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Combining Economy, Science and Innovation for a better society

review

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Flemish government

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COLOPHON EWI Review: Four-monthly magazine on the economy, science and inovation – Vol.4, No.1 The EWI Review is a publication of the Flemish Government's Department of Economy, Science and Innovation. **Address of the editorial office:** Strategy and Coordination Division, Department of Economy, Science and Innovation, Koning Albert II-laan 35, bus 10, B-1030 Brussels, Belgium. Tel.: +32 (0)2 553 59 80 - Fax: +32 (0)2 553 60 07 - www.ewi-vlaanderen.be **Published by:** Dirk Van Melkebeke **Editors:** Peter Spyns (General Editor), Emmelie Tindemans (Editor-in-Chief), Anita Baldewijns, Margot Bollen, Claudine Degezelle, Steven Schelfhout, Tim Willems. **Editorial committee:** Pierre Verdoodt (editorial chairman), Pascale Dengis, Tom Tournicourt. **Contributors to this edition:** Ilse Boeykens, Liselotte De Vos, Niko Geerts, Jan Larosse, Steven Schelfhout, Liesbet Schruers, Monika Sormann, Jan van Nispen, Frank Vereecken, Els Vermander, Peter Viaene, Karolien Waegeman, Wim Winderickx. **Guest authors:** Jeffrey Alenus, Aagje Beirens, Paul Berckmans, Thomas Crispeels, Leontien Demeyere, Jeroen De Vuyst, Karen Goeyens, Erik Jacquemyn, André Meyers, Caroline Swyngedouw, Michèle Surinx, Jan Van Den Einde, Chris Vandesande, Peter Van Humbeeck, Eva Van Maele, Koen Van Muylem. **Translation:** Ian Connerty **Layout and printing:** New Goff

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You are young and ...

During a difficult period, it always helps to look back to the times in your life when things were (relatively) free of stress and strain. For many people, this takes them back to their school and university years. But for the youth of today even this supposedly carefree period is being increasingly subjected to the demands of the Flemish economy. It seems that a sense of initiative and a willingness to take risks are being insufficiently developed by the education system. Girls, even more so than boys, are reluctant to choose science or technology-based courses. And in the future, it is precisely this kind of person that the Flemish economy so badly needs: scientists, technocrats and entrepreneurs. However, this message has yet to reach the ears of our young people.

Yet the problem is not essentially a new one. A lack of natural resources and raw materials means that Flanders has to use its grey matter as source of innovation. And this is now more needed than ever, to develop new, better and more competitive products, services and organisational systems of social and commercial (and therefore international) importance. In other words, it is necessary that the youth of today should be made aware of the social and economic significance of entrepreneurship and technology studies. In particular, they should be given the chance to 'try out' science subjects in a relaxed atmosphere, in the hope that they may be convinced to follow this path in later life. In a similar vein, the European SME Week[1] will be held from 25 May to 1 June, with the aim of stimulating enthusiasm for entrepreneurship.

The central theme of this edition of the EWI Review will therefore focus on recent initiatives designed to inspire a greater interest and keenness amongst our young people for science, technology and entrepreneurship. Flanders DC recently published a research report[2] on this subject. And that Flanders can be innovative in this respect has been proven by the project 'MyMachine' (p. 10), which even won a United Nations award. Our interview (p. 20) also shows that the sensitisation of target groups – for example, low-opportunity teenagers who are tired of school – can lead to the discovery of new entrepreneurs.

In addition, we will briefly sketch developments in the EWI landscape, with a summary of the most important organisations and actors (p. 4). We will also devote attention to the strategic advisory councils for this policy domain (p. 28), to the work of a Flemish scientific institute – this time the Research Institute for Nature and Forest (p. 32) – and to the Flemish Policy Research Centre for Environment and Health (p. 34). There will be an update of the EWI's contribution to the Belgian presidency of the EU (p. 40) and a look forward to the World Exhibition in Shanghai (p. 44). Finally, you can learn how Flemish industry is preparing for the future (p. 48).

We would also like to announce the appointment (effective since 1 April 2010) of Mr. Dirk Van Melkebeke as Secretary-General of the EWI Department. You can look forward to hearing more from him in the introduction to the next edition of the EWI Review.

As always, I wish you enjoyable reading.

Peter Spyns,
General Editor

1 http://ec.europa.eu/enterprise/policies/entrepreneurship/sme-week/

2 Van den Berghe W., Lepoutre J., Crijns H. & Tilleuil O., (2009), EFFECTO: Towards effective entrepreneurial education in Flanders, Flanders District of Creativity.

The EWI policy domain: a pillar of the Flemish knowledge economy and society

Implementations in the field of innovation must work to the benefit of society as a whole. The combination within the framework of the Flemish Government of the policy domains for the economy (including entrepreneurship), science and innovation offers numerous possibilities for the development of a future-oriented, long-term strategy for Flanders. The Flemish Government wishes to make both the public and the business world better informed about the economy, science and innovation. It wishes to encourage interest in these matters with young and old alike, which should also work to the benefit of society as a whole. In short, the policy domain of economy, science and innovation has many different facets and fulfils a key role in the Flemish economic and research landscape.

Figure 1: Survey of the EWI landscape

parliament	**FLEMISH PARLIAMENT** • Commission for Economy, Economic Governmental policy mix, Innovation, Science Policy Employment en Social Economy	
advisory council	• Institute Science and Technology	
government minister(s)	**FLEMISH GOVERNMENT** • Minister for Economy, Foreign Policy, Agriculture and Rural Policy	• Minister for Innovation, Public Investment, Media and Poverty Reduction
advisory council	• Flanders Social and Economic Council	• Flemish Council for Science and Innovation
public administration	**FLEMISH AUTHORITIES** • Department of Economy, Science and Innovation implementing agencies: • Research Foundation Flanders • Hercules Foundation • Agency for Innovation by Science and Technology • Enterprise Flanders • PMV • LRM • Vlaamse Participatiemaatschappij	
research	• Flemish Policy Research Centre for Entrepreneurship and International Entrepreneurship	• Centre for R&D Monitoring

As with all other policy domains administered by the Flemish Government, EWI consists of a policy-preparation department, an advisory body and various implementation agencies. In addition, numerous other actors are involved in the policy process: various institutions which are more or less 'public' in nature, thematically oriented (or not), or part of collective research and innovation networks. The European and federal levels also play a role. Figure 1 gives a summary of the different entities.

The department

The EWI department acts as the coordinator and is largely responsible for the preparation, follow-up and evaluation[3] of the policy relating to the economy, science and innovation. It stimulates scientific research and technological innovation, and in this manner helps to promote entrepreneurship and a more positive economic climate in Flanders. It directs its activities not only towards the companies and the educational and research institutions, but also towards society as a whole. In addition, it also fulfils a number of implementation tasks. For example, it administers the Industrial Research Fund (IOF)[4] and the Interface Services at Universities (IF), and is responsible for the implementation of the Science Communication Action Plan[5]. The department also organises the Flemish Science Week[6], the Science Festival and the calls for new projects which can further popularise science.

The advisory councils

The advisory councils offer advice relating to main policy lines and strategic policy issues. In this manner, for example, the Flemish Council for Science and Innovation (VRWI)[7] is the advisory body for the Flemish Government and the Flemish Parliament in all matters relating to science and innovation policy. The Flanders Social and Economic Council (SERV)[8] is the consultation body for the social partners in Flanders and acts as a strategic advisory body for economic matters within the EWI policy domain.

The agencies

The different agencies each carry out their own specific tasks within the EWI policy domain. For example, the Hercules Foundation[9] provides subsidies for medium-large and large research infrastructure. The ParticipatieMaatschappij Vlaanderen (PMV)[10] and the more specifically regionally oriented LRM[11] offer financial guarantees to companies. The PMV also administers a specific policy instrument designed to promote innovation: the Flemish Innovation Fund or Vinnof, which furnishes risk capital to innovating starters. The Enterprise Agency (AO)[12] offers advice and guidance to (potential) entrepreneurs. It is also responsible for providing direct support to the companies and for the administration of EU funding for regional policy. The Vlaamse Participatiemaatschappij (VPM) can invest in various different ways in other Flemish investment companies (e.g., the GIMV or other similar bodies). The Agency for Innovation by Science and Technology (IWT that stimulates (technological) innovation) and the Research Foundation Flanders (FWO that supports fundamental research) fit within this policy framework.

The Agency for Innovation by Science and Technology (IWT)

Since 1991 the IWT has been supporting innovation, research and development in Flanders, amongst other means through the provision of financial grants, advice, networking and policy preparation. As the name suggests, technology and (hard) sciences are its most important target areas.

- The IWT awards *subsidies* on an annual basis, mainly to projects submitted by Flemish companies and other knowledge actors, either individually or collectively. The IWT either grants the budget itself (through its various support programmes and instruments) or acts as an intermediary for the Flemish Government.
- The IWT *advises* Flemish companies and research centres with regard to their grant applications and innovation projects. It

BELGIAN PARLIAMENT

- Commission for Industry, Science policy, Education, the national scientific and cultural institutions, Self-employed and Agriculture
- Advisory committee for scientific and technological questions

EUROPEAN PARLIAMENT

- Commission for Industry, Research and Energy (ITRE)
- Science and Technology Options Assessment

BELGIAN FEDERAL GOVERNMENT

- Minister for Entrepreneurship and Administrative Simplification
- Minister for SMEs, Self-Employment, Agriculture and Science Policy
- Central Industry Council
- Federal Office for Science Policy

COMPETITIVENESS COUNCIL

- National ministers competent for Science Policy and/or Economy
- Enterprise Policy Group
- Scientific and Technical Research Committee

BELGIAN FEDERAL AUTHORITIES

- Economy, SME, Self-Employment and Energy Federal Planning Service
- Science Policy Federal Public Planning Service
- Federal Planning Office
- AGORA-programme

EUROPEAN COMMISSION

- Research Directorate-General
- Enterprise and Industry Directorate-General
- European Commission Joint European Research Centre

also helps to find suitable partners for specific projects and stimulates knowledge transfer between the academic world and the business community. In addition, the IWT guides researchers and companies with regard to their (possible) participation in EU projects.
- The IWT works to create a close *collaboration* between all the actors in the field of technological innovation in Flanders. With this aim in mind, it set up the Flemish Innovation Network (VIN), which combines the knowledge and expertise of more than 170 different organisations.
- With regard to the *preparation of Flemish innovation policy*, the IWT also formulates policy recommendations for the Flemish Government.

The agency functions as the one-stop-shop for innovation in Flanders and supports all types of innovators throughout the entire innovation trajectory: companies, individual researchers, research centres, knowledge centres, other organisations and networks (for example, for collective research). For the implementation of these tasks the IWT has developed a wide range of policy instruments, each with its own objectives, target groups, support criteria and budgets. The IWT also takes part as the Flemish partner in various international innovation projects, such as the ERA-Net[13] or the Joint Technology Initiatives of the EU. Figure 2 offers a summary.

In 2008 the support grants paid out by the IWT amounted to 297 million euros. 40% of this total was awarded to company projects; 23% to basic research; 19% to collective research; 7% to knowledge dissemination; and 11% to other initiatives. Just over 75% of the company grants went to SMEs, with 23% being allocated to major companies.

The Research Foundation Flanders (FWO)

The FWO was created in 1928 at the initiative of King Albert I. It was originally known as the National Foundation for Scientific Research and was intended to be a public utility organisation. After the third Belgian state reform in 1988, the administration of this body passed into the hands of the Communities. The FWO stimulates the development of pioneering knowledge in all scientific disciplines. With this aim in mind, it on the one hand supports individual researchers of proven excellence through a funding system, whilst on the other hand it stimulates research groups through research projects involving inter-university competition and assessments by a panel of domestic and international experts. In this manner, the FWO rewards young talent with Ph.D, clinical Ph.D. and special Ph.D. fellowships, and post-doctoral researchers with postdoctoral fellowships and senior clinical investigator fellowships. The foundation also awards scientific prizes, actively supports the process of scientific contact (e.g., through the granting of travel grants) and stimulates scientific co-operation at federal and international levels. The foundation has at its disposal a budget of 192 million euros (2009), approximately 80% of which is contributed by the Flemish Government, with a further 14% coming from various federal fiscal and semi-fiscal measures and just 6% from direct funding by the federal government. The more than 1,500 individual research grants amount to almost 90 million euros in total, while the support for research projects amounts to some 80 million euros.

Universities and university colleges

The Flemish Community can boast six universities: K.U.Leuven (Leuven), UGent (Ghent), UA (Antwerp), VUB (Brussels), UHasselt (Hasselt), HUB (Brussels), which play a key role in the non-private R&D expenditure in Flanders. The universities are responsible for 90% of all scientific and research output. They have a triple objective: education and training, the performance of research, and the provision of services to society or specific third parties. K.U.Leuven and UGent are the largest universities and spend by far the most on R&D. A number of the 22 university colleges in Flanders are also engaged in research activities. Most of these belong to one of the five university 'associations'. The universities are subsidised through several different channels, including the Flemish Department of Education and Training (a basic allowance per student and grants from the Special Research Fund), the FWO and the IWT.

