creation of in-house R&D competencies in Portuguese companies as well as to encourage companies to enhance such competencies; (2) to support company efforts aimed at improving design and process capabilities, as well as the 'mastering' of foreign technological knowledge; and (3) to promote company capabilities to develop technologically innovative products and solutions. More specifically, the key objective was the creation (or formalisation) of small R&D groups in companies which had already shown a proclivity to engage in R&D activities or which were undertaking R&D activities on an informal basis. The existence of a dedicated R&D group was expected to make companies more aware of the opportunities stemming from carrying out R&D activities, therefore leading to a steady development of in-house R&D capabilities. NITECs would contribute to enhancing companies' absorptive capabilities as well as their product and process design and adaptation competencies. They were also envisaged as an instrument to develop and strengthen internal and external linkages; from this perspective, NITECs were not just an instrument of technological but also of organisational innovation.

Activities

A NITEC was defined, according to a project-based action plan, as a small, permanent team of people, fully dedicated to technology 'mastering' and development activities; these activities were expected to lead to the design of new products, processes and/or systems or to the introduction of significant improvements in existing ones. For financial support purposes, a NITEC should have a maximum of three elements, although companies might establish, at their own expenses, a NITEC with more staff.

Company specific eligibility conditions included namely the following: to pursue the investments undertaken in connection with the NITEC for at least five years, while maintaining its location; to demonstrate appropriate technical and managerial capability, having the defined action plan in mind; and to show that there was no R&D team or department in the company beforehand. According to a promotional document delivered by AdI in 2004, to launch a NITEC "a company should have undertaken an internal strategic reflection which grants innovation and R&D effort a priority role".

Specific conditions were also defined concerning NITECs eligibility. These comprised, besides the above mentioned project-based action plan, a minimum duration of two years, and the confirmation of additional financing to carry out the activities envisaged.

Delivery arrangements

Support was delivered through a grant corresponding to 30% of eligible expenditures, up to a maximum of EUR 200 000. The basic support rate might be increased by 10% in the following cases: location in less advanced areas; the promoter being a SME; and carrying out of NITECs activities in co-operation with S&T organisations. The maximum support rate was 50%. Eligible expenditures included namely: the wages of the people employed to staff the NITEC (up to 3) for a maximum of five years; software and computers; bibliography and access to relevant databases; and technology transfer or acquisition agreements in connection with technology 'mastering' endeavours. In practice, typically at least some 85% of the expenditures corresponded to wages. The management of the NITEC incentive system was assigned to AdI, the Innovation Agency, a joint-venture between the Ministries for the Economy and for Science and Higher Education.

Budget

The specific budget for the NITEC programme was not disclosed. In fact, since NITEC was included, together with other programmes under Measure 3.3 of PRIME, the disclosed budget concerned that Measure as a whole. The purpose of this procedure was to maintain flexibility in order to enable changes in budgetary allocations in response to company's uptake of different programmes. According to information provided by PRIME Management, the total amount of incentives approved ("homologated", in PRIME's wording) for NITEC projects until 3 January 2008 was around EUR 28 million.

Impact of the initiative and evaluation evidence

Outputs

Available information suggests that the adoption of the NITEC incentive system, during its first phase of implementation has been relatively high, with the number of applications and contracts exhibiting a growing trend.

According to the 2006 Activity Report of PRIME the cumulative number of applications in the 2003-2006 period was 227, with a total investment of around EUR 82.7 million (PRIME, 2007). By the end of

2006, 192 NITEC projects had already been "homologated", entailing an eligible investment of EUR 65.6 million, and an incentive of EUR 29.4 million; this indicates an incentive rate of 44.8%. Around two thirds of the projects had been "homologated" in 2006. The figures may, at first sight, look small. However, the perspective changes if one bears in mind that Portuguese R&D statistics for 2003 indicate that the number of R&D performing firms was 1034 and BERD amounted to EUR 338 million. Even though eligible investments under the NITEC programme and R&D expenditures are not strictly comparable, the above figures provide information on the relevance of NITECs. In spite of the fact that some companies might already undertake R&D activities on an informal basis, the NITEC initiative significantly contributed to enlarging the 'crust' of R&D performing companies in Portugal. The number of new jobs created as a consequence of NITEC is 469; such a number is, of course, influenced by the fact that the maximum number of eligible jobs per NITEC was only 3.

The industry breakdown of "homologated" NITECs indicates leadership by the service industries, with 51% of the total, while manufacturing accounted for 41%. Interestingly, according to our source, more than 90% of the investment was directed to high technology intensive activities, with high knowledge intensity. This fact, while having a positive tone, may appear a little troubling, to the extent that it may indicate that the NITEC initiative was not so successful in attracting companies in low and medium technology intensive industries, thereby falling short one of the intended objectives – to enhance the in-house capabilities of companies in traditional export industries, faced with a stiffer international competition.

Outcomes

With regard to the outcomes, there is no statistical evidence about the consequences in terms of increased company competitiveness or turnover, for instance. However, information from academic research (see below) suggests a positive picture. The positive effects of NITECs included savings due to increased process effectiveness and, of course, increased design and development capabilities leading to a higher turnover. It should be taken into account, however, that the main outcomes of the investment in NITECs may take some time to materialise, keeping in mind the characteristics of the activities performed.

Effectiveness

With regard to the effectiveness of the programme, there is a broad understanding among policy-makers and academic analysts that the first phase of the NITEC initiative has been generally successful. The firms showed significant interest, as expressed by the fact that the number of applications exceeded 20% of the total number of companies that declared carrying out R&D activities in 2003. More important, however, has been the contribution towards a qualitative change in Portuguese firms' perception of R&D contribution towards business performance. Independent evidence collected from interviews with company managers indicates that, in many instances, the NITECs significantly contributed towards enhancing in-house R&D capabilities and improving external technological links. Furthermore, the programme appears to have generated a 'demonstration effect' with an increasing number of applications.

The evaluation of PRIME, completed in November 2005, provides the only official assessment of the NITEC programme available so far. The methodology followed in this evaluation included a thorough analysis of the applications and additional information on performance, complemented with selected case studies of several projects and a questionnaire sent to a selected sample of firms. With regard to the NITEC programme, the evaluation exercise suffered from the short time elapsed between programme launching and evaluation. While very critical in regard to the overall set of incentives dealing with innovation policy (criticised for their 'linear'-approach bias), it is positive with regard to the NITEC programme, specifically mentioned as "an action to be deepened" (Augusto Mateus & Associados *et al.*, 2005: Chapter 5, pp.449). It was considered that the importance of NITECs is particularly noticeable "in companies with an

intermediate skill level, where NITEC staff may develop complementary and interdependent relationships with the staff from other functional areas, as well as in technology, or skill-intensive sectors or activities" (Augusto Mateus & Associados *et al.*, 2005: Chapter 5, pp.449).

Such evaluation has been, in fact, chiefly concerned with the first objective of the NITEC programme: the creation of in-house R&D capabilities. Since the time between the launching of the programme and the evaluation exercise has been very short, it was not possible to assess the response to the other objectives of the NITEC programme: improving design and process capabilities as well as the 'mastering' of foreign technological knowledge; and promoting company capabilities to develop technologically innovative products and solutions. Available evidence in this regard is based on a set of case studies undertaken for academic purposes (these case studies were carried out in the context of the Masters Course on Industrial Management and Strategy of ISEG – Technical University of Lisbon; the corresponding documents cannot be disclosed without the authorisation of AdI, since they include confidential information disclosed to the authors, under a confidentiality agreement, by AdI). From these case studies, it may be concluded that the creation of NITECs also contributed, in several companies, towards a better performance on the two additional objectives mentioned above.

Efficiency

Overall, the efficiency of the NITEC initiative has been positively evaluated. It has been recognised that the support of the creation of the small R&D teams is justified in terms of public policy, insofar as it has significantly contributed towards a change in the commitment of Portuguese companies towards R&D and innovation. The evaluation of PRIME underlined the "cognitive additionality" of the initiative. The concept of "cognitive additionality" is intended to interpret the contribution of a given measure to enhance companies' knowledge on a specific issue and/or to raise awareness on such issue, which may be likely to give rise to a sustained behavioural change. It was found that in addition to the effect of generating a new managerial perspective with regard to the continued and systematic performance of in-house R&D activities, NITECs contributed towards "an increased capability of companies" to cooperate with S&T organisations (Augusto Mateus & Associados *et al.*, 2005: Chapter 5, pp. 213).

Some concerns were expressed, however, with regard to three issues: (1) the risk of "pulverisation", associated with the extremely small size of most R&D teams; (2) low selectivity; and (3) the substitution effect, since for some companies, which already carried out R&D activities on an informal basis, public funding was mainly envisaged as a substitute for the investment of a company's own funds (Augusto Mateus & Associados *et al.*, 2005: Annex). These problems were corroborated, in some instances, by the academic research mentioned above. In particular, the substitution effect appears to have been particularly relevant for small service companies. While some substitution has occurred for manufacturing firms, it has been to a large extent offset by the joint effect of "cognitive additionality", and by NITECs continued focus on R&D activities.

To sum up, while further analysis is needed (remember that the initiative was launched less than five years ago and the only evaluation undertaken dates back to late 2005), available evidence indicates that, compared to other programmes aimed at stimulating the development of technological capabilities, the NITEC initiative appears to be one of the most efficient, in terms of value for money, from the public policy standpoint. This perspective is based on three main considerations: (1) a higher financial leverage ratio (total investment to public expenditure ratio) when compared to other 'soft' innovation support programmes, such as the Mobilising Projects on technology development, the creation of technology-based firms (IDEIA) or the encouragement of industrial property rights (SIUPI) ; (2) contribution towards capability development and "cognitive additionality"; and (3) fostering of linkages between companies and S&T organisations.

Strengths of the initiative

What worked well?

The main positive features of the NITEC initiative may be summarised as follows:

- The capability to attract companies: as mentioned above, the early involvement of AdI in convincing a 'pioneering' group of firms was instrumental in the launch phase. However, the reasons for the uptake by companies go much beyond such initial marketing, since the number of applications has shown an increasing trend; the initiative has indeed been able to generate a 'demonstration effect';

- Simplicity and clarity: the conditions for application are clear; similarly, the scope of eligible expenditures is defined in a straightforward way; furthermore, the key purpose of the initiative is very focused (to create a small R&D team, exclusively addressed to R&D activities, through the financing of the wages of a maximum of three staff), and very easy to understand;

- Providing a response to a problem: an increasing number of Portuguese firms had developed some awareness about the competitive relevance of a more committed R&D effort; the NITEC initiative significantly contributed to reducing the perceived risk of creating a R&D team, since staff wages were financed, during a reasonable period, by public money; and

- Ensuring continuity: the engagement by companies to keep the NITEC for a five year period is also relevant, insofar as it contributes to a 'credible commitment' by companies, thereby balancing the perception of public/private risks.

What was innovative?

The main innovative feature of the NITEC initiative has been the focus on in-house R&D activities. Traditionally, public funds for innovation were granted on the basis of investment projects (with a bias on tangible investments), on R&D cooperation projects, and for S&T infrastructures, with the implicit assumption that these would generate their own demand. NITEC worked the other way around: the focus was on the building-up of company in-house capabilities. While the creation of a NITEC should be based on a set of projects, which are instrumental (namely by stimulating strategic reflection), and not the core; the core was the creation of a dedicated, stable R&D team.

Reasons underlying success

The main reasons underlying success have already been mentioned in the context of the response to the question 'What worked well?'. More specifically, four aspects deserve a remark here: (1) *Focus*, since the programme is clearly focused on a specific, very clearly defined objective; (2) *Demand-side approach*, since the NITEC initiative was directly addressed to companies, and not to supply-side organisations, to promote company in-house capabilities; (3) *Momentum*, since the initial involvement of AdI in the focused marketing of the programme has generated an initial 'reference' base that enabled a 'demonstration effect' later on; and (4) *Financial package*, attractive enough to significantly reduce companies risk perception.

Weaknesses of the initiative

Obstacles or problems that emerged during the design or the implementation of the initiative

Drawing on the evaluation of the NITEC programme, in the context of PRIME, as well as on academic case studies mentioned above, the main weaknesses of the initiative are the following:

- Insufficient selectivity: as mentioned above, it appears that some small companies developing creative activities have used the programme to have access to additional funding, entailing neither a qualitative change in the activities performed nor the creation of a distinctive R&D team; another issue, also associated with selectivity, is the acceptance of NITECs by companies that were already, though informally, undertaking R&D activities, thereby reducing additionality in the use of public funds (the evaluation report was not, however, very negative in this regard);

- Size of the R&D teams: the evaluation of PRIME remarked that the maximum number of staff supported might be a hindrance in some instances. The evaluation report mentioned that such a limitation "might lead to a pulverisation of resources addressed to support small initiatives, with too low a scale to lead to outcomes with a relevant impact on each company" (Augusto Mateus & Associados *et al.*, 2005:Chapter 5, pp. 213); and

- Administrative procedures: it should be mentioned that, according to the evaluation of PRIME (Augusto Mateus & Associados *et al.*, 2005: Annex, pp. 72), the NITEC programme fares well compared to other innovation-oriented programmes. Although the length of the decision period seems acceptable, the time needed to undertake the first payment is excessively long (188 days). More recent evidence suggests, however, significant improvements in administrative procedures and decision periodsQuality of response taken to obstacles or problems

The responses to the problems identified during the initial phase of the NITEC programme have not been taken under consideration in this first stage of the programme. Since this was launched at a late phase of the 2000-2006 Community Support Framework, it seems that policy-makers have waited for the new round of Community support, translated into the 2007-2013 NSRF to implement some lessons learned from earlier practice. To respond to the issue of the size of R&D teams, a new incentive system addressed to R&D Centres has been launched, where the maximum number of 'supported' staff was increased to five. With regard to the other issues identified it is still early to assess the extent to which they were resolved, since the first application phase was closed in early February 2008. There are, however, positive signs in this regard, since selectivity has been considered as one of the main tenets for the management of the 2007-2013 NSRF, and the new managing organisation (IAPMEI) is more experienced and has the capability to mobilise a greater amount of funds than AdI.

Potential transferability

What are the main lessons for Wales and places similar to Wales?

SMEs in Wales appear to share, to a significant extent some of the problems faced by SMEs in Portugal in the present globalisation context. The argument by David Ford and Michael Saren, from the Universities of Bath and Strathclyde respectively, that SME managers view the technologies mainly in terms of applications (Ford & Saren, 2001) is valid for Scotland, Wales or Portugal... or for any 'contingent' SME elsewhere in the World. This also comes in line with Arnold and Thuriaux typology of a company's technological capabilities (Arnold & Thuriaux, 1997). One of the key challenges of public innovation policy, in Wales as in Portugal, is to help SMEs to build up in-house capabilities. To climb the capabilities 'ladder' becomes essential, not just for companies to better figure out technology applications

and opportunities, but also to enhance their relational assets, namely with other companies (customers, suppliers, partners or rivals) and with S&T organisations. The NITEC programme has responded to such a challenge in a very straightforward and focused manner. Therefore, it may be considered as a good practice, with relevance for innovation policy in Wales.

Considerations for successful adoption in Wales and places similar to Wales

Furthermore, our research on the NITEC initiative has shown that it is not hindered by contextual traits that might limit its replicability in a different context. Of course, a more in-depth analysis would be needed to identify specific issues to be addressed, in the re-design/adaptation to the Welsh context, the administrative machinery or the launching campaign. In general terms, however, there are no major transferability issues. The simplicity and focus of the NITEC initiative make it, in our opinion, very amenable to replication.

For further information

As mentioned in the Introduction, the management of the NITEC programme has changed from Phase 1 (2003/2007) to Phase 2 (2007 onwards). During Phase 1 the managing organisation has been the Innovation Agency (AdI), while in Phase 2 it is IAPMEI, the Institute for Small and Medium Sized Firms and Investment. It was decided, therefore, to present below the contact details and the websites of both organisations.

Innovation Agency (AdI)

Mr. Lino Fernandes (President) or Mr. Paulo Cunha (Vice-President)
Campus do INETI, Ed. O, 1º Estrada do Paço do Lumiar 1649-038 Lisboa, Portugal
Tel.: +351 214232100; Fax: +351 214232101
www.adi.pt

IAPMEI

Prof. Jaime Andrez (President)
Rua Rodrigo da Fonseca, 73, 1269-158 Lisboa, Portugal
Tel: +351 213 836 000; Fax: +351 213 836 283
www.iapmei.pt

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KNOWLEDGE TRANSFERS

KPLUS COMPETENCE CENTRES (AUSTRIA)

Jürgen Janger and Klaus S Friesenbicher
WIFO (Austrian Institute of Economic Research), Austria.

Rationale for the initiative

In a knowledge-based society the production and the widespread commercial use of new knowledge have become principal factors of growth. Today's dominating innovation system approach has shown that the generation and application of knowledge by two sectors, namely science and industry, independently of each other, does not work well (see *e.g.* OECD, 1997, Lundvall, 1992). Production systems become more science-based and ever more complex, leading to the increasing specialisation of research activities. A purely in-house R&D-strategy at the firm level will in most cases lead to either inefficient research cost structures or to mediocre research results. As a result the efficiency of innovation activities can be better optimised through research partnerships between diverse players of both the knowledge-generating and exploiting sectors of the innovation system, in short by improving the links between science and industry (Steyer, 2006, p. 75).

Problem to address

In the mid 1990s, the small and open economy of Austria faced several problems. First, there was the perception of a structural paradox (Peneder, 2001) in that Purchasing Power Parity (PPP) - adjusted levels of gross domestic product per head - were rather high in comparison to Austria's R&D ratio. It was feared that a lack of innovation intensity would translate sooner or later into economic difficulties, such as declining world market shares, especially against the background of Austria's accession to the European Union in 1995. Low R&D expenditures by private firms were responsible for the low R&D ratio, and were partly explained by Austria's specialisation in low- to medium-tech traditional manufacturing sectors such as wood and metal. Austrian firms were, for the most part, known to succeed in international markets by occupying niche markets, absorbing technology developed abroad and incrementally adapting it to their clients' needs. Innovation was not so much the result of determined, science-based research efforts, as it was changes at the production level. Many engineers were not university-trained but graduated from Austria's vocational upper secondary schools.

Second, Austria featured a good overall stock of knowledge and higher education sector research activities, but a rather weak transformation of this stock into successful innovation. There was a clear lack of cooperation between the higher education sector and industry.

Third, in relation to the second problem, knowledge flows between university and industry were also fundamentally limited due to diverging specialisations of university and industry research. University research showed a rather fragmented and broad picture, similar to a big country's specialisation pattern. Only 2% of university research was funded by the private sector. This limited overlap between the two research sectors was regarded as a systemic failure within the Austrian innovation system.

Policy context

As the linear view of the innovation process gave way to more systemic approaches, Austria's innovation policies were still geared to supporting innovation within separate sectors of the innovation system rather than stimulating links between the sectors. The *Forschungsförderungsfonds für die gewerbliche Wirtschaft* "FFF" (Industry Research Promotion Fund) mainly financed innovation projects from individual firms on the basis of project quality. The *Fonds zur Förderung der wissenschaftlichen Forschung* "FWF" (Basic Science Research Promotion Fund) distributed its money following the same principle as university institutes. There was no concern for the functioning of the innovation system as a whole or for concentrating resources in order to build a critical mass. Firms defined their own research and innovation projects according to their own needs and then asked for support. The result was that innovation did not move beyond the firms' planned needs. Changes in innovation behaviour or strategy, such as intensified cooperation with outside sources of knowledge or increasing the technological complexity of projects, were rare as a result of these innovation policies. On the other hand, Austria was the country with the highest share of General University Funds, with 70% of the public R&D support going into the higher education sector and 97% of R&D performed in the higher education sector financed by public money.

Description of the initiative

Austria responded to this situation by setting up the so-called *Kplus*-competence centres, a new form of cooperation between science and industry. They were designed to overcome the following specific barriers to increased university-industry cooperation and overall effectiveness of the innovation system:

- A lack of cooperation culture between university and industry, which can be explained by several factors: industry's path-dependent R&D activities – mostly intra-mural, routine innovation activities. It needed external stimulus and support to engage in R&D activities with outside, university researchers; while universities were not encouraged or did not need to resort to third-party funding by virtue of the set-up of the Austrian university system.

- The difficulty for researchers to move between university and industry research;

- The dispersion of Austrian university research, again encouraged by the specific set-up or governance of the Austrian university funding system.

- Traditional innovation policies, which awarded individual research rather than cooperation with other actors across institutional boundaries.

Clearly, reforming universities and innovation policies, changing industry's R&D strategies to achieve the same cooperative behaviour and research focus would have taken much longer than setting up new, publicly funded, cooperation centres. Competence centres are collaborative research centres - with a limited time span (7 years) - aimed at high-quality, pre-competitive and basic industrial R&D activities that fulfil the needs of the industrial sector and preserve high academic standards. The industrial and university partners of a centre define their research project together. The centre's staff works together, on site in a publicly funded infrastructure.

Objectives

The *Kplus*-programme has several objectives. At the level of the innovation system, the main aim was linking research actors and focusing research activities, in particular:

- Improving links between public sector research, mostly carried out at universities, and industrial sector research: "More intensive and more long-term oriented cooperation between universities and industries should promote a stronger industrial orientation of academic research, direct it towards excellence and enhance its international reputation." (BMWV, 1997, p. II). Ultimately, these improved links should speed up the commercial use of the knowledge gained.

- Improving focus by creating the critical mass necessary to carry out high-level research.

- Training of young researchers at the master, doctoral or post-doctoral level.