Strategic research centres

Flanders aims to be a forerunner in the European knowledge society and economy, on the one hand by continuing to develop and make use of its existing knowledge base, and on the other hand by increasing its innovation potential. Fot this reason, the Flemish Government has set up four strategic research centres in four very different scientific domains: IMEC (nano-electronics and nanotechnology, Leuven)[14], VIB (biotechnology, Ghent)[15], VITO (energy, environmental technology, materials and earth observation, Mol)[16] and IBBT (broadband applications, Ghent)[17]. These centres focus to a large extent on strategic basic research with results which can be valorised in the long term. IMEC is the largest centre, with more than 1,650 members of staff. Two new centres are currently being set up: the Centre for Medical Innovation (CMI) and the Strategic Initiative for Materials (SIM).

VIS excellence centres and VIS co-operation projects

Since 2000 the Flemish Government has set up a number of centres of excellence. These bottom-up initiatives are proposed by the business community. In addition to their demand-driven nature, the main feature of these centres is the open and collective character of their activities. Most of the excellence centres have a dual purpose: to provide a platform for networking/consultation and to develop a sector-specific research programme. They are a good example of collaboration between government, the universities and industry (what is known as the 'triple-helix' model), and aim at knowledge creation and knowledge dissemination across a broad range of companies. Currently, the following initiatives are in operation: Flanders DRIVE (automatives), VIL (logistics), FMTC (mechatronics - Flanders Mechatronics Technology Centre), Flanders Food (innovative foodstuffs), VIM (mobility), Flanders InShape (product development and design centre)[18], Flanders Synergy (innovative organisation of labour) and Flanders PlasticVision (synthetic processes). FLAMAC (materials) will be absorbed into the new SIM strategic research centre in the course of 2010. IncGEO (geographical information) no longer exists.

Another type of innovation-stimulating network (but less integrated in nature than the excellence centres) are the VIS-cooperation projects. These already existed back in the 1990s, when they were known as 'clusters'. Examples of these collaborative ventures include VEI (innovation for electric installations), Leuven DSP Valley (processing of digital data, VKC (plastics), Clusta (steel plating), VRI (space technology), FGV (Flanders Graphic Valley), etc.

Scientific institutions

The Flemish Community's scientific institutions carry out scientific research that is not specifically targeted on economic applications or valorisation. They are each directed by a policy department of the Flemish Government. The institutions in question are: the Research Institute for Nature and Forest (INBO, Brussels)[19], the Royal Antwerp Museum of Fine Arts (KMSKA, Antwerp), the Flemish Heritage Institute (VIOE, Brussels)[20], and the Institute for Agricultural and Fisheries Research (ILVO, Merelbeke).

Other knowledge centres

In addition to the above-mentioned bodies, there is also a wide range of other organisations which are actively involved in science and innovation in Flanders. These include the VLIZ (Flanders Marine Institute, Ostend)[21], ITG (Institute of Tropical Medicine, Antwerp)[22], MIP2 (environmental technology, Berchem)[23], NERF (strategic multi-disciplinary collaboration for neuro-electronic research, Leuven)[24], KMDA (veterinary medicine, Antwerp)[25], UAMS (management, Antwerp), and the Vlerick School (management, Ghent-Leuven). Since 2001 a number of policy research centres[26] have also been set up. These centres perform both problem-oriented short-term research and fundamental long-term research into matters which the Flemish Government regards as being relevant to its policy priorities[27].

Flanders also houses a number of other similar institutions which are the responsibility of other authorities. This includes federal institutions, such as the Belgian Nuclear Research Centre (Mol), or the collective centres in various different technology domains. Amongst the international institutions in Flanders are

Figure 2: Innovation support by type and amount (in millions of euros) for 2008

R&D and innovation for companies	Knowledge centres and individual researchers	Collective research and collaboration in R&D and innovation	Advice and guidance
R&D business support [93,5] (R&D projects and R&D feasibility studies)	Strategic basic research [38,6]	VIS-Collective research projects [8,5]	Flemish Innovation Network
SME Programme [16,6] (SME innovation projects and SME feasibility studies)	Post-graduate strategic research grants [26,8]	VIS-Thematic stimulation of innovation [6,9]	VIS-Regional innovation centres
	Post-doctoral research fellowships [2,2]	VIS-Cooperation projects	VIS-Technological advice
	Applied biomedical research [5,0]	VIS-Excellence centres [27,9]	VIS-Feasibility studies
	Agricultural research programme [9,6]	VIS-testing grounds	Innovative procurement[28]
	Innovative media programme [4,4][29]	TETRA Fund [8,9]	National contact point for participation in EU-FP on RTD
	Baekeland fellowships	Other (bilateral collaboration, e.g., participation in EUREKA[30]	E.E.N. (Enterprise Europe Network)

the Von Karman Institute (aerodynamics and fluid dynamics, Sint-Genesius-Rode) and the IODE (oceanographic data, Ostend[31]).

Intermediary structures

A further range of initiatives, networks and structures also stimulate and facilitate innovation and scientific research. For example, Flanders possesses various science parks and incubators, which offer young and innovative companies both material support and an appropriate framework for their activities. For example, the Ardoyen science park, near the Zwijnaarde technology park, houses spin-offs from the University of Ghent and start-ups from the VIB (with a bio-incubator on site). Equally important are the various *financial intermediaries* which act to support innovative and high-tech companies. These include the Business Angels Network or BAN Vlaanderen[32], a market place for the suppliers and users of risk capital. In a similar vein, the GIMV is Belgium's most important provider of private-equity and venture capital, while the Flemish Biotechnology Fund provides similar services in its own sector. The Flanders District of Creativity (Flanders DC)[33] is the Flemish organisation responsible for the general stimulation of entrepreneurial creativity.

Federal institutions

Government institutions at federal and European level complete our survey of the EWI landscape. Typical examples of this type of institution include the Scientific Policy Federal Planning Service (PPS), the Economy, SMEs, Self-employed and Energy Federal Public Services (FPS), and finally the Finance FPS. Between them, these departments are responsible for accreditation, intellectual property rights, normalisation, certification, standardisation (framework conditions for science and innovation), and the legal framework for research institutions. Social security, legal status, fiscal measures (e.g., exemption from social insurance contributions for researchers) are all federal matters, as are the various policy instruments relating to the internal European market, the European Research Area and the mobility of the research community.

In addition, the federal government is also responsible in a limited number of cases[34] for the effective implementation of research matters: nuclear research, space research, sustainable development, polar research, and the Belgian biodiversity platform. The federal scientific institutions also fall under the jurisdiction of the federal government. The collective centres (and their agreed equivalents) – which were originally set up in 1947 with the specific task of carrying out collective research and providing technological advice to the companies in a particular sector – are since the mid nineties jointly supported by both federal and regional government authorities. Finally, the Scientific Policy PPS plays a coordinating, participatory or financing role with regard to collaborative ventures and other undertakings which involve the European Union or other international authorities.

The European Union

The EU is above all relevant as the organiser and initiator of various programmes and initiatives in the fields of R&D and innovation, in which Belgian or Flemish actors can take part. The most well-known of these initiatives are the Framework Programmes for Research and Technological Development, the Competitiveness and Innovation Framework Programme (CIP)[35], and the European Fund for Regional Development (EFRD[36]). Some of the European initiatives look beyond the boundaries of the EU (e.g., Eureka[37]), or are bilaterally or multilaterally (UN, OECD) oriented (e.g., IODE[38]).

In short, the composition of the EWI landscape is characterised by its own internal (and relatively simple) logic. Nevertheless, this historically developed structure, which owes much to the institutional structure of Belgium, does result in an additional degree of complexity – and makes possible a degree of inconsistency in the overall vision on policy[39].

Niko Geerts,
Strategy and Co-ordination Division

3 EWI Review 3 1: 11 – 13
4 EWI Review 3 1: 46
5 EWI Review 3 1: 48 – 49
6 EWI Review 1 1: 47 – 49
7 See also p. 28
8 See also p. 28
9 EWI Review 1 2: 30 – 31
10 EWI Review 3 1: 6 – 7
11 See also p. 8
12 EWI Review 3 3: 18 – 19 and EWI Review 3 1:5
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Oxygen for Limburg growth

The Limburg Investment Company was set up with the aim of reconverting the local economy to other forms of activity following the closure of the province's coal mines. It is now more commonly known as the LRM. Any entrepreneur with plans to develop new initiatives in Limburg can visit this subsidiary of the Flemish Government.

As an investment company, the LRM comes under the authority of the Flemish Minister for Innovation, Government Investment, Media and Poverty Relief, and falls within the policy domain of Economy, Science and Innovation (EWI)[40].

Profit-driven investment

The LRM's mission is to provide the necessary oxygen to breathe new life into the Limburg economy. The company profiles itself as a profit-driven investor which offers a unique combination of financial support, infrastructure and expertise. The LRM adopts a generalist approach, meaning that every new enterprise, irrespective of size or sector, is welcome at LRM. However, over the years it has also acquired specific competencies in ICT, life sciences (or biosciences) and clean-tech[41]. Through this focus, the LRM is actively contributing towards the transformation of Limburg's traditional product-based economy into an innovative and technological knowledge economy.

Access to the LRM is channelled through five different domains:

1. ICT and Media
2. Life Sciences
3. Cleantech & Energie
4. SMEs
5. Large companies

Within each of these five spearhead segments the LRM concentrates on the provision of venture capital, the development of business infrastructure and the commercialisation of property.

The provision of venture capital

The LRM acts as a financial partner for starter investment, expansion investment, major shareholder changes, family successions, company buyouts and project financing. Most of these partnerships are realised through a combination of direct capital contribution and subordinated loans with warrants[42]. Each application for funding is processed within in a made-to-measure framework that is designed to take into account the individual needs of the company and the wishes of the investment partner. Furthermore, the LRM has also developed the Plus-loan, which is a standard subordinated loan specifically for small companies[43]. Within the clean-tech domain, the LRM sometimes initiates projects of its own or participates in the demo-projects of others. The LRM portfolio currently contains more than 80 companies and the LRM has net assets valued at approximately some 250 million euros.

Developing business infrastructure and commercialising property

Suitable business sites[44] are of great importance for a healthy economy. To this end, the LRM is keen to develop SME zones, industrial estates, business and science parks, which will provide the room necessary for new enterprises. To achieve this objective, the company works closely with other government services, including the Limburg Provincial Development Corporation (POM) and NV De Scheepvaart[45]. The LRM also promotes property projects targeted on the specific needs of Limburg's spearhead sectors, such as logistics, life sciences and clean-tech. The company is currently involved in the rehabilitation of more than 500 hectares of industrial sites. Some examples include 100 hectares of high-value industrial premises in the Wa-

LRM
Oxygen for growth

terschei-EnergyVille (Genk)[46], 300 hectares in Kristal-Park III in Lommel, 150 hectares within the framework of the Albert Canal Economic Network (ENA) and the exploitation of Bioville (at Diepenbeek).

Attracting foreign investors

For the utilisation of available industrial sites, the LRM is already looking far beyond its own provincial borders. Limburg has a number of important assets to attract international investors. The LRM plays a coordinating role within the framework of the acquisition policy, in collaboration with POM-Limburg, Flanders Enterprise[47] and Flanders Investment & Trade[48]. In this manner, for example, the LRM is organising business-to-business-seminars during Limburg Week at the World Exposition in Shanghai[49] from 17 to 21 May 2010.

Sustainable value creation

The LRM invests in companies and projects that can generate additional economic activity in Limburg. The company is constantly seeking to improve the professionalism and sectoral knowledge of its team. In this way, the LRM can maximise its contribution towards the creation of added value by the companies in its portfolio, thereby bringing sustainable employment growth to the province. All the LRM's investments are designed to generate profit. They are provided on the basis of receiving a fair return on investment in relation to the level of risk to which these investments are exposed. Any profits that are realised and any funding that becomes available as a result of exits can be reinvested in new projects. This profit-oriented approach allows the LRM to act as a rolling fund and to maintain its rhythm of investment over the long term.

Jeffrey Alenus,
LRM

More info:
www.lrm.be

40 Also see p. 4

41 All technological innovations which can generate economic profit without environmental cost.

42 A warrant gives the warrant holder the right to buy a specific amount of securities before or on a specific date (call-warrant) or to sell securities at a fixed price agreed in advance (put-warrant). A warrant can be issued by a company or a financial institution.

43 A subordinated loan is a credit for which the creditor is the last person eligible to claim against the loan.

44 Also see p. 27

45 The most important tasks of NV De Scheepvaart include the maintenance, exploitation, management and commercialisation of the Albert Canal, the Kempen canals, the waterway linking the River Rhine and the River Schelde and the borderland waterways of the River Meuse.