- Increasing the international visibility of Austrian research, and participation in European research framework programmes.

At the level of the higher education sector, the *Kplus* centres were supposed to reduce the fragmentation of research areas and to enhance the industrial relevance of university research.

At the firm level it was hoped that - due to the long-term character and the definition of the research collaboration with other firms and universities - firms would develop more strategic R&D activities, and that they would change their innovation behaviour in favour of a more co-operative, networked innovation style which would lead to more fundamental innovation with possible wider marketplace application. Also, the *Kplus*-centres should give companies a greater incentive to increase their R&D-expenditures.

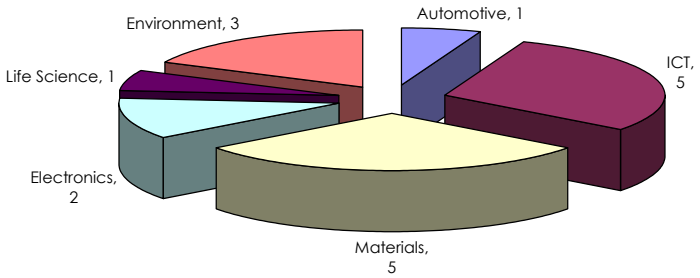
At the level of the overall economy, the employment of highly qualified people and an improved balance of payments and gains in overall competitiveness were formulated as goals. Existing foreign R&D departments located in Austria should be safeguarded, while others should be attracted to Austria.

Activities

The *Kplus* centres are managed by the *Österreichische Forschungsförderungsgesellschaft* "*FFG*" (Austrian Research Promotion Agency). The task of the agency is to organise the selection of the centres, their public financing, coaching in administrative issues and evaluation. Public policy thus works as a stimulator, an enabler, facilitator and controller of collaborative research and innovation activity within the *Kplus* centres.

The activities of the competence centres themselves were, by definition, thematically open, even if the technology fields that were eventually supported are typically found in thematic technology programmes. Almost two thirds of all centres conduct R&D in information and communication technologies or materials sciences. Other fields are environmental technologies, electronics and mechatronics, life sciences and automotive technologies (see Figure I.9).

Figure I.9 *Kplus*-centres by research themes



Source: FFG, WIFO

Research projects can be of three different forms. Strategic projects involve all the partners of a competence centre in terms of research and financing. They are usually longer-term and closer to basic science. Application-oriented projects are carried out by a subgroup of the centre and may only involve one or two firms, which contribute to the financing of the project. Commercialisation projects lead to the development of a marketable product or service. This type of project is undertaken in the so-called "non-*Kplus*-area" of the competence centres (see below, budget of the centres).

An example for the different types of research projects can be found in the Linz Centre of Mechatronics "LCM" (www.lcm.at). This centre concentrates its strategy on both basic and application-focused research programmes in collaboration with its customers. While customer projects at the LCM aim at the special objectives of the respective customer, strategic research projects are embedded in a broad-based methodology and application-oriented research programme. Strategic research is seen as a condition for continuous knowledge accumulation which assures the long-term competitiveness of the centre.

A technical application stemming from strategic R&D is, for instance, the development of an "Ultra Wideband (UWB) System". Other than common cellular mobile phone technologies, the use of UWB systems does not require licences for the use of its spectrum because its radiation lies below the threshold of interfering radio channel power. The technology has been developed in collaboration with the "Institute for Communications and Information Engineering" of the University of Linz, and now offers a multitude of applications, ranging from mobile telecommunication (its channel capacity is 1000 times larger than the Universal Mobile Telecommunications System (UMTS)-standard), reconnaissance technologies, medical engineering, non-destructive materials testing, to the detection of landmines.

Delivery arrangements – Selection procedure for centres

Naturally a key part of the programme is the selection procedure for centres. It is open to the public, and based on a comprehensive set of criteria. To facilitate the process and guide the centres in setting up their bids for funding a list of criteria has been published. This catalogue includes a number of compulsory criteria and a number of qualitative criteria. Some examples of qualitative evaluation criteria would be the definition of goals a centre wants to achieve, indications about key proponents of the centre, socio-economic goals, international affiliations, coherent research topics and quality management. Applications are not restricted to predefined areas of science, technology or business.

The applying centres compete for the available, pre-defined amount of funding in two stages. In stage one, in a letter of intent, the centre states its goals and research plan as well as the scientific expertise of key researchers. Some of the industrial partners have to be named and a long-term commitment secured. The focus of this stage is on scientific excellence and industrial relevance. This is assessed in an international peer-review without national members. The initial impetus for the centres will as a consequence come from universities or research centres rather than industry. This is why the *Kplus*-programme has also been called "science-driven" as opposed to other Austrian competence centre-programmes (*Kind* and *Knet*) which are more firm-driven or innovation-driven.

In stage two, a full proposal is made. Based on the letter of intent, a selection committee decides which centre to invite. The costs of setting up the full proposal are partly funded by the *Kplus*-programme. The full proposal focuses on the extent and the quality of the industrial participation as well as the centre's quality of organisational management. The training of young researchers must be ensured, as well as the exchange of personnel between universities and firms (interaction of staff is a key component). The full proposal is defended in a hearing before a selection committee composed of scientific peers, experts from the business-sector and professional evaluators.

During the set up of the *Kplus*-centres, a pilot scheme was first introduced by the FFG to gather experience. A few candidates with elaborated proposals were invited to enter a modified selection process, where scientific excellence, quality of industrial participation and organisation plans were assessed in one step.

Delivery Arrangements - Organisation and Management

In terms of administrative organisation, the centres are set up as independent legal entities, typically in the legal form of a private limited company with all the bodies legally required (*i.e.* management board, supervisory board, general assembly etc.). They have to have an administrative structure which guarantees efficient management. A chief executive officer (CEO), typically from an industrial background, runs each centre. Sometimes, a chief science officer (CSO) with a good academic reputation is hired to manage ongoing research projects and to monitor scientific quality. The CEO can be the same person as the CSO. After an initial growth phase of three years, the centres are expected to be staffed with 25-60 employees, among them 5 to 15 high-level researchers and 20 to 40 other scientific staff. The researchers must work in a shared location, ensuring team work and informal knowledge exchange between industry and university researchers.

In terms of the organisation of scientific production, the research programme of each centre is usually split-up into several big research projects, conducted by groups of scientists and organised by research area. The research areas are run by area managers (or area advisers) who supervise project managers who in turn co-ordinate the individual projects within each research area. The research areas can be largely independent from each other, with collaboration between research areas occurring on a case-by-case basis. Research area managers have scientific counterparts in the universities, so called "key researchers", who serve as technology consultants. They were absolutely central at the beginning of the programme, since - due to the missing track record and experience of the centres - know how came primarily from the university institutes. Most centres also feature a scientific advisory board consisting of experts who consult the centre and comment on or evaluate the research programme.

In terms of the organisation of sharing research results, each centre is free to draw up the contracts binding the stakeholders from industry and universities. Typically, the firms involved have the right to commercial use of research results, while university researchers can academically publish their findings, provided that the firms agree.

Each centre sets up a partnership agreement which is signed by all stakeholders, and comprises all the documents regulating administrative and scientific structures as well as intellectual property rights. The set-up has to ensure that the research activities remain pre-competitive, *i.e.* stop when the prototype is finished. The FFG will not start funding the centres before it has received the agreement. In order to facilitate the process of establishing a legal framework, it provides best practice documents.

Budget

Altogether, the programme aimed at funding approx. 20 centres. In reality, 18 were selected and eventually received funding. A typical annual budget of a centre amounted to EUR 2-4 million. Notably, the tenders were oversubscribed by a ratio of approximately two to one, i.e. not all submitted proposals were accepted. The total programme expenditure amounted to EUR 400 million, 60% of which was funded by the public sector, 40% by business. The high degree of subsidy was deemed to be justified by the closeness to basic research and the aim of important structural changes in firms' R&D behaviour. The funding shares were flexible over the lifetime of a centre, *i.e.* initially a higher public share was possible if this was compensated by higher private funds at later stages.

The public funds can be split-up into university funding, which amounted to 5% of the total budget, and money from federal and regional funds (55% of the total budget). The ratio of federal to regional support was seven to four. Concerning the funds from business, up to half of their share (*i.e.* up to 20% of the total budget) can be provided by foreign firms. Foreign firm involvement varied from centre to centre (COMET, the successor programme of the *Kplus* centres, has dropped the 20% threshold in its tender requirements).

Furthermore, it was possible for the centres to collect further external finance, be it in the form of contract research or through other research promotion funds such as, for instance, European funds (*e.g.* research framework programmes) or national money, even provided by the FFG. This co-funding model was called "*Non-Kplus*" and aimed at increasing the independence of the centres and at possible continuation of the centres after expiry of the 7-year period for the regular funding model.

Evaluation

At the level of the individual centres, evaluations and reporting were scheduled for three stages: After selection, a centre has to provide annual reports and a list of benchmarking research projects, *i.e.* a list of the centres' best research contracts in terms of industrial relevance and scientific excellence. An interim evaluation is scheduled for the fourth year of the centre. This means that budgeting and planning is done for the first four years only. Should the interim evaluation be positive, the centre may continue for the remaining three years. A second period of seven years is possible, but only with a new research proposal. At the level of the *Kplus*-programme as a whole, an evaluation was scheduled after five years of operation (Fraunhofer, 2004). The FFG monitors the centres' success in terms of quantitative indicators, such as patents or publications, and also roughly monitors the impact that the research conducted in the centres has on the firms (*e.g.* how product lines using certain technologies changed).

Impact of the initiative and evaluation evidence

Outputs

Three hundred firms, a mixture of large and medium-sized firms, and 150 university and extra-university research institutes participated in a total of 18 centres. From a sample of 118 firms questioned, 78% said they increased innovation expenditures during participation in *Kplus*. The weighted estimated rate of growth of innovation expenditure amounted to 28% between the years 1997/98 and 2001/02.

Altogether, 350 Ph.D. and 430 dissertation theses were prepared at the competence centres; at the moment 640 researchers are working there. Approximately, 90 researchers have moved from the competence centres into firms.

Outcomes

In existing surveys and evaluations, industry partners reported several types of outcomes. In terms of R&D outcomes - businesses cited co-publications generated in competence centres - 31-50% of firms see a shortened development time. Participation in EU framework programmes is much more successful now – a *Kplus*-participating firm was on average involved in 3 projects in the fourth framework programme and in five projects in the fifth framework programme.

In an evaluation carried out in 2001, a majority of firms did not see an impact on business outcomes (Steyer, 2006)."Greater impacts were expected in the longer run: the majority of competence centre-participating firms (51-70%) expected a "slight positive" impact for the following variables after a period of more than 3 years: turnover, cost cutting, reputation and competitive position. A third to half of the

firms (31-50%) expected a slight positive impact for the following variables after a period of more than three years: employment level, qualified personnel found and entry into new markets.

Research projects which led to the development of marketable products include the following: The Competence Centre of Applied Biocatalysis (AB, www.applied-biocat.at) has managed to improve the synthetic production of an enzyme which is now used in the production of a drug against thrombosis. The project resulted in several patents. The Carinthian Tech Research Centre (CTR, www.ctr.at) has succeeded in replacing the ignition plug in a motor by a laser, resulting in increased fuel efficiency. The Telecommunications Research Center Vienna (FTW, www.ftw.at) has developed a tool to spot problems in networks. This tool, called network monitoring, is in use in Austria's biggest mobile operator, Mobilkom, and part of the solutions sold by the Austrian electronics firm, Kapsch, partner in the centre.

Effectiveness

Available data indicates that the *Kplus* centres have been quite effective in meeting the objectives of the overarching programme.

At the innovation system level, a major success is the institutionalisation of a new culture of cooperation between science and industry. Evidence for a successful linking of both sectors comes from data on cooperative behaviour and from additionality surveys. Research collaboration is now of greater importance for *Kplus* firms than for non-*Kplus* firms; the share of contractual R&D went from 10% to 22% since the beginning of the programme in 1997/98 up to the first interim evaluation in 2001/2; *Kplus* industry partners spend far more money on external research than innovative non-participating firms do (comparison with data from the third Community Innovation Survey). In terms of innovation behaviour, survey data indicates a substantial change in innovation activities: before *Kplus*, firms assessed the importance of contractual research on a 5-grade scale (1 not important, 5 very important) at 2.53; after participating, they assessed the importance with a grade of 3.44. The importance of co-operative research increased from 2.56 to 3.38; the importance of universities or other higher education institutions as an information source for *Kplus* partnering firms reached 2.00 on a 0-3 scale against 0.62 for *Kplus*-non-partnering firms. The most important reasons for firms to participate in *Kplus* are the access to scientific or technological know-how and qualified personnel.

Questions about the additionality of the programme reveal that the *Kplus*-programme enabled firms to do projects which they would otherwise not have been able to do, showing that there are real benefits for the firms in cooperating with the science sector: Only 5% of firms said that they would have carried out projects without the respective competence centre; one third would not have been able to carry out the project at all; the rest would have carried out the projects, but with limited resources, scaled-down objectives and a different duration (for more detail, cf. Steyer, 2006).

At the firm level, survey data indicates that incentive was given to private R&D expenditures, *e.g.* follow-up projects were often the result of a first cooperation within a *Kplus*-centre. Research projects within *Kplus* are higher-risk, technologically more complex and longer-term in comparison with intra-mural firm R&D, pointing to a change in firms' innovation behaviour towards more strategic R&D activities.

The European visibility of Austrian research has increased as proven by more successful participation in European research framework programmes. At the level of the overall economy, both exports and the Austrian R&D ratio improved markedly over the duration of the *Kplus*-programme, but no analysis, so far, has causally linked this to the programme.

Efficiency

There is no precise analysis of the efficiency of the *Kplus* initiative as compared to different policies to reach the same objectives. On the one hand, due to the obligation of the centres to apply demanding managerial and organisational standards, to work together with staff from private firms, and due to the yearly benchmarking reports, it is plausible that the initiative would err towards cost-efficiency. On the other hand, the evaluation of the *Kplus*-programme by Fraunhofer criticised that there was no cooperation between the individual centres to achieve administrative and research synergies.

Strengths of the initiative

What worked well?

In contrast with former innovation policies, the *Kplus*-initiative was clearly based on a systemic approach, recognising the need for interaction between knowledge-generating and knowledge-exploiting actors. Accordingly, what worked well was the acceleration of a technology competence upgrading process beyond firms' own internal plans. The programme was good at fortifying strengths and at building critical mass in existing areas of (scientific) strength. It led to learning on both sides of the stakeholders involved. On the one hand, universities learned what companies need, and on the other hand companies learned what universities are able to offer. Thus, the basis for sustainable future collaboration between industry and science was created by the programme. From the policy maker perspective, it was interesting to see so many applications for research centres - from areas not known before - showing industrial and university research focus in Austria. The *Kplus*-initiative thus highlighted additional areas of the Austrian innovation system with strong elements even at the international level. The programme worked as an important catalyst for Austria's move from the position of a technology imitator and adapter to the position of a technology front runner.

What was innovative?

The Austrian *Kplus*-programme was inspired by the Swedish NUTEK-centres, the Australian CRC Cooperative Research Centre Programme and the Canadian Networks of Centres of Excellence-programme. Innovative approaches were found in handling Austria's peculiar university system, as well as in the selection procedure for inviting centres to an open and competitive call for funding. Industrial relevance and scientific quality were strong criteria, but there was no bias towards certain areas of science or industry. The programme was particularly innovative when compared with the established Austrian innovation promotion system: it was the first structural, long-term programme targeted at a change of the R&D and innovation behaviour of Austrian firms. R&D and innovation promotion up to then was very much based on project grants to individual firms/university institutes upon application by the firm or university institute.

Reasons underlying success

First, innovation policy makers, firms and universities had clear incentives to try a new, almost front runner programme: innovation policy clearly identified the weaknesses in the Austrian innovation system and wished to address this. Firms recognised the need for closer collaboration with outside partners of scientific expertise, due to increased competitive pressure from within the European Single Market, which Austria had joined only two years before the programme started. Universities were badly underfunded and co-operation with industry was often very application-oriented. As a result, they were eager to participate in a well funded programme which was oriented towards basic research. About 80% of the centres were initiated by entrepreneurial-minded university professors.

Second, the administration of the programme was professional. There was a clear separation of responsibilities between the administering agency (first the *Technologie Impulse Gesellschaft "TIG",* which later merged into the FFG) and the responsible ministry, with no room for political decisions, a previous problem in Austrian innovation policy. The centres themselves had to implement good management and reporting structures, which facilitated transparency, evaluation and efficient research projects.

Third, the selection mechanisms of the centres were central to the success of many centres. The proposals had to follow a clearly defined set of criteria, which prevented many problems and possible conflicts of interest from the beginning. The international evaluation and its publication guaranteed not only transparency in the selection process, but also the high quality of selected centres proposals. This fostered the late implementation of the proposals, and helped in the setting up of well functioning workflow and organisational structures.

Fourth, the elaboration of research projects which firm and university researchers had in common was crucial in changing innovation behaviour by firms. The centres were not just conducting contractual research, but collaborative research by industry and university researchers. This facilitated exchange between these two sectors, but also enabled and gave firms the incentive to establish a different research strategy altogether. The mutual conception of the research project with outside researchers in itself allowed firms to obtain new ideas and push the technology frontier, going beyond firms' initial research projects.

Fifth, the young researcher training programme within each centre proved to be valuable. This came to be valued by firms desperately looking for qualified researchers working in areas of industrial relevance.

Sixth, the flexible design of the programme rules allowed for the accommodation of varying sectoral business traditions, *e.g.* each sector has different ways to handle IPR. The FFG was not imposing standard contracts. There were, of course, also limits to this flexibility (see below).

Weaknesses of the initiative

One of the weaknesses commonly cited was that, even though *Kplus* differentiates between compulsory and qualitative criteria, the number of objectives of the initiative was too high. Multiple targets are typically not only hard to meet by the contractors, but also blur the scope for a critical post assessment.

Furthermore, not all centres were up to the high scientific standards set by programme. Also, there was insufficient networking, synergy-building and pooling of research, and administrative tasks between the individual centres.

Originally, the time limitation intended to produce centres that are independent from public funding in the long run. However, as it turned out, policy makers were not capable of stopping the flow of funds, be it because centres were actually not self supporting and would have had to close down after the end of public support or be it because once established, public support is hard to bring to a close. This also shows that the "Non-*Kplus*" funding model was ineffective to provide a broader financial base. Similarly, the uncertain end date of the centres – after the first interim evaluation after four years or after seven years – made some projects difficult and impaired a stable framework for the research programme.

Although *Kplus* was thematically open, the success of this kind of cooperative research programme was influenced by the characteristics of the research process in different technologies and differing sectoral structures in terms of firm size. While *Kplus* worked well in materials, electronics, and to some extent also in information and communication technologies, it was lacking in the life sciences. In the latter, research follows trial and error and protecting intellectual property is of the utmost importance among competing firms. Collaborative research programmes are thus of limited use. In some sectors in Austria, such as bio-

energy, only small firms exist. Even if innovative, they lack the necessary resources and know-how to successfully participate in research programmes of this scale.

A more fundamental critique of the programme was that it does not speed up structural change between sectors; it only does so within sectors. *Kplus* is rather an "upgrade" programme of existing technologies. Since scientific excellence and the quality of industrial participation were pre-conditions for the selection of the centres, it merely optimised available potential and increased competitiveness in existing areas of strength.

Obstacles or problems that emerged during the design or the implementation of the initiative

Obstacles or problems were mostly related to the practical implementation of the programme's guidelines, for example, in the field of sharing intellectual property rights or finding the best organisational structure for the centres. Universities did not have much experience in contract writing because there was little third party funding before the implementation of the centres; and there was potential conflict of interest in terms of both determining the research content and deciding how R&D results are used between profit-driven firms and publication-driven scientists. Some centres had problems balancing the trade off between purely academic and more industrially applied research.

Furthermore, finding sufficiently qualified high-level staff was an impediment to some centres, which eventually also exhibited suboptimal performance.

Quality of response taken to obstacles or problems

As a consequence, best practice agreements were made available to all the centres on a voluntary basis. The *Kplus*-programme has now been replaced by its successor, COMET. This initiative aims at a higher quality differentiation between the centres – only the very best, in terms of scientific quality, will get even more funding than before.

Potential transferability

The potential transferability of the programme should be high as it is running in similar versions in Australia, Canada and Sweden as mentioned above. This also means that there is a lot of experience available for Wales; least of all potential evaluators for the centre selection procedure.

What are the main lessons for Wales and places similar to Wales?

Critical mass in research at a high level can be actively stimulated by public policy, even in small countries or regions. The *Kplus*-centres in the Austrian towns of Graz or Linz – of similar size to the Cardiff region – worked very well and will also be part of the successor to the *Kplus*-programme, the COMET-initiative. One must be careful, however, about where to put the emphasis – science and knowledge of a pre-competitive nature, or innovation. For pre-competitive knowledge-building, time horizons are longer than for purely-innovation oriented research centres. However, gains for economic development and other objectives might ultimately be higher when resources are concentrated on uses closer to basic or use-inspired basic research.

Considerations for successful adoption in Wales and places similar to Wales

To assess the potential for this kind of collaborative research centre, innovation policy makers should first talk to universities established in Wales, as well as to regional industries, to get a first impression. In designing the cooperative centres, the peculiarities of the university system have to be taken into account. Wales needs to make sure it has the necessary leverage over universities to be able to design appropriate centres. Leverage may only need to involve more attractive funding and research perspectives than the status quo, as competence centres can be set up as independent legal entities. It is thus also a question of research and funding opportunities currently available to Welsh universities. In Austria, the centres were

set up as independent legal entities due to the lack of university autonomy at that time: universities were still under full command and control of the Ministry of Science. Establishing the centres at the universities would not have been beneficial in terms of results. In Australia and Sweden, similar centres were positioned closer to the universities. Now that Austria's universities have gained autonomy, the problem with independent entities is that it is difficult to show the centres' research performance as part of the universities, undermining incentives for universities to participate in the centres.

In selecting the centres, two criteria out of the long list proved decisive: the scientific quality of the application and the potential for the centre to significantly increase the competitiveness of an Austrian sector or region (criteria 5.1 and 5.2). The review of the scientific quality was organised by the basic research promotion fund, FWF. Every third referee was chosen from an institution with experience in science-industry co-operation as opposed to purely academic researchers. The review of the economic prospects of a centre was organised by the *European Recovery Program Fonds* (ERP Fonds, business promotion fund).

Several features distinguished good from bad centres: First, the internal set-up was vital to the success of the centres. Being half private, half public, the role of management was a decisive factor for smooth operations. Naturally, private industry aims at conducting applied research in order to achieve marketable outcomes. Researchers were, on the other hand, attracted by the science based nature of the programme, and thus had strong interest in pushing for more basic R&D which can eventually be published. Thus, the success of the programme hinges in part on the quality of the managers of the centres and their ability to resolve conflicts of interest both at the level of the definition of research projects and at the level of the use of research outcomes (commercialisation vs. publication).

Secondly, the governance structures had to clearly set the rules of cooperation between the partners. For example, the FTW-centre chose a structure with two pillars: all the partners were organised in an "association" independent of their financial contributions, i.e. one vote per partner. This association owned the operational company, organised as a limited company. An association is very flexible in that it can grant itself the statutes that all members agree upon. Thus, for every partner, a minimum participation time of 2 years was agreed. After 2 years, firms could leave the centre once every year; following a 6 month notice period. This was important to manage commitment and achieve stable planning horizons.

Thirdly, the participating firms had to have a certain mindset to make the centres successful: they had to be interested in longer-term, use-inspired basic research projects and be willing to cooperate with others in the research projects. If they just tried to maximise short-term gains from the centre, perceiving the centres as contract researchers, the centres did not show superior results to other forms of R&D promotion.

Fourth, centres with pronounced international recruiting were successful: in some centres, a third to half of the researchers came from up to 15 different countries. Different cultural backgrounds fostered effective research. In order to attract researchers, in particular PhD-students, it was important to have a sufficient number of long-term, close-to-basic-research projects, which could result in journal publications.

For further information

www.ffg.at/kplus

DI Otto Starzer
Tel: +43 (0)5 7755 - 2101
otto.starzer@ffg.at

Barbara Kunz
Tel: +43 (0)5 7755 - 2404
barbara.kunz@ffg.at

DI (FH) Anna Tropper
Tel: +43 (0)5 7755 - 2106
anna.tropper@ffg.at

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UNIVERSITY FILIAL CENTRES (FINLAND)

Kati-Jasmin Kosonen
University of Tampere, Finland.

Rationale for the initiative

Finland (5.3 million inhabitants) has been successful in recent years in various competitiveness and innovation factor studies. High and medium tech manufacturing and electronic sectors are highly competitive in the global race, and the system supporting innovation at the national level is working well. However, regional differences are amongst the highest in northern Europe. Finnish industries, and their surrounding environments and regions, are being globalised through many linkages and trading routes and are therefore in the search of new knowledge, complementary skills and capacities, new ideas and resource pools in order to be competitive. The situation is especially challenging in the regions where there is no tradition of higher education, science based R&D or systematic innovation search. While the traditional, narrowly focused satellite-type research and development institutions located in the Finnish less favoured regions (LFRs) were not able to offer wide enough interregional or international technology communication channels to firms, firms were in favour of building up together with other allies local shared arenas.

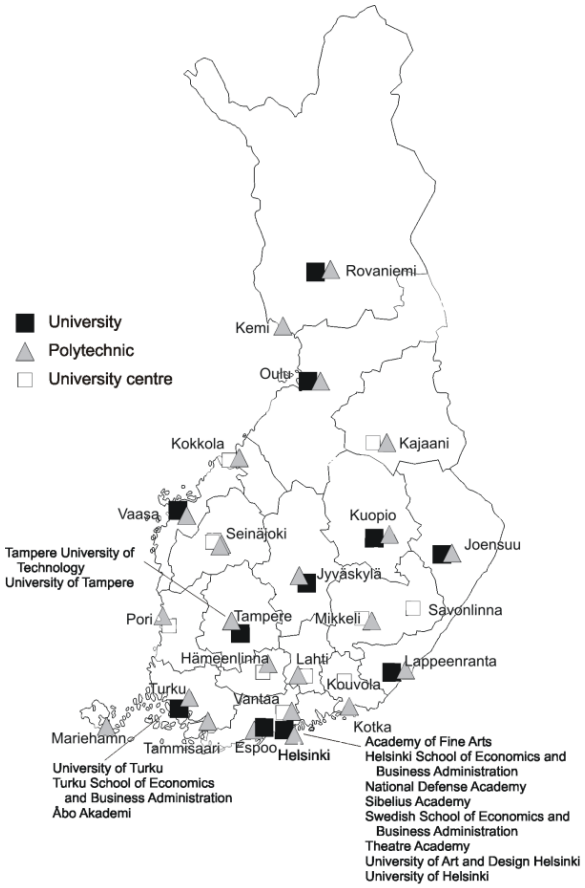
The way to proceed for industry representatives and entrepreneurs was to join the exploratory network-building efforts led by a local development network made up of university and polytechnic unit leaders, members from regional development agencies and policy-makers. This intertwining regional collaboration with various types of competencies, institutions, technologies and industries and other businesses has recently been defined in literature as a (policy) *platform development* (Woolthuis *et al*. 2005, Lester and Sotarauta 2007.) Since the end of the 1990s, national, regional and local authorities and development organisations, including universities, have been trying to support innovation processes through different knowledge networks and a new type of collaboration. The innovation environment in these LFRs was created and strengthened as a development path, which *brings into and strengthens existing knowledge* in the less favoured regions. This was mainly achieved through regional entrepreneurship (See Kosonen 2007) by a) inducing universities to found new units and creating *university filial centres*[1] (institutions) and by b) creating shared arenas as *innovation (policy) platforms* under the university filial centre umbrella.

Description of initiative

The general idea has been to establish a single higher education institution for the region and to work together with regional partners. The background of the establishment of the University Filial Centre Network lies in executing universities' regional development function and in answering the needs of a region. The main functions of the university branch unit consortium are a) to expand the *student recruitment area* for the main university and b) to expand the *collaboration network of 'customers*'; public institutions and especially industries and firms located in these regions. Generally in Finnish LFRs the polytechnics are key players in building the innovation environment, while nationally polytechnics are only the second pillar of the Finnish system of higher education, with

universities being the first. In addition, this dual model is under continuous development and is subject to science and innovation policy discussion. The locations of Finnish universities and polytechnics are presented here in Figure I.10.

Figure I.10 Finnish universities, polytechnics and university filial centres by Finnish regions (NUTS 3 areas in EU category).



The first campus universities to establish educational units in LFRs acted in the mid 1980s. The next active period was at the end of the 1990s and at the beginning of the new century, when neighbouring universities began outreach to academically peripheral regions. At that time, the so called 'third role' of universities became a formal commitment as their financial possibilities for such outreach activities increased, especially when compared with the funding available for the university's 'own' region. By the end of 2004, these umbrella organisations in the town regions of Kajaani, Kokkola, Lahti, Mikkeli, Pori and Seinäjoki, were systemically organised into a local and national network and called "university filial centres" (Ministry of education 2001; Kinnunen *et al.* 2004, Kosonen 2004, Poranen, 2006). The wider regions for these six cities and towns cover approximately 20% of the Finnish population, but none of them have an independent university of their own in the region.

The total budget of the network (all six filial centres) is around 70 million Euros (2005), which equals around 3.7% of total funding for Finnish universities (Poranen 2006). Only a minor share (around 30%) of this amount is from the Government's budget; the rest of it (around 70%) comes from external sources. Amongst these other main sources are municipalities, regional development agencies

and science park organisations, health care districts, firms and industries, European Structural Funds, and the Finnish research funding allocation agencies and foundations. The University filial Centre Network is, therefore, seen as a possibility for the universities located in the main growth cities to expand their funding sources and opportunities (Poranen 2006). The average share of external funding for the Finnish universities is 30%.

Impact of the initiative and evaluation evidence

The very basic feature of filial centres is that they consist of *several academic institutions*, from three (Kokkola) to six (Seinäjoki). Under the University Filial Centre Network there are approximately one thousand employees (mainly researchers and project workers - including around 75 professors), almost 4 000 degree students and 27 000 students in total (short courses included). Compared to the total number of degree students at all Finnish universities in the year 2005 (total student number in Finland was approx. 170 000 students), a relatively small number of university degrees were produced within the network, but compared with the smallest Finnish campus universities, the number of degrees produced was more significant. Furthermore, in the LFRs the parent universities offer local students several Master's Programmes funded by regional actors (*e.g.* regional councils, district governments, the municipalities and health care districts).

The representatives of the knowledge platforms under the University Filial Centre recognised the initiative as part of the industry's competencies and competitiveness, and began to look for trusted alliances and to organise discussion forums. This implicated a somewhat *unusual activeness on the part of industry representatives and regional decision makers* in participating in renewing processes in the regional knowledge environment (Kosonen 2007). However, there is a great variance as to whether the focus of individual university filial centre actions is on regional development and platform policy or not. Table I.18 shows the main characters or functions separating each university filial centre from its neighbouring ones.

Table I.18: Differences and similarities between university filial centres[2]

	KAJAANI	KOKKOLA	LAHTI	MIKKELI	PORI	SEINÄJOKI
'Geographically closest' universities involved	X	X	X			
Local polytechnic clearly involved	X			X		X
Ph.D. programmes	X	X	X		X	X
Focus on research			X	X		X
Focus on education	X	X	X		X	
Focus on regional development	X	X		X		X
Increased level of publications, projects etc.			X		X	X
Educational innovations		X	X	X	X	
Radical (research) innovations (publications)			X			X
Organisational innovations	X	X	X	X	X	X

Source: Kosonen 2006.

As seen in Table I.18, many university filial centres have determined their effectiveness and main task directly from the regional emphasis, supporting different locally important schemes. In addition, at national level, the University Filial Centres *are proven to be operating in areas of interest similar to the regional and local interests in their respective regions*. Therefore, as two thirds of funding for the Centres comes from external sources (mainly regional funds or stakeholders), various evaluations and reports have noted that cost-efficiency is successfully being met regarding expectations and national decisions to help enhance the regional knowledge economy (Poranen 2006).

Strengths of the initiative

Most of the audits and assessments are mainly carried out by Finnish committee groups or individuals. Similarly, these normally concern only one case region and partnership consortium from the total number of six university filial centres. The audits have been carried out more or less under the theme of further developing the rather dispersed university and polytechnic system of Finland, rather than from the view point of the regional innovation policy. Assessments include, for example: the regional impact of the Pori University Consortium (Poijärvi-Miikkulainen 2004 and Vähäsantanen *et al*. 2006 and 2007), the regional emergence of the Lahti University Filial Centre (Katajamäki *et al.* 2002), the regional impact of Seinäjoki university consortium and Epanet research community (Kinnunen *et al.* 2004) and the development potential of the Mikkeli university consortium (Goddard *et al.* 2003). Arja Poranen from the Kajaani university consortium is one of the few evaluators to give an overview of the whole university filial centre network (all six, 2006), but her point of view lies more on the allocation of resources than on the impact the networks have on regional innovation systems.

In most of the regional audits and assessments the results and outcomes of the university filial centres are seen either positive or promising, however, they are still underlined as evolving institutions. Their activities are typically strongly affected by regional emphases and expectations, which are mainly extremely high, casting University Filial Centres as the main drivers of regional economic growth, but also unlocking the existing knowledge structures. Collecting the main points from the various evaluations and assessment reports it is possible to introduce a summary with three different perspectives of; a) the Finnish State, b) the universities, and c) the regional stakeholder.

From the Finnish State point of view, serving the needs of the less developed communities (in order to strengthen national competitiveness) from 2000 onwards was a turning point in strengthening the knowledge infrastructure in the less-favoured regions. Since 2001 it has been noted in various committee reports (Ministry of Education 2001), governmental decisions and parliamentary declarations (the latest in the newest government platform at the beginning of the year 2007) that the network of six university filial centres is worth developing and is an essential part of a) the Finnish university and higher education system and b) regional innovation systems in Finland. For the Finnish Ministry of Education the starting point in supporting the development of the University Filial Centre Network was to expand university activities to the regions and areas where traditional academic activities had only in a minor role in the regional knowledge economy, rather than establishing totally new universities in these regions (Poranen 2006, VaVM 45/2005). Therefore, the Ministry and Finnish State were seeking to increase the effectiveness of the contemporary university system, rather than to expand the system even further.

From the university point of view, the third strand tasks made it possible for the universities to "review" and start expanding their institutional structures not only internally, but also spatially, namely with other regional and local partners in the surrounding or neighbouring communities. As an outcome of this, many universities launched university filial consortia in 2001–2004 with less-favoured town regions. Together these regions equal approximately 20% of the nation's population, but before the launch of the university filial consortia, they hosted only a few separate institutes, departments or educational offices. For the parent universities, the university filial centres represent experimental spaces to create pilot projects, programmes and collaborative actions together with a) regional stakeholders and b) other universities, in a way rarely proved directly successful in growth city areas. The University Filial Centres are, therefore, seen as spaces to enhance the third strand involvement of the mature and internationally oriented parent universities.

From the regional development point of view, the expectations of the university filial centres in the six town regions have been extremely high, casting University Filial Centres as the main drivers of the

economic growth of their respective regions, but also unlocking the existing knowledge structures. As one outcome of this, all centres have been able to introduce *organisational and social innovations*. The emphasis on regional development varies; The University Filial Centres in Kajaani and Mikkeli are the most active ones in that category. Poranen (2006) points out in her report that the regional stakeholders benefit in various ways from their collaboration with the local University Filial Centres. The stakeholders have utilised the increased R&D possibilities, increased access to facilities, laboratories etc, skilled research employers, project knowledge, and external linkages these Centres offer. The R&D level of the business and industry sectors has notably increased in these regions since the establishment of the Centres (Poranen 2006).

Weaknesses of the initiative

Following discussion on scarce resources and their allocation or usefulness from a national competitiveness point of view, the university filial centre network was 'frozen' to the level of these six towns and their filial centres by the end of the year 2004. This was done in order to see the impact of these centres on their respective regions and universities and on the national higher education system. Due to the sometimes challenging nature of the Finnish higher education system, the branch units have to build their effect mechanisms and their functions through some means other than educational. In order to achieve this, many university filial centres have determined their effectiveness and main task *directly from the regional emphasis*, supporting locally important schemes.

In OECD assessments and reports, the main recommendation for the regional innovation systems and the cluster-type innovation development has been that there should be more emphasis on social, symbolic and organisational innovations. The second main recommendation (for example OECD 2005 and 2006) has been that the creation of common technology platforms and the increase of the technological and scientific base on traditional industries should take place also in the more peripheral and disadvantaged regions. In this respect, the university filial centres are clearly fulfilling their role. In early 2008 the Finnish Ministry of Education launched a strategy for structural changes to the higher education system 2008-2011. In the strategy, the need for reorganising some regional universities and their alliance was addressed. The University Filial Centre initiative was one of the highlighted themes, and was secured in the strategy at this stage as a regional node for extension studies and adult education.

The disturbing factor for both regions and University Filial Centres is the insecure situation of branch units in general and University Filial Centres in particular; their funding is based mainly on temporary funding and the institutional role among the parent universities tends to be weak. In addition, these campus universities differ in their attitudes towards regional service activities, because every university has its own kind of strategy or portfolio of regional effectiveness; the technical universities typically have more expanded and diversified views than multi-educational, 'classical' humanities universities. Furthermore, because of the continuing search for cost-effectiveness and the interplay between the host-university and the branch units, the network has to be able to prove its effectiveness continuously. Moreover, discussion on the orientation of higher education and therefore the regional recruitment of the student base are elements which might affect the status of the university filial centres.

Potential transferability

The studies carried out in Finland (Kosonen 2006 and 2007; Srinivas , Kosonen, Nummi and Viljamaa, forth.) show that in order to create strong local knowledge spaces and systems, there is a need for a) *national instruments* (funding, legislation etc.), b) *regional or local incentives and activeness*, and c) *dense global interaction*, all combined with the locally embedded existence of

active and skilled agencies and people. The University Filial Centres constitute these collaborative research and development spaces in the less favoured Finnish regions. Therefore, an important indirect role for university filial centres as the hosts of policy platforms is to serve as a *public space* or an *interpretative space* for *ongoing local, but globally linked conversations* about the infusion of current technologies and the future direction of technologies, markets and new services. Furthermore, the variation of six university filial centres in six different regions embraces regional 'entrepreneurship' by showing that achieving regional activity and focus is possible if the necessary regional and national stakeholders and main players from the various group of actors participate in these collaborative spaces. This view was strongly highlighted in the study (Srinivas *et al*., forth.) on public-funded technical projects and technology programmes in Finland. Findings suggested that the major industry participants in collaborative technology programmes and initiatives were looking for exploratory or experimental knowledge and deeply committed, long-term coalitions and research alliances. Furthermore, the industry representatives were concerned over the yet unknown results and outcomes and how their companies would be able to absorb new information and knowledge.

For the larger less favoured regions with a strong knowledge infrastructure (as in Wales) the lessons might be double-barrelled: for the less advantaged areas - to establish and support collaborative and applicable knowledge spaces together with industries, local or national knowledge institutions and development agencies and other local intermediaries. For the central areas, towns and cities the lesson might be to enhance public-private entrepreneurship and create development platforms and other collaborative and experimental knowledge spaces, even knowledge laboratories (together with local industries and local knowledge institutions) which are, however, globally orientated and therefore have access to relevant new knowledge created in dense global knowledge networks. Therefore the integration of individual and somewhat independent knowledge organisations into the same platform enhances the knowledge sharing and accumulation in new ways. Similar types of concentrations and local or regional knowledge platforms may reform the regional knowledge structure and attract those stakeholders which have been excluded or difficult to introduce to the collaborative actions.

For further information

Kati-Jasmin Kosonen, Researcher
Research Unit for Urban and Regional Development Studies SENTE
University of Tampere, Finland
FIN-33014 University of Tampere, Finland
Tel: +358 3 3551 8863
Mobile: +358 50 3399 525
kati-jasmin.kosonen@uta.fi
www.sjoki.uta.fi/sente/index_en.php

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ENDNOTES

1. The term is 'University Consortium' in a Finnish context. These are also noted in the OECD Territorial Report 2005 (p.116).

2. Table 1 is constructed in the following way: if there are five universities involved in the Centre and only one institution highlights the importance and influence of research or regional development, but if all institutions highlight the importance of degree education, the general point for the Centre is the 'focus on education'.

INNOVATION VOUCHER SCHEMES (THE NETHERLANDS, WEST MIDLANDS UK, IRELAND)

Stephen Roper
Warwick Business School, UK.

This paper provides an introduction to the Dutch Innovation Vouchers programme based on existing documentary evidence and meetings with the main partners in the programme. Drawing on the Dutch experience, similar schemes have recently been established in Ireland and the UK West Midlands. Based on discussions with those operating the schemes in these two areas, this paper draws out the lessons from these new implementations of the Innovation Voucher initiative for any such scheme in Wales.

Rationale for the initiatives

Effective knowledge transfer and diffusion are seen as central to the effective operation of innovation systems (Cooke and Morgan 1998) or triple-helix type innovation models (Leydesdorff and Etkowitz 1998; Jensen 2004). SMEs, however, generally have low levels of engagement with public knowledge providers (universities, public research institutes) and may see such institutions as irrelevant to their business activities or be unwilling to invest in the search costs necessary to identify relevant individuals. Staff in public knowledge providers on the other hand may feel little incentive to work with smaller firms when the returns from working with larger companies or public agencies are greater (Roper *et al*. 2005). In this context the main aim of the Innovation Vouchers scheme is to build new relationships between SMEs and public research institutions which will (a) stimulate knowledge transfer directly but also (b) act as a catalyst for the formation of longer-term more in-depth relationships. In other words, the Innovation Vouchers are intended as pump-priming funding through which initial relationships can be established.

The context for the Dutch initiative was a widely held view that knowledge sharing between public research institutes and SMEs in the Netherlands was inadequate. Cornet, Vroomen, and van der Steeg (2006) quote a Dutch Ministry of Economic Affairs report which states: "SMEs do not make sufficient use of knowledge that others have to offer, even though the available knowledge could play a major role in developing new products, processes or services"; and "The knowledge exchange between SMEs and research institutions in the Netherlands is not optimal".

The Dutch Innovation Vouchers instrument was therefore proposed as part of the suite of innovation policy instruments – the Innovation Platform – introduced in 2004. This national measure built on previous voucher schemes which had been operated as regional initiatives in the Netherlands. Cornet, Vroomen, and van der Steeg (2006) quote the following examples: "research vouchers" in the province of Limburg (1997-1999), "Southern Netherlands knowledge vouchers" (2001-2004), "inter-regional vouchers" (2001-2002), "cross-border knowledge vouchers" (2002-2004) and "Interreg mid-Benelux area innovation vouchers" (2005-2007).