46 EWI Review 3 3: 11

47 EWI Review 3 3: 18 – 19

48 EWI Review 1 3: 47

49 Also see p. 44

MyMachine: dreams are not always illusions

With its economy-education bridging projects[50] the Flemish Government hopes to improve the collaborative links between schools and the world of business. These links should serve to stimulate a spirit of entrepreneurship amongst school children at all levels, right through from nursery school to university. The initiative must involve innovative projects or pilot-projects which focus on raising awareness for and the development of positive attitudes, competencies and skills that can give young people a greater entrepreneurial spirit. During the last call for bridging projects in 2008, Flanders Enterprise ranked the 'MyMachine' proposal in first place.

MyMachine makes it possible for children to develop their own dream machine. The concept works as follows. Children in primary education dream up an idea for a machine (the concept). This idea is then further developed by students of Industrial Product Design at university college level (the design). The design is then made by pupils in technical secondary education (the machine). These three steps take place within the course of a single school or academic year. Throughout the entire process, the children, pupils and students can call upon the expertise and support of various companies and organisations, so that they can create a truly fantastic machine.

A ghost-chaser, an armpit-tickler, a chip cannon, a vibrating bed to wake children up on time in the morning. It is difficult to think up a crazier set of ideas! But MyMachine does everything possible to turn these dream machines into reality.

An complementary trio: education, government and business

MyMachine is the result of a unique partnership between Howest, a university college in West Flanders, the Leie Valley Intercommunal Agency and the West Flanders Regional Fund (administered by the King Baudouin Foundation). In addition, the project was also supported by the Flemish Government (via Flanders Enterprise) and by various profit and non-profit making organisations.

Even though there were considerable differences between the partners in terms of work domain, mission and values, they were all convinced of the need to stimulate creativity and imagination amongst our young people. In this respect MyMachine is an excellent example of 'triple-helix' collaboration between the world of business, the world of education and research, and the world of government.

Kids in charge!

"MyMachine teaches children that ideas are important and also that it is possible to realise these ideas by working together with others. This gives them a sense of (technological) entrepreneurship from an early age. In fact, for many it is their first contact with the world of technology and design," says Aagje Beirens, coordinator of the project. When 800 children visited the Howest Industrial Design Centre in December 2009 to look at the prototypes, one of the most frequently heard comments was: "We didn't know that there was a school for inventors!"

MyMachine foresees a crucial role for Howest students following Bachelor and Master courses in Industrial Product Design. They are the real catalysts between the different educational levels. They need to listen to the wishes of the end-users – the children from primary school – but must also be aware of the need to tailor their designs to the requirements of the manufacturers – the pupils in technical secondary education. MyMachine challenges the students by giving them a seemingly impossible task, which forces them to think 'outside the box'. The technical school pupils learn in turn that their final 'realisation' phase is preceded by other equally important phases, running from idea through concept to prototyping.

A complex machine

While the concept of MyMachine may sound surprisingly simple, its implementation is actually quite complex. In particular, the organisational aspects – the manner in which the different levels of the educational system are able to collaborate – are complicated and challenging.

What does an armpit tickler look like? Jeremy came up with this idea for a hover board, but how do you actually make it work? Will it soon be sun every day if the kids get their way with their weather-making machine? Or will we need the tent umbrellas which will make sure that everyone reaches the classroom nice and dry? This is just a small selection from the ideas that were dreamed up during the last school/academic year (although the technical schools have not yet started with their manufacture).

An inspiring concept

The pilot phase of MyMachine was carried out in the Kortrijk region during the 2008-2009 school/academic year. More than 550 pupils and students from 17 different schools took part. In the spring of 2009 MyMachine launched an appeal to all the primary schools in the province of West Flanders. All the province's technical secondary schools were similarly approached, with the support of the Regional Technology Centre (RTC) for West Flanders.

In October 2009 the start shot was given for a new MyMachine cycle, which will unfold in the course of 2009-2010 across the entire province of West Flanders. More than 1,200 children and students from 50 schools and colleges are raring to go with plans and ideas for the creation of a whole new series of dream machines. This means that this novel initiative to promote creativity within the Flemish education system is now four times bigger than the initial pilot project in Kortrijk last year.

Worldwide recognition

The project has been much praised for its inventiveness and has won many awards at both national and international level.

- MyMachine was chosen for two years in a row (2009-2010) by the West Flanders Chamber of Commerce (Voka) as the best educational project in the province. Voka has agreed to financially support the project for two years by donating the not inconsiderable proceeds of its New Year's reception (a first in the history of Voka).
- For its participation in the project Howest won the Unizo Prize for 'Most Entrepreneurial School of 2009' in the higher education category[51].
- In September 2009 the initiators of the project received the United Nations World Summit Award for 2009 in Monterrey, Mexico. They were also given the opportunity to present MyMachine to a distinguished public consisting of international leaders, creative talents, entrepreneurs and ICT experts. The project was praised by the United Nations as an example to the world of creativity and innovation.
- During Dutch Design Week, held in Eindhoven in October 2009, the MyMachine team also won the European Design Management Award for the best project in the non-profit category.

Above all, the conferring of the prestigious United Nations award created great international interest in the MyMachine concept, from countries as diverse as Mexico, India and Hong Kong. The team is now working on a model and a toolbox which should allow similar projects to be started up in locations outside Belgium. In particular, there have been numerous enquiries relating to the possibility of developing a Europe-wide version of MyMachine.

Dream along…

At the end of June 2010 you can come and admire the entire project pathway, from the very first children's drawings right up to the finished machines, at a special exhibition to be held in Kortrijk under the title: 'MyMachine: small dreams, big ideas'.

Aagje Beirens,
Howest, University College of West Flanders

André Meyers,
Flanders Enterprise

50 EWI Review 2 2: 44 – 45
51 http://www.ondernemendeschool.be/viewobj.jsp?id=403303

Would you like to know more?

If you would like to be kept informed about the project, you can send an e-mail to info@mymachine.be or you can follow the progress for yourself on the website www.mymachine.be. In the 'workshop' you can monitor the blogs of the students and you can also become a member of the project's Facebook group.

Technological entrepreneurs and enterpreneurial technologists

Three years ago the project 'Technology Entrepreneurship' at the Free University of Brussels was started. It was one of the few university projects to accept the challenge of building new bridges between the different faculties of our institution. The objective was to develop an educational package around the theme of technology enterpreneurship. It was intended to make this package available to a large number of the students in the participating faculties.

Today, the project has grown to become a broad knowledge platform based around education, research and service provision in the field of technology enterpreneurship. The original team of two has now been expended to six, all of whom have a passion for 'technological entrepreneurship'.

Wanted: technological entrepreneurs

The origin of the project is to be found in an age-old problem: Belgium is one of the least enterprising countries in the world[52]. This has now become a very serious problem, since the new, innovative and forward-looking companies will be the major employers of the future and the guarantors of our security and prosperity. And there is little sign of improvement, since the level of entrepreneurship in our universities and colleges is still disappointingly low. Yet it is precisely these students of today who will be required to develop and market the technologies of tomorrow. In order to conduct this process successfully, they not only need to be skilled in science and technology, but also well-versed in business economics and entrepreneurship.

In other words, we are going to need more than 'technological engineers' to keep our economy afloat. Our economics students – in particular the business engineers amongst them – can play an important role in setting up and running the innovative and growth-based companies of the future. Only if we can find a way to allow talented people from different academic backgrounds to work together will be able create valuable and sustainable organisations.

An inter-disciplinary approach…

Three faculties at the Free University of Brussels – the Faculty of Engineering, the Faculty of Science and Bio-engineering Sciences and the Faculty of Economic, Social & Political Sciences – agreed to join forces in a new collaborative project. At the initiative of Marc Goldchstein, lecturer in entrepreneurship, and Professor Rosette S'Jegers, the then vice-rector of education, it was decided to set up an ambitious bridging project. In no time at all sponsors from the private sector agreed to provide the necessary 50% of external funding. Biotechnology, photonics, micro-electronics, new materials, software and sustainable energy were the chosen themes.

Following the initial implementation of the project in the participating faculties, the Masters programme for technological engineers (e.g., civil engineers, bio-engineers, etc.) now begins with a generic course entitled 'Introduction to Business Economics', organised by the Faculty of Economic Sciences. This course initiates engineers in the different aspects involved in running a company, such as strategy in a changing world, marketing, financial management, human resources, etc. In similar vein, the Masters students in business engineering are given an introductory course in a technological subject of their choice, organised by the relevant partner faculty. In a following stage, both groups are brought together for a joint course in aspects of business economics, which can cover biotechnology, photonics, micro-electronics, new materials, software or sustainable energy. The business engineers are free to choose the technology in which they wish to specialise, but there is less freedom of choice for the technological engineers. For example, a bio-engineer will always be required to opt for 'aspects of business economics in bio-technology'. This technology-specific approach, as an extra layer on top of the generic courses, is a spearhead breakthrough. Interested students can supplement these subjects with (for example) entrepreneurship, business planning, etc. The team members – each specialised in one of the six technology domains – develop the necessary course material (see Photo 1).

… with concrete results

Before the first year of the bridging project had been completed it was already possible to organise a Project Fair, at which various researchers were able to present their technological projects to a public of students from the different faculties. These projects all have a considerable valorisation potential, and many have interesting – commercial – possibilities. In order to be able to fully assess the value of this potential, the researchers were looking for answers to key questions, such as: What are the possible applications? Who are my most likely part-

ners? How much will the technology cost? Students were then given the opportunity to work together in mixed teams to implement their favoured projects. Their aim was to provide answers to the questions posed by the researchers, thereby helping them to find the best way to move forward. In this manner, for example, two student teams took part during the 2008-2009 academic year in an investigative market study relating to a 3D-camera, developed at the VUB. In the meantime, a spin-off based on this technology – known as Optrima – has been set up, thanks in part to the valuable work carried out by the students. One of them was recently recruited by Optrima.

A sustainable platform

Although since 1 January 2010 the project no longer enjoys the financial support of the Flemish Government, the Technology Enterpreneurship Team is continuing its valuable work. The support for the project in the various faculties is considerable. Most of those involved with the project now work part time as business developers within different technological study groups. They combine this task with an educational function, closely linked to their speciality. In the meantime, a research pathway has also been initiated, and the first publications and the first contributions to scientific congresses are already a fact.

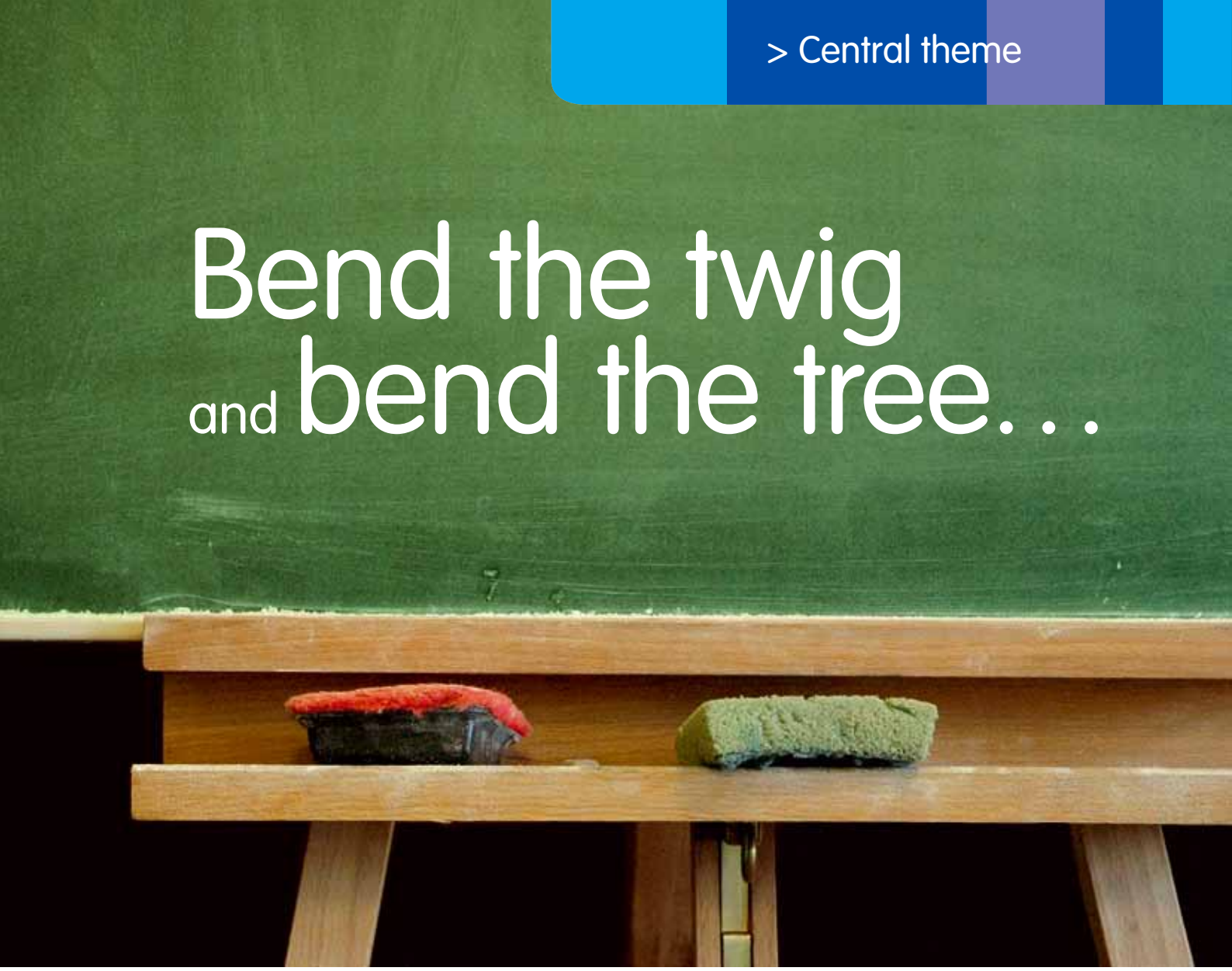
Moreover, the project is now extending its scope beyond the confines of its 'home' university. To date, two successful external courses in 'Intensive Courses in Business & Biotechnology' have been given, each lasting eight days. Earlier this year, a first ten-day course in 'Intensive Training in Entrepreneurship in Photonics' was organised. During these courses, the material developed within the framework of the bridging project is passed on to a large number of external participants, many of them young professionals from industry. These were organised in collaboration with key industry actors such as FlandersBio and B-Phot, the leading photonics research group under the direction of Prof. Hugo Thienpont (VUB) and two EU FP7 photonics research consortia.