The West Midlands and Irish Innovation Voucher schemes were both introduced in 2007 following the positive evaluation of the Dutch pilot programme (discussed below). The West Midlands

programme was established originally as a small-scale pilot programme but has since (early 2008) been scaled up to form a substantial regional programme. The Irish Scheme, launched in April 2007 following a recommendation in the 2006 Small Business Forum Report was launched initially as a national programme[1]. The rationale for the Irish innovation voucher scheme was the recognition that many smaller Irish firms have limited absorptive capacity and that innovation vouchers might encourage 'a culture of innovation, and in particular in the service sector'(Small Business Forum, 2006, p. 47).

Description of the Dutch Innovation Voucher initiative

Objectives

The main objective of the innovation voucher scheme is to introduce small and medium-sized enterprises (SMEs) to public research institutions. The details of the scheme have changed since the introduction of the pilot programme in 2004 but the key element is the issuing of an innovation voucher worth typically EUR 7 500 to an SME which can be redeemed for services at a public knowledge provider. The issuing of the voucher has two main impacts, both of which overcome major incentive barriers to the usual engagement between SMEs and public knowledge providers. First, the voucher empowers the SME to approach knowledge providers with their problems, something that they might not have done in the absence of such an incentive. Secondly, the voucher provides an incentive for the public knowledge provider to work with SMEs when their tendency might either have been to work with larger firms or to have no industry engagement.

Cornet, Vroomen, and van der Steeg (2006) summarise the objectives of the 2004 pilot programme as follows:

- To introduce SMEs to knowledge providers (lowering the cost threshold).
- To make research institutions operate in a more demand-oriented way (managing demand).
- To enable SMEs to purchase research capacity from research institutions in order to answer application-oriented research questions.
- To ensure that SMEs use more of the available knowledge among knowledge providers (bridging the knowledge gap).

In other words, the Innovation Voucher provides a means of enabling demand-led knowledge transfer rather than the more traditional supply-led model.

Delivery arrangements and activities

The Dutch Innovation Voucher scheme works broadly as follows. First, the availability of vouchers is advertised widely in the print media. SMEs then submit an application using a simple application form which contains simple eligibility criteria (including a State Aids de minimus statement) as well as a brief description of the problem they would like to solve. Cornet, Vroomen, and van der Steeg (2006) describe the typical problem as 'application-oriented, in the sense that the SME should be able to use the knowledge to improve its products or operational processes. Examples mentioned in the subsidy scheme document are solving a minor technological problem or setting out the possible solutions for a complex technological problem'. Vouchers are then awarded to all firms meeting the eligibility criteria by SenterNovem which is the operating agency, an organisation

supported by the Dutch Ministry of Economic Affairs. If the number of applications exceeds the number of vouchers available then these are allocated by lottery to eligible companies.

Once a Dutch SME has been allocated an innovation voucher, it formulates a research question and commissions a public knowledge institution to find an answer to the question. Assignments then have to be completed within a set time – usually around 6 months. When the assignment is completed – and signed off by SenterNovem – the knowledge institution is given the value of the voucher. A number of other points are worth noting here:

- In a situation where the value of the work undertaken is greater than the value of the voucher the firm is required to pay the difference in cost.
- There is scope for the pooling of vouchers where two or more firms can 'pool' their vouchers to get larger projects undertaken.
- VAT is charged by the public knowledge institutions on the services provided. This is included within the value of the voucher, essentially reducing the value of the services provided.
- Some public knowledge institutions in the Netherlands offered incentives to voucher holders to use their services. In some cases these amounted to offers of increasing the amount of work done in return for the voucher well above the face value.
- In 2004 and 2005, during the pilot phase of the project, SMEs were required to make no contribution to the value of the work being conducted. This changed in 2006 with the mainstreaming of the innovation voucher scheme. See below.

Eligibility criteria relating to SMEs are very broad although certain sectors covered by other support initiatives – notably agriculture and transport – were excluded. In the 2006 scheme an SME is eligible for support if:

- It is registered in the Netherlands and is not subject to a suspension of payments for protection against creditors.
- It satisfies the European definition of a small or medium-sized company.
- It does not specialise in producing, processing or trading primary agricultural or fisheries products or aquaculture products.
- It does not operate in the transport sector.
- It received, in the three years preceding its application for a voucher under this scheme, less than EUR 95 000 in subsidies without the approval of the Commission of the European Communities.
- It has not entered into any commitments, prior to receiving a voucher, with the knowledge institution that will carry out the project.

No ex ante or ex post evaluation of individual projects is included and there is no obligation on the part of the SME or knowledge institution to deliver a project plan. The aim is that administration is very 'light touch' designed simply to ensure basic probity conditions are met.

The development of the Innovation Voucher Scheme over the post-2004 period has been as follows:

- September 2004 – 1st round of the Innovation Voucher pilot scheme with 100 vouchers representing a budgetary commitment of EUR 0.75m. (See Case 1)

- March 2005 – 2nd round of the Innovation Voucher pilot scheme launched with 400 vouchers representing a budgetary commitment of EUR 3m. A notable change in this round was also the extension of the set of research institutes which could participate to include a number of private companies with large R&D departments.

Box I.5: Case 1 LEDs underwater

Harold Tibosch runs a distributor of electrical components specialising in LED lighting. One of his customers who runs a swimming pool asked whether LED lighting was available for the swimming pool. This could replace the existing halogen lighting which was expensive to run and replace. Dot-N, Tibosch's company was awarded an Innovation Voucher as part of the first pilot programme and having approached three knowledge providers settled on TNO Industry and Technology. They offered prototype design services and the supply of five prototype devices. Co-operation went well and the company subsequently set up a production line to produce the LED swimming pool lights.

Source : Innovation Vouchers – Dot-N, SenterNovum, December 2006.

- October 2005 – a further 600 vouchers were made available as part of the pilot scheme due to the continuing demand. One hundred and fifty of these were reserved for joint applications between two or more SMEs. For the first time SMEs were also able to use vouchers to 'pay' public knowledge institutes in Flanders and North Rhine-Westphalia.

- 2006 (and 2007) – The Innovation Voucher scheme has been incorporated as a permanent measure by the Ministry of Economic Affairs having concluded that the pilot phase was successful. The Ministry made 6 000 vouchers available but split the scheme into 'small' and 'large' vouchers. The small voucher is worth EUR 2 500, with each SME entitled to get a small voucher once only. A total of 3 000 small vouchers are available. The 'large' voucher is worth EUR 7 500, however, unlike the pilot project an SME will qualify for these vouchers only if it is willing to contribute one-third of the total project costs. A total of 3 000 large vouchers were made available in 2006.

Impact of the Dutch initiative and evaluation evidence

Evaluation evidence is at present restricted to the initial tranche of Innovation Vouchers distributed in 2004. Cornet, Vroomen, and van der Steeg (2006) report an evaluation of the 1st Innovation Voucher pilot scheme based on data from the application forms and from telephone interviews with 71 voucher winners and 242 firms not allocated vouchers. The first 100 innovation vouchers were allocated randomly among 1 044 applicant SMEs in September 2004. The key points emerging from the evaluation were:

- Around 80% of firms in both groups had some prior knowledge of the research institutions, although a smaller proportion (around half) had previously commissioned any research, primarily because of the expense of doing so.

- Overall satisfaction levels among voucher winners was high although there was less overall satisfaction about the price/quality ratio – perhaps reflecting the point made earlier about the perceived cost of research institutions.

- Estimates of additionality suggest that around eight out of ten vouchers represent projects which would not have been commissioned without the voucher scheme. This level of additionality is high relative to other innovation incentives.

- The majority (76 %) of voucher recipients contracted for assignments of EUR 7 500 only. In other words they added none of their own money to the value of the voucher.

No impact assessment was possible as the time elapsed between the award of the voucher and the timing of the Cornet, Vroomen, and van der Steeg (2006) evaluation was too limited.

Cornet, Vroomen, and van der Steeg (2007) however do report an assessment of the impact of the pilot intervention in 2004 on the innovation behaviour of voucher winners, although they caution that issues of sample selection raise some important caveats about their results. Their analysis is based on firms' innovation outputs in the period 2005-2006 for 47 SMEs with a 2004 voucher and 169 applicants that did not win a 2004 voucher. Significant positive effects are identified on process improvement although no positive effects are identified for product innovation, product improvements, and process innovation. They also conclude that – as in their earlier study - there is a strong positive additionality in terms of the number of new assignments which would not have been commissioned without the vouchers. There is as yet no evaluation of the social value of the vouchers.

Strengths of the Dutch initiative

There is a general perception among Dutch firms, knowledge providers and the scheme's sponsors that the Innovation Voucher initiative has worked well. Engagement from both firms and knowledge providers has been extensive. Firm demand has generally exceeded or matched the level of financial provision and there has been a demand from additional private sector knowledge providers to be included in the scheme. This, and the limited evaluation evidence from the pilot project, suggests that the scheme has worked well in terms of its stated objectives.

The Innovation Voucher scheme is an innovative approach to stimulating demand-led technology transfer. It has proved effective in encouraging SMEs to articulate barriers to innovative development and seek assistance from knowledge providers. In some cases the Innovation Voucher programme has also stimulated new innovation network or partnership development as SMEs collaborate to pool vouchers (see Case 2). It has also proved effective in encouraging knowledge providers to engage – very often for the first time – with SMEs. The programme has also stimulated institutional developments within some knowledge providers as specific offices have been set up to facilitate Innovation Vouchers.

Box I.6: Case 2 - Working together: Combining vouchers for greater effect (Netherlands)

NVOG the industry association for engravers in the Netherlands conducted a knowledge survey to identify best practice in paint applications for engraved signs. The survey was carried out by Nehem KMC, a consultancy for knowledge management. This identified a need for new research to develop appropriate coatings. To pay for the research that was required, three parties each applied for a voucher. They were consultancy Nehem KMC, engraving company Victor Heerlen and the engraving materials firm C. Hecht & Co. BV. All three vouchers were awarded as part of the Phase 2 element of the Dutch Voucher scheme. Research services were provided by an engineer and student group at Fontys Pedagogisch Technische Hogeschool, the only institution of higher vocational education in the Netherlands that deals with practical applications of paint. Work involved testing and simulated aging to provide guidelines for engravers. One industry member commented: "You can always experiment a little on your own. But that's completely different. Thanks to the voucher we now have the results of solid scientific research of value to everybody".

Source : Innovation Vouchers – Dot-N, SenterNovum, December 2006.

From a firm's point of view the Innovation Voucher scheme has been attractive because:

- It has helped the company to harness university expertise to overcome a barrier to developing innovation activity at low cost.
- The application procedure and 'red tape' involved in the scheme is minimal.
- The decision time before the firm knows it has been granted an Innovation Voucher is minimal.
- There are no reporting requirements other than an acknowledgement that the agreed package of work has been completed by the knowledge provider.
- There is the potential to pool vouchers to create larger packages of funding.
- Receipt of an Innovation Voucher – and the partnership with the university – has some value as a signal of R&D and product quality.

Similar factors, along with the obvious revenue stream, have also made the scheme attractive to knowledge providers.

Weaknesses of the Dutch initiative

Before the initial Pilot phase of the scheme it was not clear whether the scheme would fail due to weaknesses on either the demand (firm) or supply (knowledge provider) side. In fact both demand and supply have worked effectively, with the light-touch brokerage working relatively well. In this sense there have been few obstacles to the development of the scheme.

Some administrative procedures have had to be changed as the scheme has matured including a move from a paper based processing system to an electronic application and processing system. In addition, as the scheme has grown there has been a move from an application date based system to an open application system which has helped with managing work flow. These changes seem to have been dealt with effectively by SenterNovum and caused little operational difficulty.

Evaluations of the scheme to date have been relatively limited as indicated previously, with largely positive results. One less positive note, however, was identified in the Cornet, Vroomen, and van der Steeg (2007) evaluation which suggested that the impact of the innovation voucher scheme on firms' interaction with universities might be 'one-off'. In other words, it was not clear from their evaluation that firms which received vouchers were then encouraged to re-engage with universities subsequently. It is unclear, however, at this point whether this result reflects a more general pattern or is linked to the pattern of innovation activity in smaller firms which tends to be relatively spasmodic. That is, a firm which has an innovation voucher – and completes an innovation – may then not engage with a university again until its next innovation episode which may be some time ahead. If this is the case the effect of an innovation on firms' engagement with universities might only be measurable in the medium-term. To date we have only short-term evidence on this point.

More generally, it is probably too early in the development of the scheme to draw firm conclusions about value added and whether or not the short term positive innovation impacts translate into lasting benefits in either enhanced growth or profitability. Both will need longer-term evaluation.

Potential transferability

As indicated earlier, the Innovation Voucher scheme has been implemented already in Ireland and the West Midlands. In Ireland, the scheme is managed and funded through Enterprise Ireland. In the West Midlands the INDEX innovation voucher scheme is being managed by Aston University with a package of funding provided by Advantage West Midlands (the RDA), the Economic and Social Research Council, the Environmental and Physical Sciences Research Council and the European Regional Development Fund. Both schemes provide lessons in terms of assessing possible transferability to Wales.

The INDEX scheme provides Innovation vouchers of value £3 000 to SMEs in the West Midlands to buy innovation support from the region's 13 universities. The INDEX innovation voucher programme was launched in early 2007 as a pilot programme comprising two rounds of 40 vouchers. The first group of 40 vouchers were presented to firms in September 2007. By early April 2008 around 90 percent (37) of these projects had been completed with three outstanding. During late 2007 the regional development agency – Advantage West Midlands – indicated its willingness to provide further funding to increase the number of vouchers which could be awarded to regional firms. Two further rounds of vouchers have therefore been undertaken with 94 live projects in April 2008 and an additional call for 80 further Innovation Vouchers recently published. The extension of the scheme should mean that by end-2008 around 220 vouchers will have been completed.

Operationally, regional engagement with the INDEX project has been strong with all of the West Midlands universities involved in the project. A working Steering Group has proved effective, involving funder and university representatives alongside the Confederation of British Industry, Institute of Asian Businesses and the Birmingham Chamber. Strong engagement has also been evident from firms, with the first round of Innovation Vouchers being oversubscribed by firms by a factor of 5:1 (over 200 applications for 40 Innovation Vouchers). Interestingly, however, network-based marketing has proved most effective, with companies being contacted through representative organisations and trade bodies including the regional CBI, Institute of Asian Businesses and Chambers of Commerce. Media advertising has been extensive but has proved less effective in generating voucher applications. Academic engagement in the scheme has also been strong with over 100 expressions of interest from academics across the region for the first 40 vouchers. In part this is thought to reflect the university-based broker for the scheme. This position is seen as a considerable advantage by the West Midlands team, in terms of both their understanding of the situation of the academics working on the projects and also their extensive regional networks.

Box I.7: Cases 3-5: Examples of voucher uses in the West Midlands

Specialist software development

GPS Vision specialises in developing and leading management training programmes. The company has a proprietary web-based diagnostic system that helps their clients to gain a useful benchmark of its managers' skills and confidence levels before embarking on a development programme. The aim of the Innovation Voucher project was to develop aspects of this system to better enable the client to manage the complete impact, measurement and evaluation process for all their development initiatives. The Innovation Voucher funded 5 days on site work by a member of Aston University School of Engineering, developing usability issues and a web based system to support learning. The Voucher helped to accelerate the development of the software, define requirements for a subsequent commercial tender and develop a positive university relationship for the future.

Electronics design

SplashPlay Ltd is a start-up company and was formed in October 2005 to develop and market the SplashPlay range of products designed to use new technologies to develop learning aids for musicians. The aim is to make learning music a fun and enjoyable experience. The company had worked extensively with universities during the initial development of the product technology. The aim of the project was to design a PCB as part of the SplashPlay application. The voucher funded 4.5 days work to be conducted on site at Staffordshire University by a member of the engineering staff.

Production process evaluation

Mills Forging Ltd is a provider of precision forgings for technically demanding applications who sells worldwide. The company wished to examine the viability of a new production technology, test the properties of the steel produced and conduct a number of other viability tests. The Innovation Voucher provided support for 5 days work to be carried out at the Telford Campus at the University of Wolverhampton, Department of Engineering and Technology

One of the key issues with the programme in the West Midlands has been the very rapid ramp-up in the number of vouchers being offered and the transition from a pilot to regional programme. This transition has been accompanied by requirements from the funders to complete vouchers. Both issues have put pressure on the scheme management group in brokering new relationships and progressing the completion of outstanding vouchers. It is hoped that minor changes to the operation of the scheme should reduce these pressures in the future. First, it was noted that completion tended to be more rapid among those firms with a clear idea of the innovative project they wanted to pursue. This has led to a revision of the application form to require a slightly more detailed description of the project for which the firm intends to use the voucher. This should also help to improve the match between firm and academic. Secondly, vouchers are now valid for six months only from the date of issue. This, it is hoped, will encourage both parties to complete work more quickly or allow vouchers to be re-awarded to other firms.

Looking forward a number of developments are possible which may reshape the scheme in the West Midlands beyond 2008. First, the scheme is at the moment restricted to a range of 'target' sectors on which the funding agencies are concentrating development efforts. Future developments may include extending the scheme to cover a wider range of sectors. Second, to date the majority of the interventions have related to engineering or ICT related activities, with fewer helping firms to improve their innovation management or leadership capabilities. This is significant as management improvement has been seen as a regional development priority. Changes to the framing of the scheme in publicity material may encourage firms to see the scheme as applicable both to managerial as well

as technical aspects of innovation. Thirdly, it is possible that in future firms may be asked to make a matching contribution to the innovation vouchers, reflecting developments in the Dutch scheme.

The launch of the Irish Innovation Voucher scheme coincided with that of the INDEX programme with the scheme offering vouchers of €5 000 along very much the same lines as the initial Dutch pilot measures. The scheme was launched in April 2007 with the first set of 190 vouchers being issued in June 2007. During this initial round of vouchers (and the two subsequent rounds in 2007) demand from the company side has been strong helped by a simple application procedure. During 2008 the number of calls has been expanded to five with the scheme budget large enough to fund all eligible applications. 2008 has seen some repeat business for the scheme as firms have applied for a second voucher and some successes as firms which have completed their voucher have made subsequent applications to Enterprise Ireland for large-scale funding for collaborative R&D. There is a sense in some of these projects that the Innovation Voucher is helping firms to scope out a problem rather than solve it completely. To date, around 20 Innovation Voucher projects have been completed as part of the Irish scheme and a further 120-150 completions are anticipated before June 2008.

There are three key differences between the Irish and West Midlands' implementation of the Innovation Voucher programmes: the character of the administering organisation, the nature of the brokerage service being provided and the treatment of VAT. In the West Midlands the Innovation Voucher scheme is being administered by Aston University, while in Ireland the scheme is being operated by Enterprise Ireland, the national development agency responsible for promoting small businesses. The Irish model here is more similar to that in the Netherlands where the managing agent is an operational agency supported by government. For the moment both the West Midlands (HEI) and Irish (Agency) management structures seem to be working effectively, supported in the West Midlands by an active Steering Group. The involvement of the HEI as a managing agent in the West Midlands, however, reflects the initial establishment of the programme as a pilot project. For Wales there may be some advantages to the scheme being operated independent of the knowledge providers – *i.e.* not by one of the universities – following the Dutch and Irish models. This has, perhaps, three main advantages. First, it avoids any potential conflict of interest between the university as scheme operator and as knowledge provider. Second, it may allow a more dedicated approach to the operation of the scheme than the wider mission of a university may allow. Third, there may be greater scope for follow-through with other supports for innovation if the scheme is administered by a development agency. Enterprise Ireland, for example, indicated that a number of Innovation Voucher holders were now in negotiation with them for larger packages of support for collaborative R&D.

In terms of brokerage the Irish and West Midlands models have differed substantially, although we currently see some evidence of convergence. The Irish approach started off very light touch with Enterprise Ireland dealing at arm's length with both firms and knowledge providers. This led to some difficulties for firms in finding appropriate academic partners and some difficulties for knowledge providers in responding to a relatively high volume of uncoordinated enquiries. In future, an enhanced brokerage service should enable firms to more quickly identify possible partners and reduce the load on knowledge providers. Brokerage is likely to remain 'light-touch' however, with the majority of information being provided through the scheme website. In the West Midlands, attempts are being made to reduce the extent of brokering activity necessary as the scheme has expanded. Both cases illustrate the importance of the brokerage role in any introduction of the innovation voucher scheme into Wales. There is a need both to minimise the application burden on firms as well as provide cost-effective matching to appropriate academic expertise. Developing an effective approach to this activity will be crucial to the effectiveness and popularity of the scheme.

Another aspect of changes in the brokerage system in both areas has been the development of the application forms. Both the West Midlands and the Irish scheme have developed a slightly more

structured application form which now asks firms to provide: a profile of the firm, a summary of their innovation issue, a review of the expertise they are seeking and an indication of the necessary outputs. The aim of this has been to help potential academic partners to more quickly assess their interest in servicing Innovation Vouchers. Adoption of an application procedure similar to that in either Ireland or the West Midlands by the Welsh scheme should contribute to its success.

The initial success of both the Irish and West Midlands Innovation Voucher scheme suggest the value of the scheme for Wales. The foundation of the scheme is its simplicity and light touch administration and this would need to be maintained in any Welsh scheme. Otherwise, effective advertising and promotion, organisational commitment on the part of the universities, efficient brokering and an effective electronic application procedure are all important. Given this, there is no reason why an Innovation Voucher programme might not prove effective in Wales, stimulating university-small business interaction and encouraging innovation.