The bridging project allowed the development of a unique and valuable platform around the theme of technology enterpreneurship. The fruits of the project are now being enjoyed – and further propagated – by the wider university community.

Thomas Crispeels,
Free University of Brussels

52 Global Entrepreneurship Monitor, 2006
also see EWI Review 2 1: 5

Photo 1: The Technology Enterpreneurship Team, from left to right: Tom Guldemont (photonics), Kevin Douven (micro-electronics), Marc Goldchstein (project leader, software), Leen Lauwers (innovation in materials), Thomas Crispeels (biotechnology) and Ilse Scheerlinck (sustainable energy).
Foto: Bernadette Mergaerts



Bend the twig and bend the tree...

The sooner we learn something, the longer it is likely to stay with us. And it is exactly the same with entrepreneurship. The non-profit making organisation Young Flemish Enterprises (Vlajo) has as its mission the familiarisation of young people with the true entrepreneurial spirit. Whether as children or young adults, everyone who comes into contact with Vlajo automatically comes into contact with the wonderful world of innovation and creativity. Vlajo is keen to mobilise companies and schools to help promote a win-win situation, which will not only secure the future of our economy, but also the sustainability of our welfare and prosperity.

Getting young people interested in entrepreneurship: it is no easy task. In concrete terms, Vlajo offers a series of attractive programmes suited to every stage of school life, which will encourage pupils and students of all ages to develop their entrepreneurial talents in a creative manner and to test them in a controlled but realistic context. With this aim in mind, Vlajo has created its own 4D-pedagogic plan: Dreaming, Doing, Daring and Determination, as a definition of the key qualities of entrepreneurship (see Figure 3). And to help in its annual work, the organisation receives financial support from the Flemish Government.

In addition to the use of mini-companies, as a fixed element in its programme, in recent years Vlajo has also expanded its range of 'learn' and 'do' formulas, with the aim of providing a specific remedy to the lack of entrepreneurial feeling amongst young people. Moreover, Vlajo does not simply focus on pupils in secondary education. There are now Vlajo projects for students at university and for children in primary school, all designed in their different way to promote the skills necessary for enterpreneurship in later life. By encouraging young people of all ages to be creative, they will learn that – with the right attitude – dreams can be turned into reality.

As the student makes his or her way through each stage of the educational curriculum, so they will be introduced to another phase in the 4D plan. Each age group focuses on themes which are crucial for entrepreneurship, but relevant to their current stage of intellectual and social development. Basic skills for self-realisation and enterpreneurship need to be stimulated from an early age, which allows the evolution of these skills to be gradual (see Figure 3).

- The *Dream Factory* is a three-week long project assignment for primary schools. The pupils work around a particular theme, make a visit to an enterprise (for

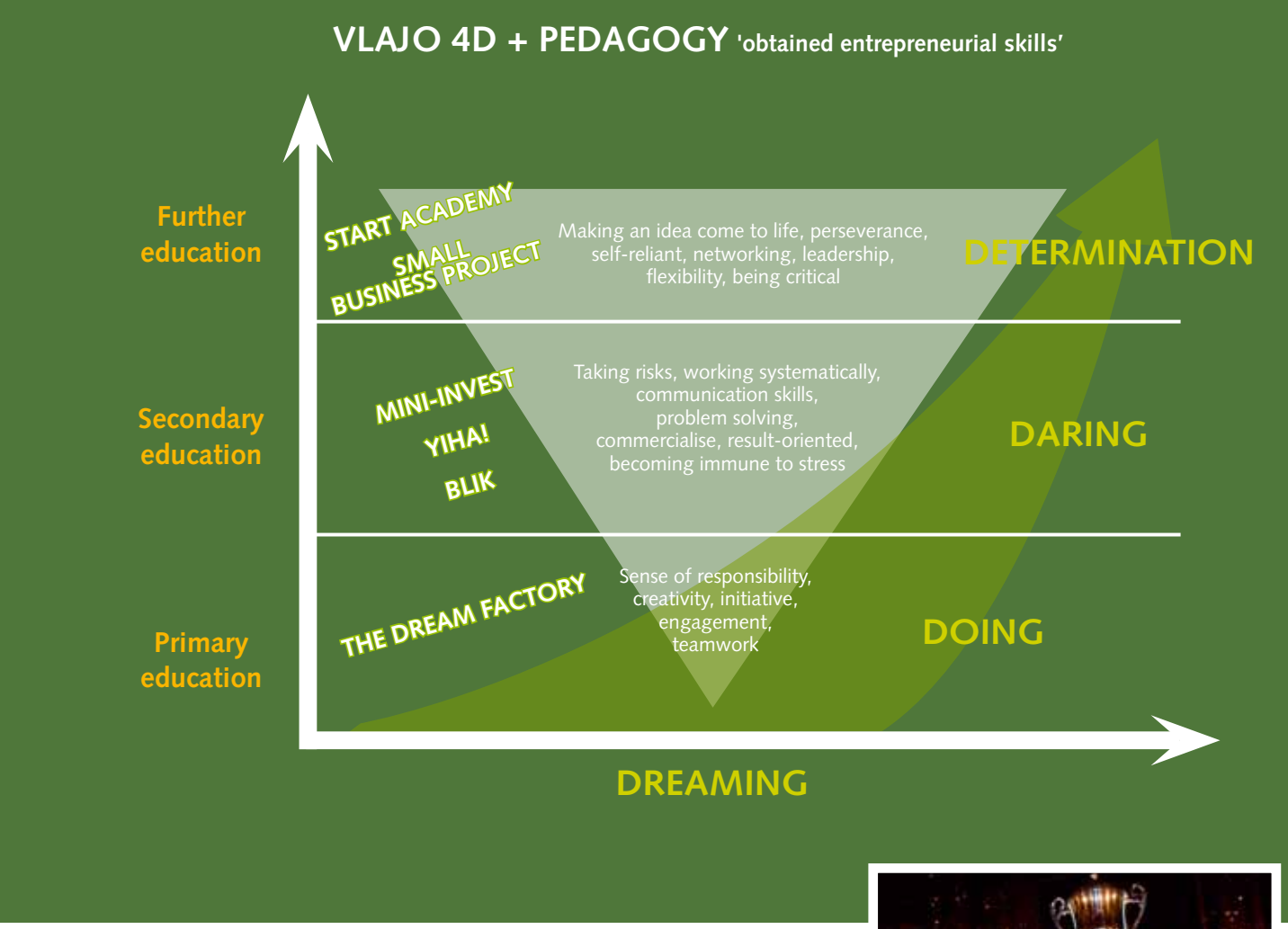


Figure 3: the Vlajo 4D pedagogic plan

example, a hospital) or invite a dream coach – perhaps a parent or a local businessman – to come and talk about the world of industry and commerce.

- *View* is a cross-disciplinary project on the theme of choosing the right course of studies, aimed at the second and third years in secondary education.
- The third, fourth and fifth years in secondary education are enthused by *Yiha!*, a variant on the mini-company concept, which allows pupils to sell fair-trade products in school, with the profit being donated to a charitable cause.
- *Mini-Invest,* a mini-company format which attempts to market a self-designed product, was the revelation of the 2008-2009 school year (see Photo 2). Perhaps you saw a group of enthusiastic sixth-formers at your local shopping centre this year, doing their best to boost the profits of their mini company? During the entire school year they attempt to commercialise a product of their own choosing.
- Studentcompany.be offers a ready-made solution for the third grade of secondary education, by providing a checklist of skills required by the business management curriculum. Using the handbook, the pupils draw up their business plan step-by-step and implement it along lines similar to the mini-company.
- In the bridging project 'mini-company online' Vlajo uses an educational online game to test the entrepreneurial skills of pupils in the first and second grades of secondary education. They create a company in a virtual market place, and are given the opportunity to learn in a playful manner about concepts such as competition, purchase, stock and personnel.
- The most advanced Vlajo tools are designed for students in further education: here a choice can be made between *Small Business Projects*, a variant on the mini-company theme, or *Start Academy*, a business plan competition (new from 2010), both of which are suitable for university and university college level

Vlajo seeks to achieve a systematic and quantitative growth in its programmes, both in terms of range and active participants. The number of pupil groups has grown significantly during the past five years, from 855 in the 2005-2006 school year to 2,875 in the 2009-2010 school year. Total reach has followed a similar upward trend, rising from 12,750 to 40,939 participating pupils during the same period.

Photo 2: Mini-Invest award ceremony for Flemish Government Challenge Trophy

Few would dispute that Young Flemish Enterprises has more than proved its merit in recent years in terms of its contribution toward the promotion of enterprise amongst our young people.

Caroline Swyngedouw,
Enterprise Flanders, Economic Support Policy Division

More information about Vlajo?
Please go to www.vlajo.org

Technopolis®, 2.8 million visitors later

In 2010 *Technopolis*®, the Flemish science centre in Mechelen, celebrates its tenth birthday. During the past decade it has grown to become a fully-fledged science communication centre and a reference point for science dissemination and popularisation, both at home and abroad.

You can make your hair stand on end several times a day with the renewed Van de Graaff generator.

Put all the intestines and the organs back in the right place and make 'The Human Jigsaw'.

In the MysteriX® science truck the pupils must save the world from an all-destructive virus.

In our high-technology knowledge society it is vital that enough young people choose to follow scientific and technological courses of study, with a view to pursuing these same interests in their subsequent professional careers. This is the only way that Flanders can hope to remain a top region in Europe and preserve its prosperity into the future. Science and technology also contain the seeds for solutions to a wide range of other social problems, relating to themes such as the environment, mobility and energy. For this reason, it is necessary that every responsible citizen should possess a basic knowledge of scientific and technological evolutions. In this respect, informal, lifelong learning must become an indispensible part of our way of life.

With 300,000 visitors each year, the Flemish science centre is more than just a fun place for school trips. *Technopolis*® has a lot to offer adult and senior citizens as well. Since its opening in 2000, in total, more than 2.8 million people have found their way to Mechelen, to enjoy the wonders of science and technology. But because not everyone is interested in science or is prepared to make the effort to come to the science centre, *Technopolis*® also moves out into the community at large. *Technopolis*® appears regularly at various exhibitions and events, e.g. at different sessions of what are called the 'children's universities' in Antwerp and Leuven, and even at the open days held in the Royal Palace in Brussels. At each of these venues young and old are given the opportunity to learn about science and technology in an entertaining and educational manner. With these off site activities *Technopolis*® reaches an average of 500,000 people each year. Moreover, *Technopolis*® is also active beyond the borders of Belgium, leasing out its thematic exhibitions to science centres in several countries.

Technopolis® wishes to do more than simply make people aware of science: it seeks to win their commitment to science as an important part of our future. Their motto? "I hear and I forget. I see and I remember. I do and I understand."

A pioneer in science communication

In 1988 the Flemish Government set up Flanders Technology International. The most important task of this non-profit organisation was to coordinate an international technology exhibition of the same name: Flanders Technology International. At the beginning of the 1990s the mission of the F.T.I. was expanded, so that its core task became "to bring science and technology closer to the people." This mission was given shape and form by the organisation of a Flemish Science Week[53], a Flemish Science Festival, the publication of interactive and educational books, an itinerant science truck, educational packages for schools, interactive science theatres, etc.

In February 2000 *Technopolis*® opened its doors to the general public, and thus heralded the start of a new and unique project in Belgium. Since then the F.T.I. has organised all its activities under the *Technopolis*® name. *Technopolis*® may be unique in Belgium, but there are more than 2,400 similar science centres worldwide.

Technopolis® uses several different channels and techniques of communication to make science and technology attractive and interesting for its target groups. Clever packaging, intriguing scenarios, playful and amusing displays: all are used to draw people ever closer to the fascinating world of science. But a science centre needs to be more than just appealing and exciting: it also needs to be educational. Thanks to its more than 280 permanent and interactive exhibits, visitors discover the marvels of science and technology which can be found in everyday things and everyday situations. These exhibits explain 'ordinary' objects and phenomena, but in a manner which is anything but 'ordinary'. Complex scientific principles are made crystal clear in simple, no-nonsense language that everyone can understand. By emphasising the link with everyday life, *Technopolis*® lowers the science and technology threshold for the general public.

The interactive exhibits in *Technopolis*® form an integral and organic landscape in which recognisable elements – such as a house, a car, an aeroplane – act as eye-catchers. This prepares them for the more unusual elements in the display: for example, the chance to have a quick nap on a bed of nails or to drive a bicycle across a steel wire stretched five metres above the ground!

Roller-coaster or video clip

Like science and technology itself, Technopolis® is constantly evolving, reinventing itself through the creation of new exhibits, new zones and the regular change of its themed exhibitions. For example, in 2006 a Science Garden was opened, where visitors are able to turn a rock weighing five tons with just a single finger. A year later the Children's Science Centre was launched, a special area with fun experiments for kids between the ages of 4 and 8 years. In April 2009 a new zone devoted to space travel was inaugurated, where you can discover, among other cool exhibits, what it feels like to walk on the Moon.
The most recent themed exhibition is '1-to-make, an exhibition you help create', in which *Technopolis*® places the emphasis more firmly than ever on interactivity. The visitor decides for each and every element of the exhibit what result (s)he wants to achieve and how (s)he wants to achieve it. For example, (s)he can try find out how to build a roller-coaster or to record her/his own video clip. The various tasks and options challenge people of all ages to think and act in a problem-solving way, thereby setting new boundaries for themselves and their behaviour.

Focus on education

Schools are an important target group for *Technopolis*®: a third of all the visitors are involved in a school visit or participate in a *Technopolis*® school project. The various educational packages offered by *Technopolis*® have been systematically expanded over the past ten years. Each initiative is developed with a specific target group in mind and is geared to the curriculum requirements

TECHNOPOLIS

waar experimenteren fun is

Anyone can blow ordinary soap bubbles, but in Technopolis® you can make a giant bubble-window a metre square in size!.

Children between the ages of 4 and 8 years can 'work' in a house under construction in the Children's Do-centre.

of that particular group, using the most appropriate techniques and methods.
For example, children from the final year of nursery school and the first year of primary school can take part in the interactive puppet show 'Max & Nina build a house'. For the first grade of secondary education (12-13 year-olds) a journey is made in *MysteriX*®, an itinerant science truck. Children in later primary education can take part in classroom workshops such as 'Catch a Thief!' or 'Secret Agent'. The workshops are given in the pupils' own school under the guidance of a *Technopolis*® 'edutainer'. *Technopolis*® also organises information days each year for the teaching staff. The 'TOP-Day' for 'technical education' teachers from the first grade of secondary education is regularly attended by more than 600 people. It also serves as a unique meeting point in Flanders, where members of the educational profession come together, and exchange valuable experiences and ideas. *Technopolis*® also organises an information day on technology for teachers in primary education.

Collaboration with other science communication actors

In addition to its educational role, *Technopolis*® also arranges a wide range of other activities across the length and breadth of Flanders. For example, each year the 'Technology Club' is organised at different locations in Flanders, working in collaboration with local universities and university colleges. Mini-trainings in technology, specifically for girls between the ages of 12 and 14, have been a great success every since their launch in 2004.

In 2009 *Technopolis*® collaborated with Agoria and various technological companies to develop for the very first time a series of Girls' Days. Girls between the ages of 10 and 12 paid a visit to a high-tech company somewhere in Flanders, where they were asked to craft their own technological piece of work. It was an initiative which was much appreciated by all those involved, both the companies and the girls!

Technopolis® is also a partner in several competitions, such as the Flanders Science Quiz and 'Eureka's', a design contest for scientific experiments. In addition, the Flemish Science Week is organised once every two years, not to mention the wide range of science-based activities which take place each year in universities, university colleges, scientific institutions, libraries, interested clubs and societies.

An international perspective

Technopolis® is a full member and governor of Ecsite, the European network for science centres and museums. In 2009 *Technopolis*® was also taken on to the daily board of administration for the ASTC, the worldwide association of science centres. By playing an active role in these organisations, *Technopolis*® is gradually building-up and securing for the future its own international network for the exchange of professional knowledge in matters relating to science communication.

Moreover, *Technopolis*® is also a participant in various scientific projects at a European level. The science centre is currently involved in two separate programmes which are designed to make the most recent developments in nanotechnology more accessible to the general public.

Equally significant, *Technopolis*® and fourteen other European science centres and organisations have launched a collaborative project known as ACCENT (Action on Climate Change through Engagement, Networks and Tools). In the course of 2010 the various partners plan to organise a wide range of activities which will improve awareness and communication on matters relating to climate change, with the ultimate aim of persuading people across the continent to change the way they behave. As part of this programme, Technopolis® was actively present at the climate change conference in Copenhagen in 2009.

With the support of the European Commission, the European project 'Animate-EU' has been developed. Using a series of cartoons and other didactic aids, this project will make children between the ages of five and eight more familiar with the environmental problems of their future: energy, health and water consumption.

Science Centre Academy

Although *Technopolis*® is still relatively young in international terms, it is still regarded by many as a reference for science communication and popularisation throughout the world. The Flemish science centre has often been highlighted at scientific conferences as an example for others to follow. It is hardly surprising, then, that since its opening in 2000 countless foreign delega-tions have travelled to Mechelen in order to learn from *Technopolis*® know-how.

The repeated requests for advice and guidance in connection with the setting up and running of new science parks prompted the decision in 2002 to start up a first Science Centre Academy in Mechelen, a joint venture between Technopolis® and Ecsite. Here experts can share their knowledge and experience relating to the establishment and exploitation of science centres to newcomers in the field. This initiative is now repeated on an annual basis and similar Science Centre Academies have occasionally been organised abroad, in countries such as China and Egypt.

Technopolis® will continue to work in a forward-thinking manner, with the aim of enthusing its various target groups for science and technology through an innovative and creative approach. In order to continue with the same élan during the next decade, a number of expansion and refurbishment plans are currently under active consideration. If you can't wait to see what's on offer in *Technopolis*®, why not surf to www.technopolis.be?

Erik Jacquemyn,
Technopolis®, the Flemish Science Centre

For more information:
www.technopolis.be

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The world at your feet!

On 1 September 2008 – to coincide with the start of the new school year – the start shot was also given for 'The world at your feet!' This project fits neatly within the framework of both 'Flanders in Action' and the science communication action plan of the EWI department. The project is coordinated by the Royal Flemish Society of Engineers, with the support of the Flemish Chamber of Engineering.

What contribution am I making to society? What is the role of science, technology and enterpreneurship in our rapidly globalising world? *'The world at your feet!'* wants to encourage young people to think about these issues. The project seeks to bring pupils in the final year of general secondary education (ASO) and technical secondary education (TSO) into contact with entrepreneurs, engineers and scientists, either in their professional environment or in the classroom, via simulation activities and seminars. The aim is to help the pupils to make the right choice of studies, to increase the intake of science and technology students in further education and to stimulate a spirit of (international) entrepreneurship.

Four times a winner!

The project was launched in 2008 for a three year period on the basis of inter-departmental collaboration within the Flemish Government; between the policy domains of Economy, Science and Innovation on the one hand and Education and Training on the other hand.

'The world at your feet' is built up from four different component elements, which can help secondary school pupils to make a more informed choice about their course of studies in further education.

The first sub-project is a seminar, which is intended as an 'eye-opener' to the consequences of rapid globalisation and the consequent need for more young people to acquire greater scientific and technological knowledge. This seminar is given by Karel Uyttendaele[54]. In the second subproject, the pupils come into contact with 'enthusiasts' from the business world, who consciously chose to follow a career in science, technology or entrepreneurship. This contact can either take place in the companies or in the classroom.

In sub-project three, a simulated task on the web – a *webquest* – will allow the pupils to experience the fascinating complexity of scientific and technological processes and to discover the place of international entrepreneurship within a worldwide context. Finally, the fourth sub-project will analyse the competencies which young people will need if they want to become an engineer or an entrepreneur, and will also allow the participating pupils to see whether or not they possess these competencies.

Schools can register their classes for the four subprojects free of charge and claim back up to a maximum of 1,000 euros for any costs which they may incur. *'The world at your feet'* is also interesting for teachers to learn more about science and technology as it is perceived by their pupils.
Moreover, the project not only tries to reach teachers and pupils, but also seeks to involve parents, who can play a decisive role in their child's choice of studies for further education. In November 2009 this process was assisted by the organisation to five regional information evenings, where local entrepreneurs and engineers entered into debate with the general public and answered questions on relevant topics. These five evenings attracted more than 400 parents, pupils and teachers.

The current state of play

- During the first year of the project, 35 classes were brought into contact with engineers, scientists and technical graduates. For the current school year, 73 company visits are planned across Flanders. This means that in a period of just two years some 2,200 pupils will have been brought into contact with the working environment of highly-skilled and highly-educated scientists and technicians.
- 19 classes during the first school year and 54 classes during the second school year have completed or will complete the full project, including the guidance sessions about study choices and the simulation activities in the classroom; this allows the pupils to explore a number of engineering competencies through a group assignment (webquest).
- Five different webquests have been devised by the project team and placed on the project website. The themes range from solar energy to space travel, and from home care to wind power, and even the 2012 Olympic Games. Two further quest assignments are currently in development.
- 205 seminaries have already been given, and a further forty are scheduled for this current school year.
- 53% of the pupils who go on company visits are girls.

Follow-up

The project can already be regarded as a modest success. If you would like more information, take a look at the website www.dewereldaanjevoeten.be. Here you will be able to read a number of reactions and reports from the classes which have already taken part. After completion of the project in June 2011, the results achieved during the three year period will be analysed in detail.

Liselotte De Vos,
Research Division

Chris Vandesande,
Royal Flemish Society of Engineers (KVIV)

54 In a previous life, Karel Uyttendaele was a director of Agoria and Hewlett-Packard, and head of cabinet for the Secretary of State for Computerisation.

NFTE™ Belgium
Network For Training Entrepreneurship

Jongeren stimuleren tot ondernemen

"Don't waste your live for just a few euro's"

An interview with Lena Bondue

NFTE is the abbreviation of Network for Training and Entrepreneurship and offers training and guidance to opportunity-seeking young people (both mature teenagers and adults) which will help them to discover the magic of entrepreneurship. It is not so much the intention to stimulate them all to go into independent entrepreneurship as such, but rather to help them to develop an entrepreneurial spirit, an enterprising state of mind. The NFTE course has the following specific objectives: to motivate young people to successfully complete their secondary education and obtain further qualifications, so that they can then approach the next phase of their life in an enterprising fashion, either as an employee in a company or as an independent entrepreneur.

How do you set about this task?
"NFTE works closely with partners from the world of education and the social midfield: local social and welfare organisations, centres for part-time education, etc. Once a target group has been recruited, a team of two NFTE certified trainers will steer these youngsters through a 60-hour training programme. This includes the drawing up of a business plan for a project about which they can be really passionate (for example, a hairdressers or a snack-bar). Attention is devoted to the unique aspects of their service provision and to the necessary financial aspects (start-up costs, how many customers will they need to break even, etc.), as well as to matters such as ethics, sustainability, use of computers, and so on. At the end of the course, the participants have to present their business plans to the public and a professional jury, following which they will be awarded an NFTE certificate.

NFTE is unique. On the one hand we concentrate on groups who are difficult to place in the employment market, which is fairly unusual. On the other hand, we offer our students made-to-measure programmes. Our courses are not technical. We do not focus on the theoretical and technological aspects of entrepreneurship. Instead, the participants are able to work at their own project, so that they can appropriate it for themselves, which helps them to find the necessary enthusiasm and passion to press on to the end of the road. This explains why 92% of our students successfully complete the course, while in many previous situations of a similar kind they have simply given up."