For further information

The Dutch Index Vouchers Scheme:
www.senternovem.nl/innovatievouchers
innovatievoucher@senternovem.nl

Irish Innovation Vouchers Scheme:
www.enterprise-ireland.com/innovationvouchers

Contact: Pat O'Brien
Enterprise Ireland
Tel: +(353 1) 808 2766
pat.obrien@enterprise-ireland.com

INDEX Innovation Vouchers Scheme
www.indexvouchers.org

Contacts: Judy Scully
j.w.scully@aston.ac.uk

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ENDNOTE

1. Available at: www.smallbusinessforum.ie

SECTOR DEVELOPMENT

FATEC INITIATIVE – ADVANCED FOOTWEAR TECHNOLOGIES (PORTUGAL)

Luis Carvalho
European Institute for Comparative Urban Research, Erasmus University Rotterdam, the Netherlands.

The footwear industry, together with other so-called "traditional sectors" like textiles, is an icon of the changing industrial pattern of the *North* region of Portugal, which has been facing an economic structural change throughout the last decade. The most visible faces of this transition have been sharp job losses and regional specialisation in specific production niches, calling for demanding firm strategies, concentrated on technology and organisation.

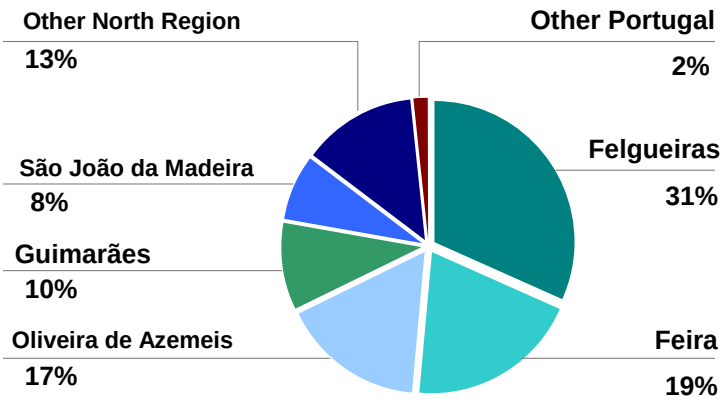
The project FATEC, developed during 2002-2005 by footwear companies, technology providers and institutional players, aimed at the technological intensification of the Portuguese footwear sector, geographically concentrated in the *North* region. It represents a paradigmatic and innovative case of locally organised collective action to steer change in the competitive model of an industrial sector, in which regionally based intermediate institutions played a crucial role.

Rationale for the initiative

Problem to address

The footwear industry in Portugal has been traditionally clustered around three major poles in the *North* Region: *Felgueiras, Guimarães* and the industrial agglomeration formed by the Municipalities of *São João da Madeira*, *Feira* and *Oliveira de Azemeis*. In 2004, these 5 Municipalities represented 85% of the total Portuguese employment in the footwear sector (see Figure I.11), depicting the strong concentration of the sector in the region. The large majority of this industrial fabric is composed by Portuguese owned small and medium sized firms.

Figure I.11 Employment share of the footwear (and components) industry in Portugal, 2004
(total employment = 40 000)

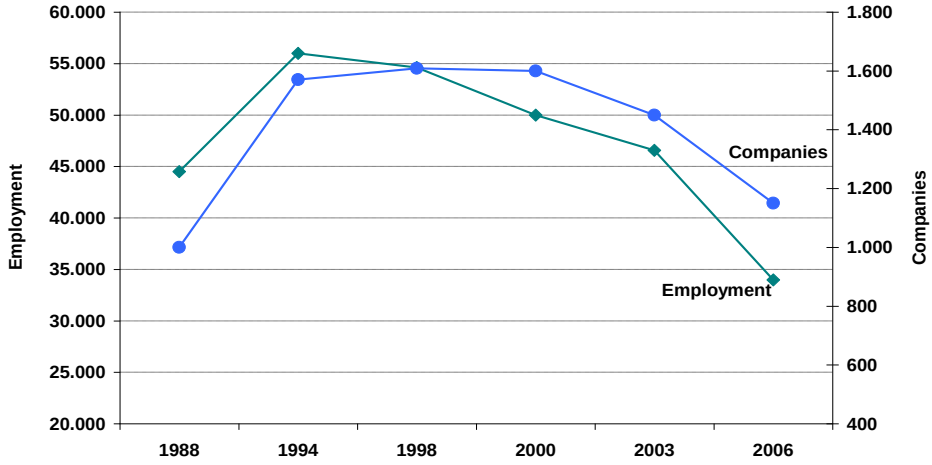


Source: Portuguese Footwear, Components and Leather Goods Manufacturer's Association – APPICAPS, own elaboration.

Until the late 1990s, the sector used to import equipment and machinery for its manufacturing processes, typically of large, non-customised and low added value series. The bulk of the production was targeted for big distribution chains and for outsourcing to multinational firms, localised or not, in the region.

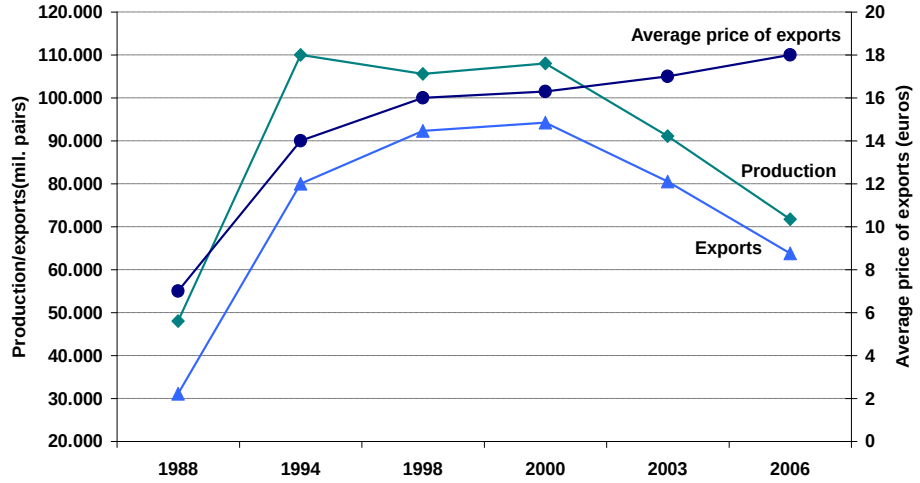
In the early 1990s, globalisation impacts started to hit the sector, leading to the loss of direct foreign investment and production orders to lower labour cost Asian countries, like China or Vietnam. Although the main sectoral indicators were still positive (see Figures I.12 and I.13), the region and their companies were slowly but steadily losing competitiveness in mass production. By that time, the sector foresaw further decline and jointly realised that a strategic move was needed to tackle the new market conditions, namely the flexible manufacturing of small series for specific niches, sophistication of the models, together with the development and design of branded products and just-in-time delivery.

Figure I.12 Employment and companies in the Portuguese footwear sector, 1988-2006



Source: APPICAPS; Portuguese Statistics Bureau – INE; own elaboration.

Figure I.13 Production, exports and price in the Portuguese footwear sector, 1988-2006



Source: APPICAPS; own elaboration.

Nevertheless, the sector lacked the technology for this new positioning. Formerly imported machinery and rigid production lines were inappropriate for the flexibility needs; at the same time, available technology could not cope with the requirements of sophisticated materials and high quality finishing. Moreover, plants presented many logistical and procedural bottlenecks, hampering efficient production, storing and distribution for this new type of footwear.

Policy context

Economic and innovation policies in Portugal are traditionally designed at the national level, without specific sectoral or regional focus. Regions lack political power and have little experience designing "soft" policies. In this context, economic policies at the local and regional level have been focusing almost exclusively on land planning and provision of cheap space and basic infrastructure for companies, in order to lure them inside municipal borders, leading to fragmented and sub optimal results.

From the institutional point of view, before the mid 1990s, cooperation activities involving footwear companies (intra sector, inter sector, inter institutional) were considerably low. However, communication between intermediate institutions in the sector was, and still is, good. APPICAPS (Portuguese Footwear, Components and Leather Goods Manufacturing Association) organises strategic reflection, lobbies with national government and promotes the sector in external markets. CTCP (Portuguese Footwear Technological Centre), based in the region, is responsible for technological vigilance, monitoring and development. Technological centres in Portugal tend to work very closely with firms and many times constitute interfaces between the companies and the academia, decoding 'different languages' and are thus perceived as trustworthy by companies.

In the mid 1990s, the foreseen decline in competitiveness associated with the proactive action of the CTCP led to the first joint development of a strategic 10-year programme for the sector called Footwear Plant of the Future. It was an umbrella strategy, encompassing different projects between footwear companies, technology providers and knowledge institutions, in order to technologically endow the sector for the market transition.

Implemented between 2002 and 2005, the FATEC project (*i.e.* Advanced Footwear Technologies) is still part of that strategic programme. It came after a first consortium to develop new machinery for the sector (project FACAP - Footwear Plant of the Future, 1996-2000) and took place at the same time as other consortium projects, namely for the development of new footwear working materials. Thus, FATEC took place in a time when trust and interaction between companies and intermediate institutions was growing and the players were gaining experience in strategic partnerships for technological development, although the economic context of the region (mix of adverse conjuncture and structural change) was not favourable to invest in large innovation projects.

Description of initiative

Objectives

The *global objective* of FATEC was to develop new world class solutions (equipment, machinery, systems) to tackle the new needs of the Portuguese footwear industry.

To accomplish it, *specific objectives* were set up, constituting the steps of a complete and sequential innovation process:

1. Creation of pre-competitive knowledge.

2. Use of new knowledge in the development of prototypes and experimental processes.

3. Transformation of prototypes into new industrial solutions.

4. Validation of the prototypes in pilot footwear firms.

5. Technology transfer and demonstration of the new solutions in the footwear industry.

Activities

To make FATEC operational, 12 sub projects were established, encompassing strategic areas of footwear production cycle: "engineering and fast 3D prototype centre"; "small series plant"; "leather plant"; "automatic cutting plant"; "automatic production line"; "assembling robots"; "internal logistics"; "maintenance systems"; "information and communication systems"; "operational management systems"; "sectoral innovation studies"; "lab equipments".

In order to accomplish the different sub-projects, a consortium of 18 partners with complementary competencies gathered, most of them located in the *North* region:

- Nine footwear (and components) firms: Aerosoles, Codizo, Kyaia, ACOshoes, Calafe, ZéCasal, CouroAzul, Cortebel and Basilius.

- Five equipment, machinery and software firms: Cei, Lirel, Expandindustria, Zipor and Inocam.

- Four knowledge and technological institutions – CTCP (Portuguese Footwear Technological Centre), INESC-Porto (Electronic Systems and Computers – University of Porto), IST (Engineering Technical Institute - Lisbon), CCG (Graphic Computation Centre – University of Minho).

Each sub-project was derived in a specific working group (whose composition varied according to specific technological needs of firms and competencies of the technology providers). Each working group interactively developed the following tasks:

i) *Research activities*, towards the creation of new knowledge to fulfil footwear firms´ needs (namely when a certain technology was not fully developed yet). These activities were jointly developed by equipment and software firms and R&D institutes (supply of technology), in order to meet the knowledge and technological requirements of the footwear firms;

ii) *Regular meetings*, namely for in-house prototype development and transformation of prototypes into fully fledged solutions. These meetings involved representatives of all three parties in the consortium, and were aimed to fine tune technological demands with the design of the technological solution by equipment firms and R&D institutes;

iii) *Final development and delivery / installation* of the solutions in the pilot footwear firms, a joint effort of the three different parties involved.

iv) *Demonstration sessions* of the solutions for the whole footwear industry. After having the new solutions in-house, the pilot firm opened its doors to all the interested firms, and the functioning of the new technology was explained by the working group responsible for its development.

In many of the sub-projects, desired outputs were radical innovations, thus involving risks and uncertainty for all the players.

Delivery arrangements

CTCP (Portuguese Footwear Technological Centre) assumed the leadership and organisational role from the beginning, as project designer and coordinator, thereby facilitating a successful delivery of the activities.

CTCP invited partners for the consortium. Aware of the footwear firm's core needs and capabilities, CTCP gathered technologically demanding footwear firms to test and implement the different pilot solutions. This was planned to give rise to the most demanding design and development of an effective solution. According to the Director of CTCP, "solutions that work in these firms will work in all the others".

Solution providers (equipment, machinery and systems) were approached and selected according to their knowledge and technological capabilities, to meet footwear firms´ needs. However, when a certain technology was not directly available in the market, or needed further refinement (like for example, integrated electronic systems for a logistical solution, or a specific production line), specialised research institutes were invited for the consortium. All the key players were geographically close – the project was intensive, involving frequent interaction, and many partners knew each other beforehand.

In the second stage, working groups were designed and their specific participants selected, according to complementary competencies, to jointly develop each solution in the most efficient way. Many combinations were possible. Some working groups included the three types of partners, for example, the "small series plant", was formed by one equipment provider - Lirel, two knowledge institutes – INESC-Porto and CTCP - and the footwear firm ZéCasal. In other cases, the groups were formed only by one technological/research institute and one machinery firm, as for the development of "lab equipments" (CTCP with the equipment firm Zipor).

Other relevant arrangements were the joint definition of exploration and intellectual property rights of the newly developed solutions. Different agreements were designed according to the input of different partners in the solution's design. The time span of exploration rights for research institutes was designed to be proportional to their future contribution to the solution's upgrade (due to market "devaluation" of the solutions over time).

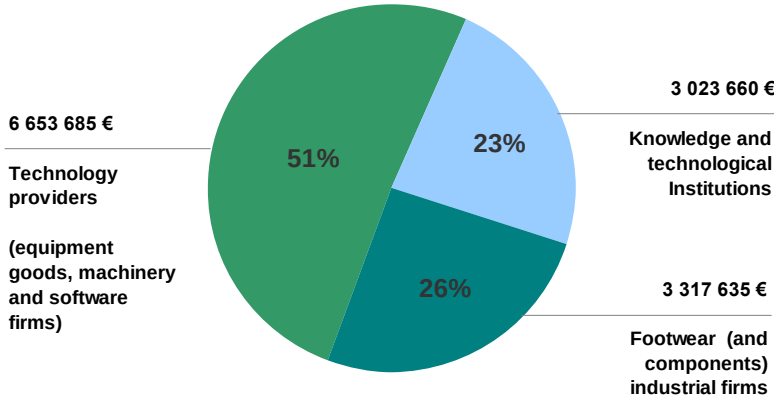
CTCP was present in all working groups and demonstration sessions – it helped to monitor the initiative's implementation and outputs.

Budget

FATEC involved a total investment of EUR 12 995 981 shared by the partners in the consortium. 58.41% of the total investment – EUR 7 590 890 - was funded by European structural funding, through the ERDF (European Regional Development Fund) of the Portuguese Operational Programme of the Economy 2000-2006 (POE/PRIME) – action line 2.2B: *Mobilizing Projects for Technological Development.*

FATEC called for a complex financial engineering. Figure I.14 depicts the total investment efforts of the different partner categories involved in the consortium (total investment values include European funded investment plus internally supported costs of each organisation – co-funding).

Figure I.14 Investment share by partner category



Source: CTCP.

All the partners involved invested heavily in human resources (working hours of researchers, technicians, firm managers, etc), organisation (meetings) and travel expenses. Investments in capital goods, equipment and intermediate inputs, as well as final technological solutions were a shared investment of the technology providers (firms and R&D institutes) and of the pilot firms. The investments related to the demonstration sessions were supported by the footwear firms. The non-funded component of the investment represents a significant part of the financial and organisational risk of the involved players. Co-funding rates of the investments, mentioned previously, varied according to the micro category of expenses involved.

Research activities developed under the setting of FATEC were jointly funded by all of the involved partners. In addition to the relevant European Structural Funding, footwear firms paid a component to the technological providers - both equipment firms and R&D institutions – but the former also shared the risk by investing their internal resources in the project.

Impact of the initiative and evaluation evidence

Outputs

The consortium developed and produced 68 new systems and pieces of equipment, encompassing the 12 strategic areas of the footwear production cycle planned in the working groups.

Each of the developed solutions is currently installed in the plants of the pilot footwear firms. Their development implied intermediate outputs, such as several working group meetings, research activities, demonstration and technology transfer sessions.

Outcomes

Although the time span since FATEC's conclusion (2005) is small, it is already possible to present evidence of relevant outcomes, namely based on partner's perception and documented information. Qualitative evidence was collected through different evaluation meetings between CTCP and the consortium members involved, as well as through other daily contacts and direct observation of the CTCP.

For the footwear industry

Figure I.13 (section 1) depicts recent rises in Portuguese footwear exports as a share of total (declining) production, together with an average rise in price. This suggests that the industry is becoming

specialised in market niches and small series, sold at higher prices than in the past[1]. Although direct causality is obviously not possible to establish, FATEC firms (and others in the industry) acknowledge that the initiative contributed to endowing them with critical technologies for state-of-art product design, cutting, small series and just-in-time deliveries - key conditions to be competitive in footwear international niche markets.

FATEC pilot firms received media exposure for being pioneers in the adoption of new solutions. Moreover, other firms in the industry learned from the pilot firms' experience (they saw the new solution working in other firms) and were able to buy/use the equipment, already fully developed and tested, at a much more moderate price than its original development cost.

For the solution providers and knowledge institutions

The providers had the opportunity to develop commercial technology that could hardly be developed without interaction with the final users (demanding footwear firms) and knowledge institutes. Many solutions were immediately sold by the providers to other footwear firms after the demonstrative conclusion of the solutions in pilot firms.

There is evidence that FATEC contributed to steering the emergence of a strong export sector of equipment goods in the *North* region. Although precise quantifications are not available, many of the products and technologies developed under FATEC are now exported worldwide (see Figure I.15), not only for the footwear industry but for the industry of automotive components, food and furniture, even to renowned equipment producing countries, like Italy or Germany.

FATEC also motivated the development of new firm strategies within the consortium: one of the software providers re-constituted itself as a spinoff of a knowledge institute and other firms re-oriented their strategies towards new market niches in order to explore the developed technologies.

Figure I.15 Technology FATEC in the world

Source: CTCP

To the knowledge institutions involved, such as INESC-Porto, FATEC constituted a large dimension and strategic project, which reinforced the cooperation with the footwear sector and allowed the development of new knowledge and solutions to be applied in other contexts. Moreover, it contributed to establish and solidify networks. There is evidence that many relations between solution providers and knowledge institutes of the consortium continued after the initiative.

For institutional learning in the region

FATEC gave rise to and enforced diverse processes for institutional learning, which were absorbed by the consortium players and by the region as a whole. According to the evaluation by the CTCP and sector association, the players learned: *i*) to take risks and work together with partners with different profiles; *ii*) to define specific industrial development objectives and radical innovations; *iii*) to learn to interact with competitors; *iv*) to create competitive solutions, not only internally but worldwide; and *v*) to establish cooperation networks for innovation and technology transfer, namely between knowledge institutes and industry, improving social capital.

Presently, for the EU structural funding period 2007-2013, the design of public policies for competitiveness and innovation in the region is being influenced by the FATEC methodology, in order to upgrade other traditional sectors (like textiles) and develop new spearhead clusters (like medical equipment and energy solutions).

Effectiveness

Due to the normal uncertainty of the technological development process, the initiative was restructured during its execution – the budget spent and the final amount of equipment were slightly lower than in the first design (the first plan was to develop about 100 new solutions).

Nevertheless, despite this restructuring, CTCP and other partners involved are consensual, acknowledging the full accomplishment of the project objectives, in its many dimensions.

Efficiency

The technological novelty of the outputs makes it difficult to establish comparative and standard costs. Nevertheless, the players of the consortium acknowledged that the solutions developed were cost effective. Although, according to the technology providing firms, the development cost of a new solution was on average three times higher than the already stabilised and commercial solution. The costs to develop it were considered as moderated, being that the financial risk was shared between the consortium partners.

The technology exports for developed and developing economies are proof of the cost efficiency and market commercial validation of FATEC outputs.

Strengths of the initiative

What worked well?

The FATEC framework for sectoral innovation and knowledge transfer was a ground-breaking initiative in the regional context, as a large scale, bottom-up initiative geared towards the technological upgrading of traditional sectors. Footwear firms which formally imported non-customised technology learned how to jointly develop it with other regionally based industrial and knowledge partners, originating a win-win situation and diverse spill-over effects in other regional sectors, such as in the machine building industry.

FATEC brought new cooperative dynamics to the footwear sector. The demonstration sessions helped to foster networking between a large number of footwear firms and other technology providers, towards the development of new projects, while enhancing the perceived value of joint innovation to improve the competitive position of footwear firms.

What was innovative?

FATEC covered the different steps of a full and sequential industrial innovation process, from the basic creation of knowledge towards its transfer and commercialisation. This integrated approach made the initiative valuable for all the involved partners, but also demanded a strong interaction throughout the process, namely to guarantee the commercial application of the final solution produced.

FATEC combined short and long term results, necessary to manage expectations and keep the enthusiasm between different members of the consortium and to conciliate their distinct time frames (namely short-term profitability needs of firms versus the more long-term impacts of the technologies developed). Moreover, FATEC took place within the global framework for regional industrial upgrade, together with other complementary initiatives towards the technological development of the footwear sector (see section 1), combating the development of fragmented and less strategic initiatives in the sector.

Reasons underlying success

Many reasons underlie the success of the initiative and its innovativeness in the region:

Firstly, the *role of CTCP*, acting as a leader, mediator and broker. Its proactive action was essential to *i*) enhance the necessary trust to make footwear firms express their needs, give suggestions, open plants to other partners and competitors; *ii*) clarify *a priori* intellectual and exploration rights, a critical issue in knowledge transfer initiatives; *iii*) invite partners with clear criteria, and *iv*) organise efficiently the working groups according to the partners competencies and complementarities.

Secondly, its large and demonstrative character, focusing on core areas and the sector's central needs. This made the consortium partners willing to join the initiative, which was understood to be strategic for their organisations. Furthermore, the demonstration sessions of new technologies allowed for the involvement of all of the footwear industry in the initiative, who could therefore benefit from the outcomes of FATEC. The sessions provided for effective technology transfer, motivating more footwear firms to adopt the new technology and to learn from the pilot firms.

Finally, the regional dimension of the initiative was important to ensure trust (players knew each other well) and facilitate interaction – almost all institutions were accessible to each other within 45 minutes driving. Meetings could be frequently planned, in-house research and prototype fine-tuning was greatly facilitated by proximity (geographical and institutional).

Weaknesses of the initiative

Obstacles or problems that emerged during the design or the implementation of the initiative

Two organisational bottlenecks were associated with the design phase of FATEC. The first problem was the definition of core technologies to develop and partners to involve in each working group. Some partners tended to propose the development of non-critical technologies, which could hamper the innovative and demonstrative character of FATEC. The second issue was the preliminary discussions on exploration and intellectual property rights for new technologies. Here the main obstacle was to determine to which extent R&D institutes would participate in the future exploration rights of new technologies.

Quality of response taken to obstacles or problems

The experience of CTCP as a "trust mediator" contributed to minimise, if not fully avoid, the emerging organisational bottlenecks. In the first case, the number of less critical technologies and accessory projects was reduced to a minimum, as a result of several meetings and joint consensus by the parties involved. In the second situation, the exploration percentage of research institutes was defined to be, for almost all of the technological solutions, proportional to their continuous assistance in up-grading it over time. This contributed to keeping a balance between the levels of trust and contract control needed for the successful implementation of FATEC.

On the other hand, despite all of the merits and technological advances allowed, FATEC did not curb a process of firm mortality and job losses in the regional footwear industry (as depicted in Figure I.12). This was not, however, an objective of the initiative. The structural change in the region and in the footwear sector in particular, accentuated by globalisation and external contingencies, tended to continually provoke firm closures and job losses even during a period of technological upgrading. Although the time span since FATEC and other similar initiatives is still short, it is not likely that the technological upgrading will create enough new jobs to compensate for those lost in the last years. At the same time, regional growth rates are still too modest to create relevant absorption of less qualified jobs in other sectors, such as services.

Moreover, FATEC did not intervene in some other relevant dimensions of regional footwear firms' competitiveness, such as qualifications and organisation. Although buying technology indirectly provides firms with the incentive to re-organise processes and up-grade human resources (for example, educate technicians to deal with the new machines and cope with new processes), the initiative did not directly include any action towards training and human capital development. If pilot firms tend to have qualified resources at high and intermediate levels, the same is often not true for other footwear firms; furthermore, those qualifications, namely intermediate, are presently scarce in the region.

A new generation of initiatives is presently being launched by CTCP in order to complement and enhance the achievements of FATEC. These new initiatives are specifically related to training and qualifications of different levels of human resources, strategic organisation and new combinations with other regional competencies, through, for instance, the development of new working materials and through a more fruitful combination with sectors such as textiles.

Potential transferability

What are the main lessons for Wales and places similar to Wales?

Promoting effective interaction between firms and research institutes towards win-win situations is central in many if not all regional development strategies, namely in regions with industrial heritage, where business development is a key objective. Hence, some FATEC lessons have the potential to be applied in regions with the Wales profile.

Firstly, the organisational merits of the initiative. Procedural characteristics of FATEC may be used in similar initiatives, not only because it constitutes a full and integrated process of innovation, ranging from knowledge creation to technology commercialisation, but also because of the successful delivery arrangements previously described.

Secondly, FATEC lessons can be used both in "traditional" sectors (like agro-food) and spearhead sectors (like automotive, aeronautics or pharmaceuticals). Although the growth potential can be different, both increasingly need tailor-made technologies to compete worldwide. Moreover, FATEC proved that

high-tech solution providers strongly benefited from the interaction with a regionally rooted "traditional" sector.

Thirdly, FATEC showed that for this type of regional consortium it is important to involve the most apt partners, who can effectively contribute to the development of new business solutions. It may be tempting to directly involve the maximum number of regional firms in the initiative, namely firms with weak knowledge endowments, but many times it is not the best option when the objective is to produce sound and transferable technology. In this context, the demonstration sessions of FATEC were very good solutions to involve the industrial fabric sector in the initiative and effectively transfer technology to weaker firms.

Fourthly, a (broader) regional dimension was appropriated to the consortium design, since it revealed the most capable players (namely knowledge institutes) and made frequent contacts and interaction between the partners possible.

Finally, it is important to bear in mind that a regional economic development strategy should encompass objectives and policy instruments other than sectoral technology up-grading, in a complementary fashion. FATEC stresses that the objectives like unemployment reduction are difficult to achieve through these types of initiatives, namely due to the qualifications mismatch between the "new industry" requirements and former employees qualifications.

Thus, a regional policy mix combined with national policies may be recommended, namely on i) active employment policies to foster reintegration of former workers in other economic sectors, like services; ii) skills and professional training of former workers towards intermediate qualifications demanded for specific sectors and iii) training-consulting activities at the firm level towards the enhancement of strategies more intensive in knowledge and organisation, tailor made for the regional needs.

Considerations for successful adoption in Wales and in places similar to Wales

Similar initiatives in Wales and in comparable regions may benefit from the early involvement of different sectoral representatives in policy design, since they are aware of what is really central for the sector's development in the region, and how to accomplish it. This allows for the fine-tuning of policy action lines and the involvement of potential "project takers" from the beginning, thereby enlarging social support.

It is also important to assure the presence of a strong and established leadership during the entire initiative. In some circumstances (like in technologically dependent sectors composed of small and medium firms), the natural leader can be a sectoral intermediate institution, namely if it is considered technologically competent and supported by the different partners. However, it is important to bear in mind that the leadership and design of similar initiatives in sectors like aeronautics should always be discussed with key players like Airbus.

In many sectors, "cooperation capital" between potential partners is historically weak. In these cases, the design of projects like FATEC may be preceded by smaller projects in order to create trust between players. If a firm has no experience in working with research institutes or does not trust intermediate associations, smaller projects should be designed before a large and demanding consortium is considered.

Finally, the development of similar initiatives should take into consideration that proximity is relevant to allow for frequent contacts, in-house research and development, solutions´ fine tuning, etc. Nevertheless, the regional (larger) dimension is often an appropriate scale to enlist the relevant partners. Thus, it might very well be that a hypothetical initiative to develop new technology for the agro-food

sector in rural areas of Wales can include the participation of the research infrastructure and solution suppliers located in the region's most dynamic urban areas. Moreover, in some sectors where knowledge is very specific and regionally hard to find, the constitution of temporary proximity platforms with partners from other worldwide regions may be considered, if other institutional conditions allow for that.

For further information

J. Leandro Melo
Director
CTCP - Footwear Technological Centre of Portugal
R. de Fundões – Devesa Velha, 3700-121 S. João da Madeira
Tel: (+351) 256 830 950; Fax: (+351) 256 832 554
geral@ctcp.pt
www.ctcp.pt

ENDNOTE

1. In 2006, according with world sectoral data (APPICAPS), only Germany and Italy could sell footwear worldwide at higher prices than Portugal. The average price of the footwear exports from China was 10 times lower than the Portuguese price.

HOKKAIDO NEW INDUSTRIAL CLUSTER POLICY (JAPAN)

Lee Woolgar
National Graduate Institute for Policy Studies (GRIPS), Japan.

This paper is drawn from a field trip to Hokkaido in January 2008 for two interviews with representatives from Hokkaido regional government and the venture capital industry[1]. This data is complemented by desk research and further email communication.

Hokkaido, Japan's northernmost island, is a large (83 453 km²) mostly rural prefecture with a population of 5.6 million. The largest city is Sapporo with a population of 1.8 million. The industrial structure differs from that of the rest of Japan. Data for 2002 suggest that agriculture, forestry and fisheries comprise a larger proportion of Gross Domestic Product (GDP) than for Japan as a whole (3.5% versus 1.3%), a larger construction and building industry (10.0% versus 6.2%), a smaller manufacturing presence (9.7% versus 20.8%), and a larger role for government services (15.0% versus 9.5%). There are similarities in the proportions of service industries, sales, and other industries (METI 2007). Over the course of this decade it has faced higher unemployment than the rest of Japan, with the highest national rate (4.7%) in 2007 (SOUMU 2007a). New graduates have faced difficulties in obtaining employment as well as those between the ages of 15-34 (Hokkaido METI bureau 2006).

Table I.19: Hokkaido: key statistics[2]

	Hokkaido	Japan
Population	5 602 (2007)	127 718 (2007)
GDP	£90 bn[3]	£2.3 trillion
Economic Growth rate	0.7 (2004)	2.0 (2004)
Unemployment Rate	4.7%	3.7%

Hokkaido's innovation system comprises a number of actors. There are 22 universities which include 5 national universities, 24 private universities and 4 public universities. Hokkaido University, which has 6 303 graduate students, is the largest institution and is one of the strongest universities in Japan for collaborative research and contract research with industry[4]. There are also 34 public research institutions in Hokkaido which include the Hokkaido Advanced Institute of Industrial Research (AIST), performing research on life science and energy. These institutional endowments, particularly the public research institutions, have made the Hokkaido initiative well placed to develop a bio-cluster.

There is a low concentration of R&D activity in Hokkaido, with most R&D conducted by SMEs. There are also a range of support and intermediary organisations that include venture support organisations, a technology licensing organisation, an intellectual property headquarters and other support organisations. In comparison to other Japanese regions, there has been a tendency for collaborative research to be performed within Hokkaido. There is also less engagement between Hokkaido University and large firms in comparison to other former imperial universities[5] (Nakayama *et al.* 2007). The number of patents produced has been relatively modest, with 356 produced in 2006.

Table I.20: Innovation system statistics[6]

	Hokkaido	Japan
Universities	33	726
Public Research Laboratories	34	619
University Venture Companies	71	1 590
Patent Registrations	356	126 804

The cluster initiatives presented in the paper are directed towards information technology (IT) and the bio-sciences. The Hokkaido region has seen an expansion of activity in both of these areas through firm sales growth, growth in the number of venture businesses, and employment growth. These changes have been accompanied by a number of policy initiatives and funding programmes that have sought to further develop these trends. According to some national assessments, the Bio cluster in Sapporo has been relatively successful and has been ranked regularly as 2nd or 3rd within Japan by the Nikkei Shinbun newspaper. This evaluation is based on survey results from the administrative offices of bio-clusters throughout Japan and has included a number of variables that include financial support, number of researchers, ability to consult with specialists, regulatory environment, technology transfer and research results, product development support, technology transfer, finance availability, research institutions, industrial participation, and skill development. The paper will explore these initiatives and the policy structures that have been developed in order to outline the implications, if any, for the Welsh region.

Rationale for the initiative

Problem to address

The Hokkaido cluster initiatives have been emerging since the 1970s, based initially on relationships between the Electrical Engineering department at Hokkaido University and local firms. The depth and spread of the initiatives has gradually developed, and recently national and local governments have sought to further promote these clusters by introducing a number of funding programmes to support regional regeneration. The rationale for policy activity stems from four main reasons. First, to build upon, embed, and extend the IT cluster which had emerged from the 1970s, which was felt to be hampered by the lack of an organisational support base (Development Bank of Japan 2000). Second, to address long-standing problems within the Hokkaido economy which has the highest unemployment in Japan (SOUMU 2007a), as well as problems with regards to the employment prospects of new graduates (Hokkaido METI bureau 2006).Third, Hokkaido is a largely agricultural prefecture with a higher proportion of its Gross Domestic Product dedicated to agriculture, forestry and fisheries in comparison to other parts of Japan (METI 2007). This has presented an opportunity for utilising new developments in bioscience and biotechnology research to link with the domestic economy and regional research infrastructures. Fourth, the collapse of a local bank in the late 1990s led to concerns over access to finance for early stage firms and a desire to promote an organisational base that would be able to supply finance and assist with firm development.

As these various factors were reviewed in assessments of the future direction of Hokkaido's economy during the 1990s, a cluster strategy was chosen as the most appropriate mechanism by which to build regional advantage.

Policy context

Over the past decade a number of policies have been introduced that have significantly changed the nature of the Japanese national and regional innovation systems. The most significant change was ushered in by the Science and Technology Basic Law passed in 1995 that provided a role for local governments in formulating and implementing policies for science and technology (1995, art. 4). This has been

accompanied by changes to other laws that have allowed universities to exploit technology transfer and establish relationships with university Technology Licensing Offices (TLOs); and witnessed the relaxation of regulations regarding outside consultancy by university academics. Other measures have sought to stimulate private sector R&D, as well as support Small and Medium Sized Enterprises (SME) R&D activities[7]. Venture companies have been promoted by allowing university professors to form start-ups and be company directors; and through introducing new equity markets to Japan, such as the JASDAQ and Mothers markets. Furthermore, changes were introduced to the stipulations for the capitalisation of a firm, allowing firms to be established with one yen in capital. At the same time, venture support funds have been established by the government.

The National University Incorporation Law passed in 2003 allows the national universities greater autonomy for setting strategic priorities, often resulting in new policies to engage with regional actors (see Saeki 2007: 2). The Science and Technology Basic Plans implemented since 1996 have prioritised research in four main fields, two of which are relevant to the Hokkaido study. That is the information technology (IT) and communications field, and the life sciences field. Furthermore, there have also been specific sectoral policies introduced. In 1999 the Cabinet Office introduced a basic strategy for the promotion of the biotechnology industry. At the same time targets have been set at the national level for the biotechnology industry. These include increasing the number of people employed in the biotechnology industry from 69 000 people in 1999 to 100 000 by 2010 (Hokkaido Government 2005: 6-8).

There are two nationally operated programmes which are relevant to the promotion of regional innovation systems in the Hokkaido context:

The Industrial Cluster Programme

This is implemented by the Ministry of Economy, Trade and Industry (METI). METI initiated this national programme under the Super Cluster Promotion Strategy (2001-2005) with 19 regions selected throughout Japan. A second programme was developed for 2006-2010 with 17 regions selected. These regions are selected through open calls for expression of interest and chosen on a competitive basis.

The Knowledge Cluster programme

This is implemented by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and is also in its second stage. It is a nationally operated fund with regions selected competitively on the basis of the value of their proposals.

Description of Initiative

The Hokkaido initiative utilises the METI and MEXT programmes outlined above, with various actors involved in implementation. The two programmes have both targeted the IT and bio-science sectors, but there are differences in the objectives for each programme.

The MEXT programme is targeted to the development of technological seeds that are then linked with industry. That is, the promotion of a particular technological field that can be internationally outstanding and eventually used to feed into industrial efforts. Hokkaido has been awarded projects in both the first and second stages of this programme. The first stage (2002-6) was dedicated to the IT sector and was called the IT Carrozzeria Cluster. This aimed to create an IT manufacturing workshop through fostering internationally competitive technological innovation. This was based in Sapporo. The second stage (2007-2011) is called the Bio-S Cluster. This is also based in Sapporo and is concerned with the development of technologies and research networks in the biotechnology field. The Bio-S cluster concerns: a) the provision of information on scientific standards of food and health; b) the provision of information regarding health

bio-markers; c) the support of activities by food and healthy food product manufacturers; d) the provision of resources for researchers working on functional ingredients; e) the support of intellectual property activities by small and medium enterprises; f) the development of an evaluation system for the certification of scientific results, to develop a high-level evaluation system for food and food products, and a high-level evaluation system for evaluating the functionality of food products and ingredients and their co-modification; g) the creation of health science companies in Hokkaido that are able to operate internationally.

The METI Industrial Cluster Initiative has also been implemented in two stages in Hokkaido. This serves to create links and networks between actors involved in research and industrial exploitation of IT, and biosciences. The First stage was dedicated to both the IT and Bio Sectors, and ran between 2001 and 2005. The Second Stage also covers these two fields and runs from 2006 to 2010. From 2007, METI also introduced a strategic growth initiative for the bio industry which has ten main initiatives chiefly relating to developing stronger links with overseas actors.

Table I.21: Timescale of policy activity (2001-2011)

	2001	2002	2005	2006	2007	2010	2011
Industrial Cluster project (METI)	Stage I (IT & Bio)			Stage II（IT & Bio）			
Intellectual Cluster (MEXT)		Stage I (IT)			Stage II (Bio)		

The clusters are intended to evolve so that a third stage (2011-2020) sees the emergence of self sustaining expansion of the IT and bio industries within the region, as well as the research capabilities of local actors (see Kose 2007).

Objectives

The initiatives seek to promote networking between companies to complement technology, products and know-how in both the IT and biotechnology sectors. The general objectives are:

1. Development of business environments to promote innovation
2. Creation of new businesses in accordance with national strategies
3. Synergistic effects with local industry promotion
4. Human resource development

For the First Stage of the METI project (2001-2006), specific quantitative targets were put in place with regard to sales, the number of Initial Public Offerings (IPOs), the number of companies with sales above a certain level, and the number of new companies established. Different targets were set for both the bio and IT aspects of the METI initiatives. The Second Stage of the METI project (2007-2011) has a stronger R&D focus through targets set for the number of new projects established both inside and outside the region, the number of sales, and the number of links with overseas companies. For the bio-cluster, quantitative targets have been set for the number of new projects, sales, investment in R&D, and number of links with overseas companies.

Table I.22: Stage II objectives (METI industrial cluster project) (2007-2010)

IT Cluster	Objectives
New Project Development (Joint projects within region)	4 000 cases 1 000 cases
Sales	450 billion Yen (£2.01bn)
Link-ups with overseas companies	80 cases
Bio Cluster	
New Project Development (inc. joint projects within region)	2 000 (1 000)
Sales	500bn Yen (£2.3bn)
Investment in R&D	50bn Yen (£233m)
New Foreign companies	30

With regard to the MEXT projects, quantitative objectives were set within the first stage for product commercialisation and industrialisation, IP right acquisition, and the number of collaborative projects within the cluster. The objectives for the second cluster (presented in Table I.23), include the number of joint projects between different partners, sales, and scale of R&D investment.

Table I.23: MEXT knowledge cluster objectives

Bio-S Cluster (2007-2011)	
Projects	2 000
Sales	500 billion yen (£2.3bn)
R&D Investment	50 billion yen (£233m)

Source: Sapporo City Government (2007)

Activities

The MEXT IT Carrozzeria Cluster saw the creation of a Knowledge Cluster headquarters, staffed by experts in science and technology, to oversee project implementation. The main research was directed towards some key areas including: sensory substitution IT device for the visually impaired, a portable marine computer device for underwater topography and other ocean data, and a communication terminal for the receipt and delivery of hand-written messages. The projects were implemented through university-industry-government relationships, with a focus on patenting the results or incubation; and holding forums and seminars for participants. Activities related to the Bio-S cluster are the same as the IT cluster. With regards to research, this has focused on: allergy immunisation improvement, metabolic function improvement, basic facilities and technologies for university-industry-government collaborative research, application oriented research.

The METI cluster initiatives relate to the following elements, with 2007 seeing a stronger focus towards strengthening links with overseas, especially for the bio sector:

- Network creation, including university-industry-government links

  This has chiefly been focused upon regional network creation and creating links between universities and industry through promoting joint projects; and the use of cluster forums, which comprise members from different sectors. University-industry links comprise both joint projects such as collaborative research, entrusted research, donations and scientific advice and consulting. Since 2007, developing networks between regional firms and overseas actors has also gained in importance according to the Bio Industry Strategic Growth outline by the Hokkaido METI bureau (METI 2007).

- Industrialisation support

  The provision of funds for supporting the development of collaborative projects or other research results. The Bio Industry Strategic Growth outline also notes the importance of supporting firms in the development of their overseas business. For instance, the support of exchange of information and surveys of the bio-industry in China. This also includes incubation support for early stage firms.

- Market cultivation support

  Assisting firms in links with domestic and overseas firms through business matching services; assistance with intellectual property (IP) acquisition.

- Financial Support

  The provision of early stage venture funds used for the development of the venture support industry as well as venture firms.

- Human resource training

  The provision of training at various levels, from technical to advanced, to nurture the development of a skilled workforce. The METI Bio Industry Strategic Growth outline sees further emphasis placed on the enhancement of managerial and advice support related to patents and bio-ventures.

There are also a number of other softer activities which have been promoted. These include the promotion of bio-café, which takes the model of science cafes, to raise awareness and interest in biosciences; a nationally organised venture business contest is organised by METI Hokkaido bureau in cooperation with a national newspaper company and this is now in its second year. Here, the venture outline should be based on the outcomes of university research.

Delivery arrangements

Actors involved in the delivery of the IT Carrozzeria project include industry (around 15 companies), universities (around 15 members), and government (3 organisations). The Bio-S initiative includes around 30 industrial members, 11 university members, and one governmental organisation. In both cases members are drawn both from Hokkaido and other regions in Japan. The Bio-S initiative includes one overseas university. Outreach services are provided by the Sousei Center at the University of Hokkaido which was established in 1995; and the Cooperative Research Center at the Obihiro University of Agriculture and Veterinary Medicine, amongst a range of other organisations. The NOASTEC centre in Sapporo plays a key role in supporting the cluster initiatives through the creation of consortiums (in 2007 these focused on the development of agricultural sensor systems for detecting insect damage of produce; and the development of new medicine), and cluster promotion projects and meetings. These have four main dimensions: 1) R&D support (including network promotion, university-industry projects, and R&D subsidies), 2) promotion and coordination of applications; 3) university-industry activation (promotion of research and business parks, promotion of collaborative research; 4) support through technology transfer, personnel training seminars and information distribution.