For a fistful of dollars…

Does working with this kind of young people require a specific approach?
"It certainly does. Our target group consists largely of young people with a low level of schooling, many of whom have a long period of unemployment behind them and/or come from an immigrant background. They don't like going to school, but they are not yet ready to work. Many of them are drifting towards trouble. It is crucially important for these youngsters to find an impulse that will draw them closer to the world of employment. In this way, they can give themselves the chances they deserve. The best approach with these young men and women is a highly structured one, not dissimilar to a school context. Our methods are very interactive, with plenty of practical exercises and roll-playing sessions. The courses are given by professional trainers in a business environment. This makes the whole process much more concrete for those taking part. In addition, the 'fun' element should not be underestimated. Because they are working on their own projects, they are able to dredge up reserves of ingenuity and creativity. For example, their business plan presentations do not only contain dry statistical tables, but are nearly always spiced with colourful charts and photographs."

How did the idea to start with NFTE in Belgium first come about?
"NFTE was first set up in America 25 year

ago[55] by businessman Steve Mariotti[56]. After he had been attacked by a group of young people in Central Park, he began to think how stupid it was that his assailants should risk his life and their future for the sake of a few lousy dollars in his wallet. He decided to try and create something positive from this experience. He realised that no official initiatives in the States were focusing on the needs and problems of this deprived group. And so he decided to do something about it himself. 10 years ago NFTE Belgium was started, as the first country outside the USA. A few members of the Brussels Chamber of Commerce got together with several company directors and decided to follow the Mariotti example. And so NFTE Belgium was born."

The essence of enterpreneurship: passion for a project

What in your opinion are the key factors in the success of the NFTE in Belgium?
"Unquestionably the fact that the participants are engaged in making their own projects. The feeling that 'this is mine' plays an important role. Another plus point is the simple and repetitive nature of the curriculum. Entrepreneurship is reduced to its simplest and most fundamental element: the passion for a project that you can believe in, heart and soul. The course also generates high levels of interactive involvement, fun and commitment amongst the participants. This would not be possible without the direct contribution of our partners from the business world: they provide top-quality guest speakers, courses and presentations in real companies, coaching by true business professionals. The NFTE package stands or falls by the quality of its trainers. Fortunately, they are all people with a burning passion for entrepreneurship, who have a strong attachment to the young people in our target group and are prepared to make a real effort to share their knowledge and experience with them."

> ***In Flanders there is a great desire for quality in entrepreneurial initiatives.***

Is there a difference in the attitude of boys and girls towards entrepreneurship?
"That is definitely the case at the start of the course. The boys are more open to entrepreneurship. The idea of being your own boss appeals to them. The girls are more inclined to think in terms of employee status, administration, childcare, and so on. But this is just my conclusion from our experience with our target group. I wouldn't like to generalise about all the boys and girls in Flanders. And during the programme, this difference often evens itself out."

Is there a specific aspect of the course which helps to bring about this change?
"No, it is not a question of a specific aspect. The course in general seeks to make clear to both boys and girls that entrepreneurship is a realistic and viable option for everyone. Or that an enterprising approach can work to their benefit. In particular, it is the interest of the girls which is sharpened when they realise – during the compilation of their business plan – that the starting up of their own business is not just a crazy dream, but is actually something they can achieve."

Entrepreneurship is not just for the 'happy few'

How did the partnership with Bizidee and Enterprize first come about?
"The collaboration with 'Bizidee' and 'Enterprize' dates from four years ago. Bizidee was already involved with a contest formula, and the enterprise plan competition called Enterprize.be already existed. And we also organised a local business plan competition at the end of each course, roughly forty times a year. The then office of the Minister of Economy and the administration wanted to merge these various competitions into a single trajectory. Our NFTE students are now encouraged to take part in the Enterprize competition. Last year we had ten candidates selected, one of whom won first prize in the 'micro-economics' category. Another one was awarded second prize in the 'enterprise' category. In other words, NFTE helps budding entrepreneurs from low-opportunity groups to reach the podium in the Enterprize contest. They have proved once and for all that enterpreneurship is not simply the preserve of the *happy few*."

Promoting an entrepreneurial spirit is not the same as promoting entrepreneurship

Is it still fair to speak of the education system as an 'enterprise-shy' environment[57]?
"I have seen major changes during the past ten years. Education is becoming increasingly open for initiatives which promote entrepreneurship or an entrepreneurial attitude. In particular, promoting a greater spirit of enterpreneurship is something which everyone can support. But some educationalists are much less comfortable than others with the practical side of this idea. There is a huge difference between wanting to do it in theory and actually doing it in practice: But schools will have to make it happen, because entrepreneurship is now a basic curriculum requirement. It is equally difficult to make schools create their own entrepreneurial culture. But this is the case everywhere, even in the business world. No company is 100% entrepreneurial. The top companies may excel in enterpreneurship, but this is not the case for the majority of companies. It is much the same story in schools. I see plenty of creativity and innovation, and plenty of enterprising head teachers. But much of this is stifled by the rigid planning which the schools need to follow. Moreover, the schools are deluged with thousands of projects from which they can choose, and only 50 or so of these deal with entrepreneurship."

Is there not a risk of overlap if too many initiatives are all seeking to achieve the same objective?
"No, on the contrary. This results in greater levels of complementarity. We recently took part in the Effecto study, in which many of these initiatives were catalogued and categorised[58]. Many of them are short-term and are primarily aimed at sensitisation, such as 'DREAM' and 'Entrepreneur in the Class'. Alongside these, there are also more long-term projects, such as the initiatives organised by VLAJO[59], UNIZO and NFTE. The study showed that there is no harm in trying to increase pupil awareness of enterpreneurship in various different ways. In other words, there is no question of our getting under each other's feet. Besides, NFTE has a very specific target group."

Learning to learn in a more stimulating manner

The Effecto study makes clear that the initiatives in entrepreneurship do little to significantly improve many young people's desire to go to school.
"This is true. Of course, the Effecto study looked at all the different initiatives. We carry out our own pre-course and post-course surveys for every course we give. Our findings suggest that our NFTE programme does have an effect on the desire to stay at school and the willingness to obtain good qualifications, precisely because our methods offer the participants the opportunity to approach the subjects they get at school in a completely different manner. In this respect, NFTE is not the same as many of the other Effecto-rated initiatives."

Can you measure the real impact of participation in a NFTE course?
"Yes. Research conducted in 2008 has shown that 7% of the participants in our courses later start up their own company, usually after a gap of three to four years; 42% go on to work in a company; and 23% complete their studies or try to obtain a diploma. Citibank has given us a subsidy to measure the long-term effects of our courses in 2010. This is something which interests our sponsors – and rightly so."

3,000 students in Flanders

Does NFTE also have an alumni network?
"Not in any formal sense, not yet. We have had participants who contact us again at a later date; for example, if they need specific advice about starting up their own business. In this respect, we were recently recognised as a support centre for the investment fund. Young people who want a starter loan or a consolidated loan[60] can come and see us. We also work with other partners on matters relating to finance, coaching and support.
In 2010 we will be launching a new website with a forum, so that participants and trainers can come into better contact with each other. This will probably lead to the start of some kind of alumni programme. Once again, it is a question of resources. But with 3,000 former NFTE participants in Flanders, we certainly have the basis for a good alumni network."

> ***"Everyone supports promoting a greater spirit of enterpreneurship, but some educationalists are much less comfortable than others with the practical side of this idea."***

There are also NFTE organisations in other countries[61]. Do you exchange information?
"Yes, but not enough. At European level, we meet just once a year, for a seminar which lasts just one and a half days. This allows us to exchange ideas about strategy and the development of the organisation, and also about the practical aspects of training. We also have a one-day meeting each year in the United States with other NFTE organisations from around the world. Regrettably, one day is never enough. Even so, at every meeting you discover an enormous richness, a different view of what entrepreneurship can mean in another local or national context. You can always learn something, things which you can apply here, with a little bit of adjustment."

No real desire – or need – to become an entrepreneur.

Do you have your own unique approach to encourage young people in Flanders and Belgium to become entrepreneurs? Does

this approach differ from the approach of other countries?
"If I compare our approach with our colleagues in Europe, I see that in Flanders there is a great desire for quality in entrepreneurial initiatives. We are trying to create something solid and reliable. In addition, we have noted that our participants do not have any real natural urge to become entrepreneurs, but that is largely true of the other European lands as well. But it is a different story in China and India: both these nations have a very strong enterpreneurship culture. It is almost built into their genes! Necessity and hardship has forced people to push themselves to the limits of their own creativity. This is no longer the case in Europe. But you are not going to hear me knock the qualities of our Flemish young people and their spirit of entrepreneurship. Within the European context, we are doing pretty well, all things considered."

> ***"Our methods are very interactive, with plenty of practical exercises and roll-playing sessions."***

> ***"The NFTE package stands or falls by the quality of its trainers."***

A long-term vision across different policy domains

In your opinion, how can policy contribute towards an entrepreneurial culture?
"Including entrepreneurship as a curriculum requirement, but without providing the necessary resources to back it up, is simply taking the easy way out. The link between the business world and the education system is already guaranteed by the projects of organisations like NFTE and VLAJO. That is their strength. But they need to have the resources to do the job properly. Through the need to make savings in education, we have already been forced to cancel one of our projects in a centre for part-time schooling which would have made the NFTE programme more widely known amongst young people. I know that it is easier said than done, but it would be useful if all the different policy domains agreed on a total pot of resources and then distributed them to the areas of greatest priority, rather than everyone trying to hold on to their own piece of the cake. The current fragmentary policy means that lots of initiatives get a little support for a short time. In the long run, we need a more integrated, long-term policy vision for the future, certainly as far as education and entrepreneurship are concerned."

Ilse Boeykens
Enterprise and Innovation Division,

Els Vermander and Peter Spyns
Strategy and Coordination Division

More information about the NFTE in Belgium via www.nfte.be

Lena Bondue and Erik Dauwen form the management team of NFTE Belgium. Lena graduated in social work and followed various post-university courses at leading academic institutions, at home and abroad. She started her career as an entrepreneur in her family's business in West Flanders. Capitalising on this experience, she later became director of one of Brussels' largest non-governmental organisations for the professional training and job-coaching of persons in underprivileged circumstances. She also worked in the United States, in both social services and education. She is a member of several international networks connected with the promotion of entrepreneurship. Lena Bondue is regarded as an expert within her particular field of expertise.

55 www.nfte.com

56 http://en.wikipedia.org/wiki/Steve_Mariotti

57 W. Van den Berghe, (2007), Enterprising learning and learning enterprise, Koning Boudewijnstichting, Brussels. Also available via www.kbs-frb.be.

58 The Flanders DC Knowledge Centre at the Vlerick Leuven Ghent Management School recently published the results of the Effecto study. The aim was to chart the effect of the many entrepreneurial initiatives in education. In the first instance, the study analysed the factors which determine the intentions of secondary school pupils in Flanders to become entrepreneurs. It also examined the impact of enterpreneurship education on the pupils' desire to become an entrepreneur, and on their attitudes towards creativity, international mobility, job perspectives and the business world. Finally, they investigated how the impact of these initiatives can differ, depending on the pedagogic methods and techniques used. The Effecto study can be consulted on: www.flandersdc.be .

59 Also see elsewhere in this edition: p. 14

60 www.fonds.org/eCache/DEF/137.html

61 NFTE is also active (amongst other places) in the United Kingdom, Ireland, The Netherlands, Germany and Austria, where it is fully integrated into the education system. NFTE is also present in America, China and India.

Europe plays the regional card

Innovation: a core concept for economic growth and increased productivity. In addition to this need for innovation, there is also a growing demand for instruments to measure it accurately. In answer to this demand, the European Innovation Scoreboard or EIS was developed as an evaluation instrument of European innovation performance[62].

The EIS compares annually the innovation efforts made by each of the EU member states, using 29 separate indicators. However, it is also clear that the process of innovation does not run evenly within national boundaries. Each member state is made up of different regions, each with its own characteristics, strengths and weaknesses. These regions are increasingly acting as the real motors of economic development. This explains the growing demand for innovation indicators at a regional level. The *Regional Innovation Scoreboard (RIS)*[63] 2009 extracts regional data from the EIS, drawing in particular on the Common Innovation Survey (CIS)[64].

Methodology

Notwithstanding recent progress in the field of regional indicators, much work still remains to be done. The sub-division of data to the NUTS2 level – NUTS stands for Nomenclature of Units for Territorial Statistics – is still not possible[65] for every country. For Belgium, the NUTS1 level coincides with the three regions (the Flemish region, the Walloon region, and the Brussels Capital City region); while the NUTS2 level coincides with the 10 provinces (plus Brussels). However, this regional sub-division for the NUTS2 level is only possible for 16 of the 29 EIS indicators. For this reason, the RIS for 2009 does not contain a general ranking for individual regions, but rather for groups of regions or clusters. These groups are assessed as high innovators, medium-high innovators, average innovators, medium-low innovators, or low innovators.