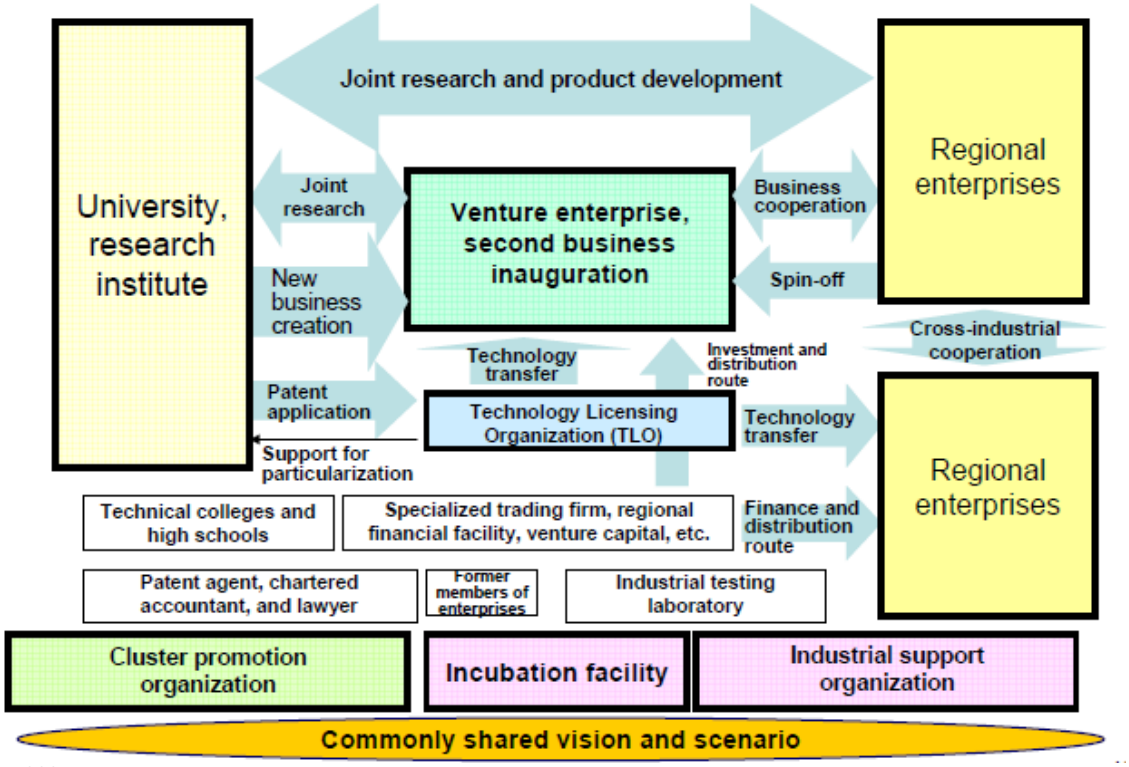
With regards to the METI industrial cluster projects, the IT forum has 306 corporate members, as well as university and research institute members. The bio cluster includes 100 corporate members, universities[8], researchers, research organisations and intermediaries. An overview of the different players

and the flow between them are presented in Figure I.16. Most of the firms that are engaged in the clustering initiative are SMEs in the food or agriculture sectors, with the second largest proportion in the medical and pharmaceutical sectors.

In Hokkaido itself there are a number of key research actors that play a role in the bio-cluster. These include the Advanced Industrial Science and Technology (AIST) Hokkaido research centre, which performs research in two main areas: 1) Life sciences and technology, which includes the Research Institute for the Genome based Bio-factory, and the Drug Seeds Discovery Research Laboratory; 2) Environment and Energy, which has the Methane Hydrate Laboratory. In terms of functions the AIST centre performs collaborative research with industry, contract research and technology consultancy. It also maintains a technology transfer centre as well as a Bio-venture Incubation Center (established in 2002) for assisting new start-ups. At the Graduate School of Life Sciences of Hokkaido University there is the Post-Genome Research Centre, which also provides graduate level teaching.

The overall relationship between the different players and the flow between them are presented in Figure I.16.

Figure I.16 Internal structure of industrial cluster (Players and Business Flows)



Source: Kose 2007

Budget9

The budget for the initiatives is presented in Table I.24. Both projects are largely of the same scale. The METI cluster project was budgeted at £262m per annum for the first stage and £232m per annum for the second stage. For the first stage, 19 regions were selected; this was reduced, following reorganisation, to 17 regions. The MEXT cluster initiative is also budgeted at 600m per annum during the first stage, rising to 46m per annum for the second stage.

Table I.24 Budget for each initiative

	1st Stage	2nd Stage
Industrial Cluster project (METI)	National total 568m pa (5 years) (£26.2m)	Total 500m pa (£23.2m) (5 years)
Intellectual Cluster (MEXT)	600m pa/region (£27.9m)	1bn pa/region (£46m)

Impact of the initiative and evaluation evidence

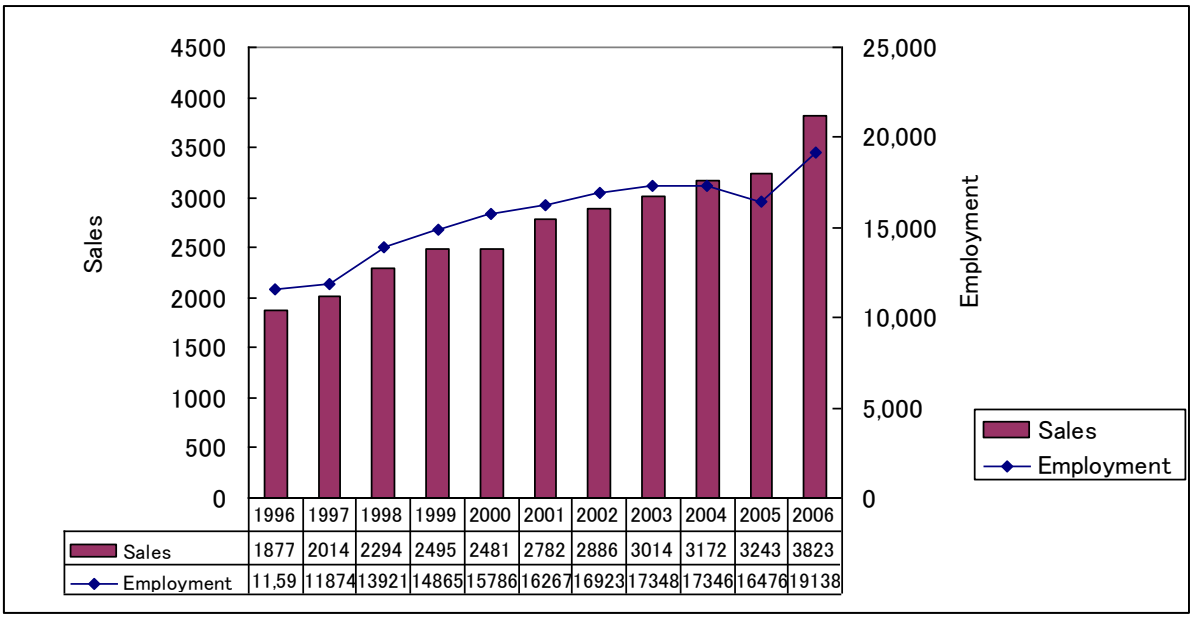
There are two types of evaluation evidence for the initiatives. Annual monitoring of the initiatives is performed by the Hokkaido Bureau of METI. This provides data on the number of sales, employment trends, the types of firms involved in the initiatives, R&D expenditure trends, links with overseas, and issues that are faced. This data is drawn from survey questionnaires with firms solely within the Hokkaido region, and is executed both with the IT and electronics cluster and the bio cluster.

The second type of evaluations is on a national level, which again uses survey data from firms that have participated in each of the regionally implemented projects. These analyses have taken place on an annual basis since 2004. These surveys are more concerned with behavioural aspects and the perception of benefits. One issue that confronts use of these surveys however, is the use of different measures between surveys, complicating longitudinal analysis.

Outputs

The report on development in the IT cluster suggests across a number of indicators that there have been some changes in this sector since the mid 1990s. Firstly, by reference to Figure I.17, it is shown that the number of sales have increased from just below Y1877m (£122.6m) in 1996 to near 4 000m (£261m) in 2006. Employment has similarly increased rising from around 10 000 in 1996 to nearly 20 000 in 2006.

Figure I.17 IT sales and employment in Hokkaido (1996-2006)



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Sales	1877	2014	2294	2495	2481	2782	2886	3014	3172	3243	3823
Employment	11,59	11874	13921	14865	15786	16267	16923	17348	17346	16476	19138

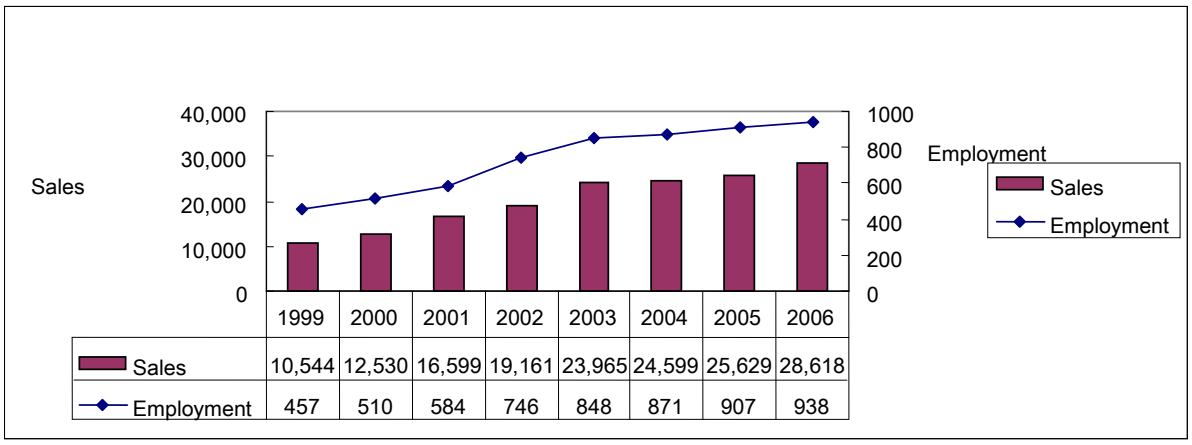
Two points may also be raised with regard to Figure I.17. Firstly, the upward trend largely precedes the cluster initiative. Second, the upward trend also largely coincides with the upturn in the Japanese economy which occurred in the period since 2002. However, according to data by the Ministry of Internal Affairs and Communications, the overall number of employees in the IT related sectors for Japan

decreased by 10.0% between 2001 and 2004 (SOUMU 2007). In Hokkaido, by contrast, there was a 10% increase over the same period.

Over a number of years, the number of firms with development offices in the Sapporo region has also increased. This has included Microsoft which established an innovation centre at the Electronics Centre in 2007 (Microsoft 2007), IBM at Sapporo Technopark, as well as a large number of SMEs. For the bio-industry, the number of firms in Hokkaido has increased steadily since 1999. In 1999 there were 34 such firms in the region, with an increase to 94 firms by 2006. In terms of the focus of these firms, the majority (41.5%) are engaged in work related to agriculture and foods (this includes seeds and seedlings, plants, agricultural and marine products, functional microbes for use in food products), the second largest group (29.8%) are engaged in work related to medical products and pharmaceuticals (including DNA synthesis, DNA array, antigen and antibodies, cell cultures, toxicity safety tests, medical diagnostic technologies) followed by 13.8% that are engaged in work related to the environment (using microbes for environmental purification, biomass equipment), and other fields (14.9%) (bioinformatics, bio related research and development or facilities). In Hokkaido, 89.2% of these companies are classified as small and medium sized enterprises, that is, firms in the manufacturing sector that have less than 300 employees, and capital less than 300m Yen. In the case of the service industry SME firms are defined as having less than 100 personnel and capital of less than 50m (see appendix b).

Within the bio cluster, similar upward trends across a similar range of indicators can be observed. In Figure I.18, sales figures have increased from around 10.5b Yen (£6.8m) to 28.6b Yen (£18.6m); the number of people employed in the bio sector has also increased, rising from 457 in 1999 to 938 in 2006.

Figure I.18 Bio sector sales and employment (1999-2006)



	1999	2000	2001	2002	2003	2004	2005	2006
Sales	10,544	12,530	16,599	19,161	23,965	24,599	25,629	28,618
Employment	457	510	584	746	848	871	907	938

By sector, the agriculture and food sector comprises the largest proportion of sales at around 54% of total sales. On an annual basis since 2000, the average growth rate has been in the range of 16% for the agriculture and food sector, and 15% for the medical and pharmaceutical sector.

Table I.25: Sales figures and annual percentage change for the agriculture and medical sectors in Hokkaido, 1999-2006

		1999	2000	2001	2002	2003	2004	2005	2006
Agriculture and Foods	Sales	5 772	6 831	9 691	11 270	12 088	12 417	14 330	15 733
	% change per annum	-	18.3	41.9	16.3	7.3	2.7	15.4	9.8
Medical and Pharmaceuticals	Sales	4 740	5 620	6 802	7 690	11 513	11 355	10 306	11 642
	% change per annum	-	18.6	21	13.1	49.7	-1.4	-9.2	13

Employment trends in the bio sector have also been subject to large changes and the number of researchers has gradually increased from 239 in 1999 to 432 in 2006. As a proportion of the total, the number of researchers has decreased slightly from 52% in 1999 to 46% in 2006. However, overall employment growth has been relatively modest over recent years averaging 3.4% for the 2004-06 period; and averaging 18.6% for the 2001-03 period.

Table I.26: Employee trends in the bio sector in Hokkaido, 1999-2006.

		1999	2000	2001	2002	2003	2004	2005	2006
Employees	Personnel	457	510	584	746	848	871	907	938
	% change per annum		11.6	14.5	27.7	13.7	2.7	4.1	3.4
Researchers	Personnel	239	251	267	327	351	402	408	432
	% change per annum		5	6.4	22.5	7.3	14.5	1.5	5.9

As with the rest of Japan, the number of venture companies from universities in Hokkaido has also increased (as presented in Table I.27). A venture company is defined as a company that is established within the last five years, characterised by new technological, service or other products, ultimately aiming for an IPO and with the potential for high growth, and no capital provision from a larger firm. On a national basis, the overall share of venture firms for Japan has increased from 3.7% in 1997 to 3.9% in 2006. In total the number of ventures has increased from 17 in 2001 to 59 in 2006, an average of 8.4 companies on an annual basis over the 2001 to 2006 period. Overall, the proportion of bio related ventures in Hokkaido has begun to increase, rising from 30.4% in 2002 to 54.2% in 2006.

Table I.27: University ventures in Japan and Hokkaido

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Japan	134	171	232	337	502	693	900	1132	1364	1503
Hokkaido Bio	0	1	2	2	2	7	9	17	27	32
Hokkaido total	5	7	7	13	17	23	37	50	59	59

Source: METI Hokkaido Bureau 2007

In terms of employment and sales, venture companies within the bio cluster established from research derived from universities in Hokkaido have also seen upward trends, both in sales and the number of employees. The number of employees has increased from 19 in 2000 (4 companies) to 168 employees in 2006 (24 companies).

Turning to the type of research that is being conducted, within most firms there are two research themes which are being pursued by an average of four researchers. In terms of research and development expenditure, this is an average of £171k; with most firms seeking to have a commercial product after two

years. According to some research and given the policy timescale, Japan's venture firms have faced difficulties in moving towards more rapid growth, especially when compared to other countries (see Kneller 2007). These points will be discussed in greater detail further below.

Outcomes

Survey findings from firms that have participated in the industrial cluster project by METI also shed some light on project achievements. In Table I.28 survey results from 2 395 companies across Japan are presented for a survey performed in 2004 (MRI 2005). These figures show responses to questions on the performance of the project. Both Table I.29 and Table I.30 show some differences between the Bio cluster and IT clusters implemented in Hokkaido against the national average.

The IT cluster lags slightly behind the Bio cluster and across all measures the bio cluster is above the national average on 93.7% of measures. There are significant differences in relation to the provision of information (measures (a) and (c)), the creation of firm and university networks (f), technology support (k), and personnel training (p). The IT cluster by contrast is only above the national average on 31.3% of measures, but performs particularly strongly in relation to measures for developing relations with firms. For instance, visits to firms (g) and introductions to firms (m) are both significantly higher than the national average.

Table I.28: Questionnaire responses regarding the evaluation of IT and bio projects in Hokkaido in comparison to the national average for all regions

(2005, %, n=2 395)

	Hokkaido Bio	Hokkaido IT	All Regions
a) Email Information Service	48.9	40.2	32.8
b) Project homepage	28.9	8.3	15
c) Database of project Universities/technologies	35.5	6.6	13.6
d) Database of project firms	21.2	11.3	12.4
e) International Meetings	12.6	0	11.4
f) Creation of firm & univ. network	46.3	26.4	30.8
g) Firm visits	33.3	42.1	31.3
h) Advice and consulting	50.2	22.8	33.2
i) Univ. seeds & Ind. needs matching	38.5	0	29.6
j) Specialist seminar	0	28.6	26.9
k) METI technology support	79.3	48.5	54
l) University-industry collaborative project	64.8	0	30.6
m) Firm introduction	22.2	26.1	17.9
n) Fairs	34.7	33.3	25.8
o) Seminars	29.3	9.9	18.5
p) Personnel Training	41.6	8.2	25

Source: MRI (2005)

In Table I.29, responses to the 2007 survey undertaken by Libertas Consulting are presented. This survey collected responses from 3 195 firms. Again, this table shows some differences in the performance of each project. Across 88% of measures, the bio cluster scores above the national average. For the IT project, 11.7% of measures are above the national average. This is in relation to links with similar types of regional firms (a) and perceived contribution to the regional economy (f) suggests that participants in the IT cluster report lower scores than those in the bio cluster (Libertas Consulting 2007).

Table I.29: Questionnaire responses regarding the evaluation of IT and bio projects in Hokkaido in comparison to the national average for all regions (2007) (%)

		Hokkaido Bio Project	Hokkaido IT Project	All Projects
1	**Sense of Project**			
a	Links with similar types of regional firms	46	34	30
b	Links with different variety of regional firms	53	35	44
c	Opinion of regional Univ.-Ind. Relationship	63	37	51
d	Opinion of technological development	60	42	54
e	Opinion of new projects, services and new products	57	49	53
f	Opinion on contribution to regional economy	52	41	37
g	Opinion on Business creation and IPO	17	11	19
h	Opinion on administrative support services	49	35	45
2	**Network Structure**			
a	Development of relations with firms within cluster	32.1	12.3	20.1
b	UIL relations with firms within cluster	33.3	9.5	24.2
3	**Innovation**			
a	Ratio of firms undertaking new R&D	40.2	15.7	28.6
b	Ratio of firms that have applied for patents	19.5	2.7	13.5
c	Ratio of companies that have developed products	23.6	8.3	13.8
d	Ratio of companies incorporating new technologies/process	9	3.3	4.8
4	**Economic Outcomes**			
a	Ratio of firms in project with increased sales	12.8	8.6	11.3
b	Ratio of firms in project with increased profits	10.5	6	8.8
c	Ratio of firms with increased employment	5.9	3.5	6.5

Source: Libertas Consulting 2007

Using the above data, Libertas Consulting then came to an overall evaluation score for each region based on calculating six main variables. These variables were: 1) Participant Satisfaction, 2) Economic Outcomes, 3) New Business Creation, 4) Research and Development, 5) Relationships, and 5) Cluster Core, according a range of 40 different measures. Depending upon the score allocated, each of these variables was accorded a rank from A-D, with 'A' being the highest score based on scores above 60; 'C' the lowest score with less than 44. The overall evaluation scores for both the IT cluster and Bio Cluster projects are presented in Table I.30.

Table I.30: Evaluation outcomes for the IT and bio Cluster (2007)

	IT Cluster	Bio Cluster
1. Participant satisfaction	C	A
2. Economic outcomes	C	B
3. New business creation	B-	B
4. Research and development	C	B+
5. Relationships	C	A
6. Cluster core	C	A
Overall evaluation score	**C**	**A**

Source: Libertas Consulting 2007: p. 59 and 63

Again, this table shows some differences in the performance in each cluster. Firstly, the IT cluster gains an overall evaluation score of 'C'. This is with the exception of new business creation which gains 'B-'. The bio cluster overall scores an 'A' grade, scoring lowest on research and development (B+).

The degree to which the objectives for Stage I have been met are presented in Table I.31. This suggests modest success with respect to the quantitative targets set for Stage I of the project. There is

underperformance on all measures in relation to the IT project, obtaining 80.07% of the target for sales, 58.3% of the target for IPO's, and 68% of the target for the number of companies with sales above Y10b. However, the bio cluster has a lower score towards its objectives, obtaining 71.5% of its targets for sales, 33% of the target for IPO's and 73.3% of the target for creation of new companies.

Table I.31: METI stage I objectives and achievements (2006)

	IT (2006)		Bio (2006)	
	Objectives	**Achievement**	**Objective**	**Achievement**
Sales	Y 4 000b (£1.8bn)	Y 3 243b (£1.5bn)	Y 400b (£185m)	Y 286b (£86m)
IPO	12 Companies	7 companies	3 companies	1 company
Companies with sales above Yen 10b	60	41	-	
Creation of new companies	-	-	15	11*

Source: METI (2007a: 47; 2007: 81); (*2005)

By contrast, the MEXT initiative shows closer proximity to the stated objectives, surpassing the number of objectives for product commercialisation (Table I.32).