	Flemish region	Brussels region	Walloon region
Enablers	Medium-high	High	Medium-high
Firm activities	High	Medium-high	High
Output	High	High	High
RII	Medium-high	Medium-high	Medium-high

Figure 4: Regional innovation performance

Two separate procedures are used to determine the clustering. The first procedure seeks to find similarities between individual regions in terms of performance for the available indicators and then calculates the actual performance level for each region. The second procedure searches for similarities in the patterns of regional strengths and weaknesses.

Performance and output

The 16 indicators from the EIS are grouped into three sub-classes: enablers, firm activities and outputs. In addition, a global score for all 16 indicators is calculated, to produce what is now known as the Regional Innovation Index (RII).

Enablers are external factors/indicators which may have an influence on innovation activities. Typical examples are: the participation of the population in life-long learning, public R&D expenditure, accessibility to broadband technology, the proportion of the population with a tertiary education diploma, etc.

Firm activities are the indicators which measure the innovation efforts made within companies. Typical examples are: R&D expenditure at company level, the number of European patents per million inhabitants, the level of innovation activity in SMEs (both internal innovation and collaborative ventures), innovation expenditure other than on R&D (as a percentage of turnover), etc.

The third and last group of indicators consists of the *outputs* of innovation activities. These measure both technological (process or product) and non-technological (marketing or organisation) aspects, as well as the efficient use of resources (employment in knowledge- intensive services and in medium-high and high-tech industry) and the end effect of innovation (new products and markets).

In order to calculate the *Regional Innovation Index (RII)*, every indicator from the three groups is allocated a weighting co-efficient to make allowance for the application of a cluster analysis. Each region is then categorised within a particular cluster, such as high or medium-high.

Patterns of strengths and weaknesses

There is a second method which also focuses on clusters and the differences between regions. However, this method uses similarities in the patterns of regional strengths and weaknesses as the basis for its analysis. This means that some regions may have different levels of actual performance, but may still be grouped together in the same cluster because they have an almost identical pattern of strengths and weaknesses. This second line of approach is specifically designed to establish the relative strengths and weaknesses of a region, rather than its level of actual performance.

The regional innovation map of Flanders

For *enablers* the Flemish region and the Walloon region were both categorised as 'medium-high innovators'. The Brussels Capital City region was assessed as a 'high innovator', partly because of its higher score in terms of the general level of education (the number of people with a tertiary education). The region's performance in 2006 was comparable to performance in 2004. The strengths and weaknesses analysis reveals that enablers are the main strength of the Brussels region.

In terms of *firm activities* the Flemish region and the Walloon region both score as 'high innovators', whereas on this occasion

the Brussels Capital City region is only rated as a 'medium-high innovator'. Once again, a comparison of the Belgian regional figures for 2004 and 2006 results in no changes to the cluster grouping of the regions. The strengths and weaknesses analysis reveals that firm activities are the main strength of the Flemish and Walloon regions.

The *outputs* scores for all three Belgian regions in 2006 were in the 'high innovators' category. In comparison with 2004, this represents an improvement for the Walloon region (which was then a 'medium-high innovator') and a status quo for Flanders and Brussels. Both the Flemish region and the Walloon region are ranked lower for the cluster of indicators relating to the efficient use of resources (labour, energy).

The results of the overall Regional Innovation Index clustering

The results of the overall *Regional Innovation Index* clustering exercise for 2006 produced lower scores than in 2004. The Flemish region dropped from being a 'high innovator' to a 'medium-high innovator'. The Walloon region and Brussels Capital City region were able to maintain their status as 'medium-high innovators'. However, it is not possible on the basis of this analysis to identify the reasons for the lower clustering of Flanders.

The Walloon region scored better in 2006 than in 2004, in particular for certain indicators based on the CIS data. In concrete terms, this was translated into higher scores for the *outputs*, which measure the impact of innovation. For the indictors assessing 'new products' and 'new markets' in relation to total turnover, Wallonia scored significantly better than Flanders.

The same pattern is repeated for *firm activities*. For the indicator 'innovation expenditure other than on R&D expressed as a percentage of total turnover' Wallonia was again well ahead of Flanders. However, this analysis fails to explain whether this better performance was actually the consequence of better global results or whether it was an effect of the preponderance of CIS indicators in the regional index (see box). In other words, we need to be careful how we analyse and further develop regional data of this kind.

Peter Viaene,
Knowledge Management Division

A critical assessment

Both cluster methods devote considerable attention to their methodology. For example, use is made of linear regression to estimate the regional figures for which no data is available. Researchers were also confronted with a number of other limitations, which necessitated the development of 'artificial' solutions. The allocation of the innovation activities for a company which has numerous outlets in more than one region was a factor which required particular attention. All the innovation activities for the region where the company has its headquarters are allocated to that region, whereas in reality the innovation activities and their effects could be much more widespread. Since this location problem is more frequent with large companies, their impact on the figures is fairly limited.

In some cases the number of companies included in the national sample is insufficient to allow further sub-division at regional level (NUTS1 or NUTS2). As a consequence, the results are sometimes combined with the results of neighbouring regions, so that the sampling can be based on a statistically sufficient number of observations.

The preponderance of CIS indicators (50%) in the RIS (in comparison with the EIS) is particularly noticeable. This can work to the advantage or disadvantage of particular regions. Many of the indicators have their origins in the CIS data and these indicators often refer to small and medium-sized companies. This again emphasises the importance of having correct and complete CIS data. The RIS is a major step in the right direction, but the factors mentioned above suggest that caution is still needed in interpreting the results.

For more detailed information:

The analysis report:
http://www.proinno-europe.eu/www.proinno-europe.eu/admin/uploaded_documents/RIS_2009-Regional_Innovation_Scoreboard.pdf

The figures in detail:
www.proinno-europe.eu/www.proinno-europe.eu/admin/uploaded_documents/RIS_2009_Annex_4.xls

The methodology:
www.proinno-europe.eu/www.proinno-europe.eu/admin/uploaded_documents/RIS_2009_Methodology_report.pdf

62 At the proposal of the European Commission and within the framework of the Lisbon Strategy, a first version was drawn up in 2001.

63 Earlier versions of the RIS from 2002, 2003 and 2006 only allowed for the comparison of a limited number of indicators from the EIS, since at this time there was no usable data available from the Common Innovation Surey (CIS). The comparison in 2009 was made for the European Union and Norway.

64 If possible, figures from 2004 and 2006 are compared for variables.

65 The data for Belgium is confined to the NUTS1 level: the Flemish region, the Walloon region, and the Brussels Capital City region. No data is available for the NUTS2 level (provinces).

Are business enterprise centres useful for starters?

The Policy Research Centre for Entrepreneurship and International Entrepreneurship (STOIO[66]) was commissioned by EWI to carry out a study to assess the role of business enterprise centres.[67] The purpose was twofold: to examine the range of services and facilities offered by the centres, and to see how far these services and facilities are attuned to the requirements of companies in terms of infrastructure and guidance.

A business enterprise centre makes small-scale, low-threshold accommodation available to starter and growing companies. Simultaneously, it offers a wide range of common services on the basis of shared costs. This might mean something practical, such as the use of a shared printer, kitchen or reception, but it can also mean a support function, like a joint secretariat, a permanent telephone manning system, global post distribution or management advice.

Business enterprise centres are different from incubation and innovation centres, and from transit premises. Incubation and innovation centres offer similar services, but are targeted in the first instance at companies with high-tech activities, closely related to research and development. Transit premises are intended for growing companies or as a temporary location for a department which wants to expand a particular activity within a particular region.

Supply and demand

The first phase of the study involved the collection and collation of information relating to the range of services and facilities offered by the different business enterprise centres. In addition to general matters such as personnel, focus on a particular industry, financing, number of premises available, etc., attention was also devoted to the added value services and facilities offered by the centres and the importance attached to them – in the opinion of the centres – by the user-companies.

The second phase looked at the demand side of the situation. The leasing companies in the centres were asked to say which services and facilities were important for them and how the centres were able to offer them added value. To assess the level of this added value, a control group of companies not leasing premises in the centres was set up. The results of the two groups were then compared.

Young lessees

In their wish to fulfil their mission, the business enterprise centres often have different points of emphasis, but there are a number of key elements that they all have in common: their support for growing companies, their promotion of entrepreneurship, their stimulation of the local economy and their desire to create employment. The focus on starting and growing companies is perhaps the most important common denominator. Two-thirds of the companies in the business enterprise centres are in the process of expansion and cannot be regarded as 'established'. The remaining third are often subsidiaries or branches of larger companies. The large majority of these companies take up residence in a business enterprise park during the first two years of their existence.

The services and facilities offered

A number of facilities are widespread: the leasing companies value the use of a conference room, a copy/fax machine, a cafeteria and a computer network, as well as a communal reception and postal service. The value of a number of other services is overestimated by the centres: the lessees certainly value access to management advice, but use it much less than the centres seem to think.

Networking

It was expected that the user-companies in the business enterprise centres would attach a great deal of significance to networking. And indeed, the results showed that companies in the centres do have a stronger networking capacity than companies outside the centres. Even so, this is not one of the main reasons why companies come to the centres in the first place. The most commonly cited reasons are location, accessibility, the site, leasing flexibility and common services and facilities. Networking with other companies is seen as being less important than these other factors.
On the other side of the coin, the centres actually see networking as being one of the most important advantages they provide. At first glance, these findings suggest that the centres do not actually strengthen the networking capacity of their user-companies, but rather that they attract companies that already have a strong networking culture. However, it is also possible that the user-companies fail to appreciate fully the effect that the enterprise centres are having on their networking activities. For example, they might ascribe a collaboration which arose as a result of one of the centre's network events almost entirely to their own efforts. If this is so, the impact of the enterprise centre is real, but not sufficiently visible.

Further study needed

The purpose of this study was to see to what extent the range of services and facilities offered by the business enterprise centres correspond with the real needs and requirements of the starter companies that lease their premises. However, many other questions still remain to be answered. For this reason Flanders DC[68] is currently putting the finishing touches to a new research study which follows up on many of these unresolved issues: 'The role of business centres for entrepreneurship'. To be continued…

Liesbet Schruers,
Enterprise and Innovation Division

66 EWI Review 1 2: 9

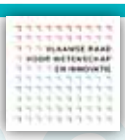
67 C. Vereertbrugghen, M. Knockaert, B. Clarysse, (2009), 'The role of business enterprise centres in the support of growth-oriented companies: a comparison of supply and demand' in A Scientific Look at Growth in Flanders, Policy Research Centre for Entrepreneurship and International Entrepreneurship, Ghent, pp. 207 – 224

68 EWI Review 3 2: 17 – 19

Advisory bodies for the EWI policy domain

Running parallel with the restructuring of the Flemish administration and Flemish public institutions in 2000, the Flemish Government deemed it appropriate – under the title of Better Government Policy – to reorganise its advisory systems. In the course of the years, a polyglot amalgam of think tanks, consultative bodies and advisory councils – some more institutionalised than others – had grown up, not all of which were suited to modern government.

The Flemish Council for Science and Innovation



For the policy fields of Science and Innovation, it was decided to convert the existing Flemish Science Policy Council (VRWB) into a new and independent strategic advisory body: the Flemish Council for Science and Innovation. (VRWI)[70]. Since 1985, the VRWB had been the advisory organ for all matters relating to scientific policy, but in practice it had also expanded its sphere of activity to include innovation – a fact which was clearly recognised in the new foundation decree.

From VRWB to VRWI

The VRWB has left an indelible imprint on science and innovation policy in Flanders. The rise of the VRWB ran parallel with and interacted with the organisation of the Flemish science and innovation system. The VRWB contributed in large measure to the creation of the broad social consensus that science and innovation should be pushed forward as one of the region's highest priorities. During its 25-year existence, the VRWB – acting under the impulse of its successive presidents Theo Peeters, Jef Roos, André Oosterlinck, Roger Dillemans en Karel Vinck – gradually evolved from a reactive, policy-evaluating body to a pro-active, upstream advisory council. In this manner, the VRWB became an important actor in the decision-making process of the Flemish Government.

This was translated into 134 advisory reports, 34 recommendations, 14 commentaries, 21 volumes in the VRWB study series, 12 colloquia, 22 newsletters and 5 memoranda.

The composition of the VRWI

The new VRWI – with Dirk Boogmans as president – will continue and strengthen its dual role as a provider of retrospective advice and a proactive guide of policy. The VRWI is a unique forum, in which actors from the academic and research world and from the world of business and economics can come together to reflect on general guidelines for science and innovation policy in Flanders. The VRWI has 20 voting mem-

SERV

Sterk door overleg

SERV Sociaal-Economische Raad van Vlaanderen

Founded in 1985 – as the successor to the GERV (Regional Economic Council for Flanders, 1970) and the ERV (Flanders Economic Council, 1952) – the SERV is the consultation and advisory body for the social partners in Flanders. In the course of the years, the tasks and structure of the council have undergone major changes. These reached their climax with the restructuring of the Flemish advisory system under the Better Government Policy programme[74].