Table I.32 MEXT knowledge cluster objectives and achievements

	IT (- 2006)	
	Objectives	**Achievements**
Product Commercialisation/Industrialisation	2	9
Intellectual Property rights	25	22
Collaborative projects within the Cluster	50-100	49-96

Source: MEXT 2006b

Survey results suggest the main benefits to be the strengthening of managerial capacity (51.7%), and strengthening of technological capacity (47.9%) (MRI 2005). Aside from these survey results, some further network analysis of the bio-clusters as a whole suggests that the links between different actors have both broadened and deepened. In comparison to the 1980s and 1990s, there are now network relations in a broader range of fields, which includes food, pharmaceuticals, medical products, bio-informatics, the environment, and agriculture (METI 2008: 78).

Efficiency

Considering that there is a strong R&D element to both these initiatives it is perhaps still too early to assess the costs and benefits at this stage, which normally would be visible possibly up to 20 or more years after the initiative was introduced. However, we have seen that on an annual basis national government funding is equal to around £50m per annum during the first stages of the METI and MEXT programmes and equivalent to around £60m per annum during the second stages. This approaches a total of around £540m.

Considering this level of expenditure, currently the outcomes of the project may appear rather modest. At a simplified level of analysis, during the first stages, it is possible to observe 2871 jobs being created in the IT sector in the period between 2001 and 2006; and 192 jobs in the Bio sector in the period between 2002 and 2006. In total 401 jobs have been created during the period when the two initiatives were running. With regard to venture companies it is possible to observe the creation of 25 bio-ventures in Hokkaido during the 2002 to 2006 period. This is a 25% increase, contrasted with a 2% increase for the period 1997 to 2001. There have been 7 IPOs for firms in the IT sector, and 1 IPO in the bio sector. 9

products have been commercialised and 22 IP rights; there have also been around 100 bio-science collaborative projects.

While the achievements of the initiatives at this stage appear to be relatively modest, it should be remembered that, a) survey responses from firms have tended to endorse cluster policies; b) cluster policies are still at an early stage and in policies of this nature the realisable effects may be far in the distance. It is difficult to assess overall what significance the initiative has had at this stage and the changes that are clearly happening within the Hokkaido economy could be due to the upturn in the Japanese economy, the growing importance of the bio industry, or indeed, the stimulation from these particular initiatives. Over the longer term, the role of network effects, and the role that the various support and assistance schemes have played in the development of creating locally successful firms and an IT and bio sector within Hokkaido will become clearer to observe and analyze. The evidence presented so far suggests that there have certainly been changes in the IT and bio sectors in Hokkaido. It is perhaps still too early to judge the proper role that policy has played at this stage.

Strengths of the initiative

What worked well?

The surveys referred to above tend to suggest that the initiatives have a number of strengths. The IT cluster is seen to include a number of prominent firms and is likely to yield results within a short time-scale. The bio cluster by contrast is seen by participating firms as a project that has merit, and is relatively well known both within and outside Hokkaido. The bio cluster is expected to yield results over the longer term in comparison to the IT cluster.

Table I.33: Opinions regarding the project by participant firms*, 2005

	Objective of the project is easy to understand	To feel that the project has merit	The Project is developing Favourably	Project will take a long time to yield results	Project expected to yield results within short time scale	The project is known both within & outside the region	Well known companies are prominent in this project
All Regions	17.6	13.2	4.8	23.9	11.2	3.6	5.1
Hokkaido IT	10.1	11.0	3.7	22.0	11.9	1.8	5.5
Hokkaido Bio	27.1	31.9	12.8	25.5	6.4	10.6	8.5

Source: MRI (2005: 101); *this is the proportion that strongly agree with the statement.

The initiative has been seen to work well in respect to drawing on the institutional endowments present in Hokkaido and in strengthening the links between the different ranges of actors within the region. According to the 2008 Bio Report, just over 80% of firms within the cluster have developed relations with external actors, in most cases with university actors. For instance, in research related to food and health care, university-industry links have allowed large, medium and small sized firms to gain access to high level research and development activities. Additionally, allowing access to specialised advice and consultation, particularly for small firms. Thirdly, allowing access to the use of research facilities (Hokkaido METI Bureau 2007a). The types of links have also varied across the research cycle including research and development, search and investigation of idea and potential seeds; evaluation and testing, and manufacturing.

What was innovative?

An aspect of the innovative nature of the cluster is how two different ministries are utilising funds for broadly the same purpose, but through different channels and different organisational structures. The MEXT programme is more oriented to research promotion and development; while the METI programme seeks to draw on this and link it within the network structures, firm development and incubation facilities that have been put in place.

Reasons underlying success

Interviewees felt that a key strength of the initiatives was the relative consensus that exists between different actors involved in the initiative. It is widely acknowledged that the Hokkaido economy needs to readjust and adapt, and the cluster initiatives have been embraced by most of the key players as a means to achieve this. However, interviews suggested that there may be less cohesion of opinion on how these clusters should develop in the future. Other strengths were felt to include the university base and public research institutes, as well as the natural endowments in terms of agriculture, forestry and fisheries which fit closely with the objectives of the bio cluster. The institutional base which has supported ventures and performed collaborative research with industry pre-existed the initiative. In that respect the policies "fit" with the institutional endowments and capabilities, although as discussed below, there are some issues on the demand side.

Weaknesses of the initiative

Various issues were outlined by interviewees, chiefly relating to funding issues but also the implementation of the initiative in relation to the local economic structure, particularly on the demand side.

- Finance availability - The availability of finance for early stage firms at the stages between the period of research development and towards the period of product development and exploitation was felt to be necessary, requiring the provision of continuous financial streams. These were seen to be insufficient by interviewees. This issue has also emerged in surveys undertaken with regional venture firms, where a survey with Hokkaido bio-venture firms ranked the securing of finance as the most important issue. This was cited by 55 companies (METI 2007).

  It should also be noted, however, that this is also an issue of national importance and not just specific to the Hokkaido context. For instance, OECD data has confirmed the low presence of venture capital in Japan, which is the second lowest in the OECD (OECD 2007). In general, as Kneller has observed, most finance has tended to be provided to start-ups by public sources (Kneller 2007).

- The "fit" between the initiative and the economic structure within Hokkaido – This was outlined as a key point by interviewees who felt that although Hokkaido possesses a large number of endowments on the supply side, that is, a large pool of researchers engaged in bio-science related research, as well as a large potential pool of technological seeds, there was insufficient pull from the demand-side. While Hokkaido has a number of venture companies, overall the number of R&D performing bio and SME companies is quite small with relatively low levels of R&D expenditure. The small number of large firms in Hokkaido was also seen as a hindrance and may limit capacity for endogenous exploitation of technological seeds.

- Too many organisations involved in delivery - There are a large number of public organisations involved in the process of implementation, and some observed that this complicated how the policy was implemented. Furthermore it was noted that many of the employees in these

organisations lack private sector experience and are unfamiliar with risk, which can lead to conservatism. It was felt that movement towards a privately funded basis might overcome this.

- The environment for clinical studies – The environment surrounding transition from research to clinical trials toward industrialisation is seen as an issue by interviewees. The regulatory frameworks structuring drug trials and development have been lengthy, and thereby expensive. The Hokkaido Association for Bio-Business has argued that there should be greater support for this.

As with some of the other points, this is also a national issue.

- Research and Development Support - Adequate public funds for research were seen to be of importance.

Obstacles or problems that emerged during the design or the implementation of the initiative

A number of issues have emerged during the implementation of the project. These can be summarised as:

- Human resources - according to surveys with bio venture firms, an important issue is the recruitment and nurturing of researchers, with 47 companies recognising this as an issue of importance. This was featured as the most important issue in a number of the bio reports. A review of across the board skill requirements also found that there were three types of skills that were in high demand. These related to managerial skills, marketing skills, and research management skills.

  Similar problems are encountered in the IT cluster, with firms reporting difficulties in the recruitment of system engineers and programmers (METI 2006: 35). In another nationwide study, Kneller found amongst 30 bio-venture firms in Japan that recruitment has so far been a major problem.

- Exchange with overseas - Firms in Hokkaido are seen to be insufficiently motivated to develop relationships with overseas actors. This aspect of the cluster has only come to gain importance to the initiative over recent years, but some interviewees felt there was some insularity in outlook amongst many actors, and a more diverse Hokkaido would help further develop the cluster initiatives. For this, however, greater skills in English were seen to be necessary.

- Technology Transfer Frameworks – There are two main issues here. First, the number of people able to coordinate technology transfer was seen as an issue due to the diverse range of skills and experience that are required to work in this field. While this should also be seen as a nationally relevant issue, interviewees felt that it was also of some relevance in the Hokkaido case.

  Secondly, according to surveys with bio-science researchers within Hokkaido in 2001 and 2004 a number of problems were seen to arise. These were mostly related to changes in the rules governing university-industry links, which had been introduced on a national basis during the period of the two surveys. The problems related chiefly to the treatment and ownership of research results, which had increased from 22.8% of respondents in a 2001 survey to 38.7% in the 2004 survey. The second major problem has been the difficulty of locating suitable areas for developing relations. This however, had decreased in importance between the 2001 and 2004 surveys, from 40.2% to 37.5%. Another procedural related issue that had increased in importance was the difficulty of dealing with procedures for contracts. This had increased from 27.0% to

32.7%. These factors may have diminished in importance as actors have become accustomed to working within the new systems and unfortunately have not been measured in later assessments.

- There have also been some declines in the amount of interest held by researchers for starting their own venture business. The proportion of respondents indicating that they have no interest in establishing a venture firm increased from 14.6% in 2001 to 18.3% in 2004. Furthermore, the proportion of those who want to start a firm either within one year or five years had decreased from 24.4% to 20.7%. However, there had been a larger growth in those reporting that they already served as an advisor or manager to a university venture. This had increased from zero percent in 2001 to 9.8% in 2004. Cross tabulations on the data suggest that there may have been some learning amongst respondents, with those that had been engaged in successful projects taking a more positive stance towards venture business activity. Those that had seen ventures perform poorly took a more critical position. Further assessment of this issue has also been absent.

Quality of response taken to obstacles or problems

As many of the problems being faced in the Hokkaido initiative are also of relevance in the national context, national government has introduced a number of measures over recent years to tackle some of the issues outlined above. These include the expansion of competitive research funds, promotion of inward investment to Japan, promotion of venture firms, promotion of the internationalisation of the universities, and the training of personnel involved in technology transfer. In many respects, national policy is still the key driver for innovation policy.

At the regional level, policy appears to be responsive to the challenges found in the monitoring analysis which is occurring on an annual basis. For instance, METI produce an annual strategic outline which introduces a number of measures to respond to each challenge observed. These have related to the fostering of stronger international links, the greater provision of information in order to generate interest in the initiatives, as well as greater attention given to human resource issues. For instance, the Skill Angel Initiative published in 2006 led to greater emphasis on the types of skills required in Hokkaido and the types of support that should be provided (METI Hokkaido Bureau 2006).

As many of these initiatives have only recently been introduced their influence upon the initiative at this stage is difficult to judge and assess comprehensively. However, while policy makers appear to have been responsive to many of the obstacles that have been faced, the following continue to be of relevance:

- Firms continue to cite human resource and skill issues as one of the major challenges faced across the different surveys that have been performed (METI Hokkaido Bureau 2006a, 2007a, 2008). This is especially the case where marketing is concerned. Either current initiatives have failed to fully overcome these particular challenges, or there is some lag between the initiatives that have been put in place to foster this and actual effectiveness.

- The location of sufficient finance has also been cited across different survey instruments and has either been the second or most important issue (Hokkaido METI Bureau 2006a, 2007a, 2008). There may be various factors underlying this issue, and some caution is required. It may suggest either that current finance is insufficient, poorly targeted to areas where demand is highest, that such firms may lack financial viability, or that such funding needs are the result of lags in policy implementation.

However,

- There appears to be increasing interest in developing international links for bio-science firms. The proportion with no plans to develop overseas business decreased between 2007 and 2008, from 45.2% to 41.2%. The number of actual links-ups has also increased, and is expected to increase further. The matching services and support programmes that have been introduced to promote such links may have had some bearing upon these developments.

Potential transferability

Hokkaido was deliberately selected for this review as a number of similarities suggested that it would provide a useful comparator to Wales. That is, there are certain similarities in the geographic profile, where both are largely rural and at some distance from the major metropolitan centre in each country. Both have strong tourism and agricultural sectors. At the same time both contain a number of strong academic institutions that have developed policies and strategies to interact with the local community.

This paper reviewed efforts underway in Hokkaido and found that of the two initiatives the bio initiative is that which appears to be the most dynamic and with the greatest potential for growth. It has performed well in evaluations and links strongly with the Welsh Strategic Framework for Economic Development (WAG 2005: 13) and the strategic sectors that have been outlined. However, this paper has observed that many of the venture firms have relatively low capitalisation, as well as static employment growth. There are certain barriers that may exist in Japan for bio-ventures which relate to personnel and access to finance. Both of these issues have been difficult to resolve, despite the various policy efforts that have been introduced to develop Japanese equity markets and stimulate the attraction of a research career. At the national level, in some cases it has been argued that the initial funding provided for many ventures has been too generous leading to poor firm selection (see Kneller 2007).

Another issue is the current value for money of the project. So far the overall budget for the entire initiative to 2010 is quite significant at around £540m. Whether the outcomes that have been achieved thus far for this expenditure is justified is somewhat debatable; however, the overall ambition underlying the project, and the relative success witnessed in some of the survey results suggest that some optimism may be warranted. This depends, however, on the ability of policy makers to gradually reduce subsidies and funding while at the same time maintaining the sustainability of the cluster. For this to occur, the ability to tap overseas markets will be of key importance.

By and large it may still be too early to say whether similar policies should be transferred elsewhere.

What are the main lessons for Wales and places similar to Wales?

The initiatives suggest that networking initiatives and interactions between different actors are the key element in how Hokkaido's regional innovation cluster has developed. That is, allowing researchers involved in technological projects to interact at an early stage with other actors, both in university, industry and government. Support is provided both in terms of information, network structures and physical facilities, in the form of incubation centres.

The policies are well supported by central and local government and also appear to have the strong support of other stakeholders as well as participant firms. Using five year strategic plans with clear targets allows actors to focus upon these objectives. The time horizon should also focus attention on how the policy should develop over the longer term, but this is still subject to debate amongst the different actors.

Hokkaido has only just begun to realise the importance of international links, but faces barriers due to what is seen as geographic isolation, an insular outlook, and language barriers. Considering the challenges that Japan faces in relation to population decline and aging, it may be argued that stronger links with overseas present the greatest opportunity for stronger growth. There have been some positive movements in the direction of stronger international links, but further research would be required to asses the importance of these links.

Considerations for successful adoption in Wales and places similar to Wales

There are many factors which may apply to the Welsh case. Firstly, both regions have prioritised biosciences, and this may allow for some policy learning to occur between the different actors in the two regions.

In terms of policy implementation, there are some differences between the two countries which are of relevance. These relate chiefly to different capital and equity markets, where venture companies in the UK have access to a more diverse range of capital than counterparts in Japan. This lessens the policy scope for WAG in some respects.

Human resources appear to be of some importance in the Hokkaido context and the relatively low employment growth emerging from ventures, in addition to the survey responses from venture firm respondents suggest that this is a major issue. This suggests that venture firms are facing a tight labour market in Hokkaido which may limit their growth strategy.

At an actor level, the Hokkaido case suggests that while a broad range of actors from a range of different organisations including firms, venture capital, the universities and government is desirable, there is a need to set a limit over the overall number of organisations involved. The employment of personnel with private sector experience in some of these organisations who are able to appreciate risk is also of importance.

The monitoring of the initiatives is also worthy of some praise. The use of quantitative measures that allows for comparisons across different regions, as well as the detailed data that exists for Hokkaido allows clear monitoring of the progress of the initiative. One issue which has emerged however is the use of different measurements between surveys. This has slightly undermined the monitoring performance.

For further information

Industrial Cluster Initiative
Ministry of Economy, Trade and Industry
Hokkaido Bureau
Sapporo, Kita-ku, 1-1 North 8, 060-0808
TEL：+81 11-709-2311; FAX：011-709-1778

IT Promotion Office
NOASTEC
Kita Building
2-8 Kita 7 Nishi, Kita-ku, Sapporo
Hokkaido 060-0807
Tel: +81 11 700 3551; Fax
+81 11 700 3552

Regional Science and Technology Promotion Office
Basic Policy Directorate
Science and Technology Policy Bureau
Ministry of Education, Culture, Sports, Science and Technology
Chiyoda-Ku, Kasumigaseki, 3-2-2, 100-8959
Tel: +81 03 5253 4111; Fax:
+81 050 3772 4111

Hokkaido Planning Promotion Section
Science and IT Promotion Bureau
Hokkaido Government
Nishi 6-chome, Kita 3-jo, Chuo-ku,
Sapporo 060-8588

Industrial Cluster Program:www.cluster.gr.jp/en/index.html

Ministry of Economy, Trade and Industry Hokkaido Bureau:www.hkd.meti.go.jp/index_e.htm

Hokkaido Government: www.pref.hokkaido.lg.jp/foreign/english.htm

Presentation on Knowledge Cluster Initiative: www.rieti.go.jp/users/cluster-seminar/pdf/027_e.pdf

Presentation on Industrial Cluster Initiative: www.rieti.go.jp/users/cluster-seminar/pdf/023_e.pdf

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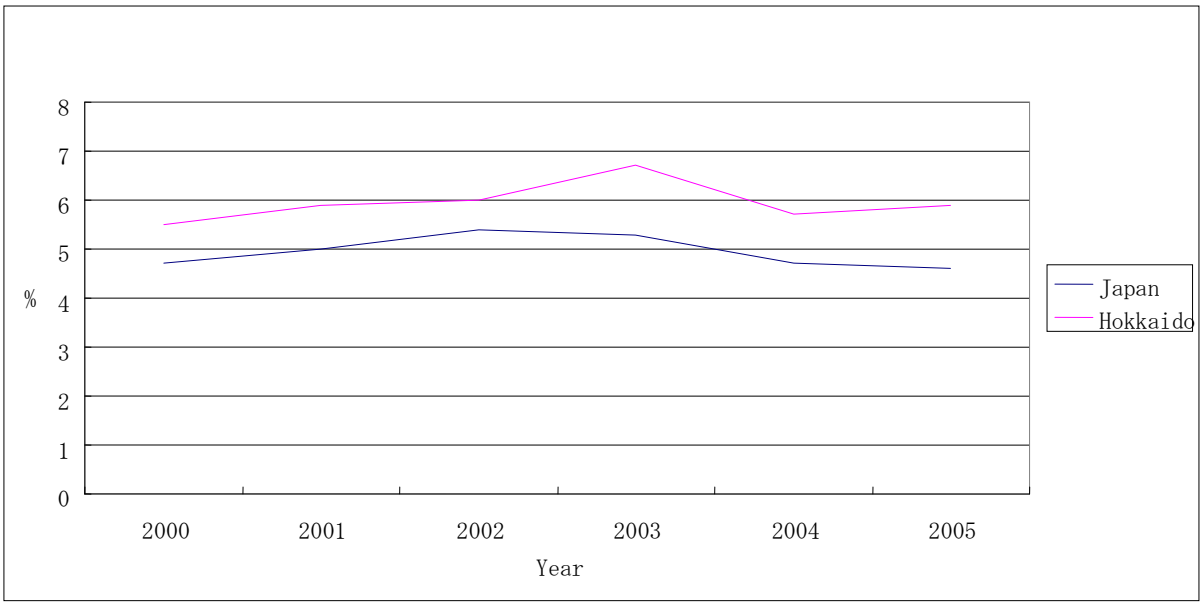
Appendix A: Unemployment trends in Hokkaido and Japan

Figure I.A1: Comparison of unemployment levels in Hokkaido and Japan (2000-2005)



Source: SOUMU 2007

Table I.A1: Definition of small and medium sized enterprise in Japan

Industry Type	Personnel	Capital
Manufacturing Industry	<300	<300m Yen
Wholesale Industry	<100	<100m Yen.
Retail Business:	<50	<50m
Service Industry	<100	<50m
Small Scale Industry		
Manufacturing	<20	-
Wholesale/Service	<5	-

Source: SME Agency[1]

ENDNOTES

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2. Population statistics from SOUMU (2007); Unemployment and economic growth rate from Hokkaido Government (2007)

3. All currency exchange is calculated at £1GBP = Y215.6 (January 2008)

4. According to 2006 data on collaborative research between universities and industry held by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), Hokkaido University is seventh in volume of funding (6541m) and number of collaborative research cases (362 cases) and contract/entrusted (454 cases) research cases (MEXT 2007). The Shanghai Jiao Tong ranking of world universities places Hokkaido University within the top 150 world universities (2004).

5. The former imperial universities comprise Tokyo, Kyoto, Tohoku, Osaka, Kyushu, Nagoya and Hokkaido universities.

6. University and Public research laboratory information from ReaD database (JST 2007); Data on university ventures (for 2006) provided by Kyushu METI Bureau (2007); Patent data (for 2006) by Japan Patent Office (2007).

7. SME policy outlines can be found at: www.chusho.meti.go.jp/sme_english/index.html

IP policy outlines can be found in the Intellectual Property Strategic Plan 2006, see: www.kantei.go.jp/jp/singi/titeki2/keikaku2006_e.pdf

8. See: www.noastec.jp/biocluster/english/index.html

9. www.noastec.jp/biocluster/english/presentstate.html

1. www.chusho.meti.go.jp/faq/faq/faq01_teigi.htm#q1