A house with many mansions

The SERV Decree makes a distinction between: a) the role of the SERV in the field of social dialogue and as an advisory council; b) its role in respect of other tasks; and c) the instruments which it uses in pursuit of these roles.

The SERV advisory council consists of 20 representatives drawn equally from the various employers' and employees' organisations. The council functions as a focal point for social dialogue and negotiation in Flanders. However, it also acts as a strategic advisory council for the policy domains known as Services for General Government Policy (DAR) and Work and Social Economy (WSE), as well as for the policy field of Economy within the policy domain for Economy, Science and Innovation (EWI), and the policy field for Energy within the policy domain for Environment, Nature and Energy (LNE). For the policy domain of Finance and Budgeting, the provision of advice relating to budgetary policy is assigned as a specific task in the SERV Decree. From the perspective of its consultative function, the council is able to place any points it wishes on the agenda, and has a clear mandate to closely monitor the socio-economic dimensions of all other policy domains. The SERV also serves as the secretariat for the Flanders Social and Economic Consultative Committee (VESOC), which acts as a forum for discussions between employers, unions and the Flemish Government. In this manner, the 2020 Pact[75] and the recent employment opportunities and investment plan (WIP) were largely put together by the SERV.

In addition, the SERV also has a number of other specific tasks. These include the preparation of professional competency profiles and standards, and research within the framework of the STV Innovation and Work[76] relating to innovative technological and organisational developments in the business world.

A number of other organisations have been incorporated into – or have been given a place within – the SERV. They are covered by the legal personality of the SERV and make use of its common services and facilities. In all other respects, however, these organisations function in full autonomy, having their own separate staffs and separate boards. Examples include the Flemish Harbour Board, the Flemish Airport Commission, the Mobility Council (MORA) and the Strategic Advisory Council for Health, Welfare and Family Policy in Flanders (SAR WGG).

How does the SERV work?

The functioning of the SERV as an advisory and consultative body is structured around four clusters, which allow full justice to be done to the wide range of tasks for which the SERV is responsible. The cluster for labour market policy and social policy covers the labour market, education, social profit and poverty. The cluster for the economy and economic environment policy deals with themes relating to the economy, innovation and regional socio-economic dialogue. There is also the cluster for finance and budgeting, and the cluster for regulation and the ordering of the market, which

An important principle in the reform of the system was that the advisory councils must be better attuned to the administrative organisation of the Flemish Government. In practical terms, this meant that as far as possible there would just be one advisory body for each of the different policy domains.[69] This has resulted in a major shake up: a number of new strategic advisory councils have been created and some of the existing advisory councils have been given a new strategic dimension, while others have been decommissioned and/or absorbed into new structures.

Here we will give a brief summary of the two advisory councils for the EWI policy domain. Firstly, there is the Flemish Council for Science and Innovation (VRWI), which covers the policy fields of Science and Innovation and builds on the policy advice foundations created by its predecessor, the Flemish Science Policy Council. Secondly, there is the SERV or Flanders Social and Economic Council, which functions as the strategic advisory body for the Economy policy domain.

bers, who are appointed by the Flemish Government for a period of four years. In addition, there are six other ex-officio members who attend council meetings by virtue of the public offices they hold, and who each have an advisory vote. A staff of eight administrators supports and coordinates the activities of the council.

An important new innovation is the setting up of an international 'chamber of reflection' within the framework of the VRWI. This International Advisory Board (IAB) must be comprised of at least three top experts who work in science and innovation outside Belgium. From its international perspective, it is intended that the IAB will formulate advice about the existing position of science and innovation in Flanders, about the challenges for the future, and about possible answers to these challenges. For the preparation of its guidance to the Government, the VRWI relies on the support and assistance of two permanent commissions: the Science Policy Commission and the Innovation Policy Commission. An expert Indicators and Budget Group analyses the yearly funding for Science and Innovation and deals with matters relating to the indicators necessary for the follow-up of the Innovation Pact[71].

Plans for 2010

The composition of the new International Advisory Board (IAB) is a key point in the VRWI agenda for 2010. In view of the challenges which need to be faced and the crucial decisions which need to be taken, the testing of Flemish policy against the international criteria of top foreign experts is of great importance. In addition, it is planned to draw up a vision text relating to the internationalisation of Flemish science and innovation policy, and also to start up an ad hoc work group under the title EU-8-KP, which will examine the following round of the European framework programme[72]. At the request of the Flemish Minister for Innovation, the VRWI will also formulate a strategic innovation agenda for the medium-long term, aimed at promoting and supporting the transformation of the Flemish economy[73]. With this aim in mind, the VRWI will set up a number of innovation steering committees. The VRWB had already carried out important work in this respect. An exploratory investigation into the priorities for technology and innovation in Flanders resulted in 2006 in the identification of six technology and innovation clusters. These were later refined and deepened to define ten innovation policy spearheads. The innovation steering committees will take this process a stage further. The first of these committees will look at matters relating to the vehicle industry, a sustainable chemical industry and social innovation.

Eva Van Maele,
VRWI

focuses on topics such as the working of the government, energy, the environment, spatial planning, housing and the media.

The implementation of policy is effected through annual work programmes, which are updated every six months. These programmes contain projects and activities which are set up at the SERV's own initiative, together with an inventory of the issues for which advice has been sought by the Flemish Government or the Flemish Parliament. In practice, the SERV does not take up every request for advice, but only those which are 'worthwhile'. To decide which matters fall within this category, the SERV uses a number of criteria which serve to ensure the correct orientation of important socio-economic issues and strategic discussions. This helps to create room for the SERV's own studies and proactive advice.

Results (2004-2009)

During the previous legislature the SERV received 397 requests for advice. These were spread across all 30 of the individual policy domains, with the EWI coming in third place (30 requests) behind environment/energy and education. On average, the SERV had just 27 days in which to reach its conclusions. In 20% of the cases, there was less than 10 days time in which to provide a response. The SERV offered full advice in 224 cases and shortened advice in 173 cases. The most 'substantial' advice was given in matters relating to the environment and energy, followed by economy and innovation, government administration and education. In addition, during the previous legislature the SERV published 57 reports and advices on its own initiative. The main themes touched on by the council included work, the economy and budgetary matters, but energy, spatial planning, mobility, administrative matters, living conditions, general government policy, education and welfare were also considered.

Plans for 2010

The work programme for 2010 contains initiatives which relate to all four of the clusters mentioned above. Amongst the most important themes during the first six months are: the growth of Flemish companies with the retention of decision-making powers in Flanders; an investigation of the subsidies for the development and management of industrial sites; an evaluation of the renewable energy policy; the acceleration of investment programmes; and an evaluation of Flemish fiscal policy. The SERV is also involved with the process of operationalising the 2020 Pact[77], the WIP and the States-General Industry Plan[78]. Within the framework of the Belgian presidency of the EU, in July the SERV will be organising a seminar on the theme of innovation and the role of the social partners, together with the European Economic and Social Committee, the other regional socio-economic councils and the Central Council for Business Activity.

Peter Van Humbeeck,
SERV

69 This new framework was set by the Decree for the organisation of strategic advisory councils, dated 18 July 2003.

70 This was promulagated in the Decree for the organisation and financing of science and innovation policy, dated 30 April 2009. This decree came into effect on 1 January 2010.

71 EWI Review 3 1: 18 – 19

72 EWI Review 2 1: 30 – 33

73 Also see p. 48

74 This led to a new SERV decree, which came into effect on 1 January 2009.

75 EWI Review 3 3: 24 – 25 & 35

76 Also see p. 30

77 EWI Review 3 3: 24 – 25 & 35

78 Also see p. 48

Innovative work organisation: it really pays!

Since 1984 the STV Innovation and Work – embedded in the SERV[79] – has been carrying out research on behalf of the social partners with regard to new and innovative forms of business and labour organisation. Some of their research results are used to monitor specific objectives in the 2020 Pact[80].

Innovation is often assumed to mean the application of new technical developments in production processes (e.g., the full automation of complex work procedures); in the products themselves (e.g., the use of new nanotechnology); or in services (e.g.., the development of new software applications). Technological innovation is unquestionably an important component of innovation policy, but there are other aspects which are equally important. Adjusting work organisation, so that people are better able to utilise their competencies without (or with less) stress; the implementation of a well thought-out competency policy; and the better attuning of the professional and private spheres of life: these are all examples of non-technological innovations that can be included under the heading of 'social innovation'[81].

A competency policy attuned to work organisation

This broader interpretation of innovation has already been accepted in many member states of the European Union[82], and there are also many organisations and companies in Flanders which are interested in the concept. As a result, last year the SERV was able to collect more than 100 inspirational examples of competency policy in practice[83].

For example, the Martens Brewery had established that a knowledge gap had been created in its organisation by the retirement or departure of many experienced key workers in 2003. This had a negative effect on both the performance of the company and the job content/satisfaction of the employees. Very few staff remained who had the skills to carry out the more complex machine-operated tasks, while the other remaining tasks became necessarily more 'routine'. Using a well-considered plan, in which good communication and the commitment of the team leaders and the operators on the work floor were central, it was possible to achieve a greater polyvalence amongst the workforce and to give individual staff a more varied assortment of tasks. This led to a more motivated team and to better overall performance by the company as a whole.

It is the interaction between the different aspects of a company's operations which is particularly important in achieving optimal work organisation. In this case, the learning of a wider and more varied range of competencies led to a chain-reaction of improvements in terms of work quality and company performance. The Martens example also shows that it is essential for successful social innovation that organisational change should be deeply rooted in the wider vision of the company. There is little point in improving staff competencies if they cannot be used in an appropriately adjusted work organisation.

Teamwork leads to a better exploitation of competencies

Some companies and organisations attempt to adjust their work organisation more directly; for example, by the introduction of teamwork, in which a greater range of responsibilities are allocated to the team members. The triennial Technology-Organisation-Work survey carried out by the STV Innovation & Work[84] has shown that during the period 2001-2007 the number of companies organised on a team basis has remained more or less stable at about 45%. However, differences are noticeable in terms of sectoral clusters. In the measurements for 2001, 2004 and 2007 teamwork was most thoroughly implemented in the cluster for Education, Government and Social Profit (respectively 64%, 54% and 58% of the organisations). The corresponding figures for industry were 24%, 31% and 31% of the companies surveyed. That teamwork is strongly anchored in these organisations and companies is clear from the fact that a high percentage of the teams are organised on a permanent basis (between 80% and 85%). But perhaps the most important trend is the increase in the number of competencies being conferred on the teams. For example, in 2007 nearly 90% of the teams were empowered to arrange the internal distribution of work tasks (compared to just 58% in 2001); 85% were allowed to determine their own methods of working (55% in 2001); 69% were responsible for quality control (37% in 2001); 61% for the organisation of staff training (32% in 2001); and 30% for the appointment of their own team leader[85].

The motives which inspire organisational change are many and varied: to save costs, to work more quickly, to better exploit staff competencies, etc.

Companies and organisations which are team-structured score significantly higher in the category 'better exploitation of staff competencies'. Yet again, there is a clear link between the different component elements of the organisational strategy.

High quality work is good for both staff and company

Social innovation is also concerned with increasing the level of 'workability', i.e., the quality of work. The Flemish 'workability monitor' (WBM)[86] charts the quality of labour through four key characteristics of the job: physical tiredness, work satisfaction (is the job motivating enough), learning opportunities, and the home-work balance. A job which can be scored as 'good' in each of these four categories answers to the definition of a 'workable' job. In 2001 this was the case with 52 % of all jobs in Flanders. In 2007 this figure had risen to 54%. Once again – and as one might expect – there are strong differences related to the sector, the nature of the work, age, type of contract, etc.

Equally important, the workability monitor also quantifies the risks which may result in poor job quality: pressure of work, emotional overload, lack of task variation, lack of autonomy, lack of direct support, bad working conditions. In these cases, a number of improvement pathways are suggested. The problems vary from sector to sector. For example, 40% of jobs in the health and welfare sector are 'emotionally taxing', against just 6% in the textile and clothing sector. However, with a score of 36% this latter sector has problems with 'lack of autonomy', compared to just 19% in the health and welfare sector.

It is important to realise that good job quality not only benefits the employee, but also works to the advantage of the company. 14% of staff with two or more 'problem areas' in their job have three or more periods of sickness absence each year, compared to just 4% of employees with a workable job. 22% of staff with two or more problem areas intend to leave the company, compared to just 2% of their colleagues with good quality jobs[87].

Companies and organisations have already launched numerous initiatives in organisational fields. For example, to establish a better balance between home life and work life a wide range of measures have been introduced, which include more part-time working, time credits, flexible working hours, the better spreading of reduced working hours, etc. Employers are prepared to go a long way to meet the reasonable wishes of their employees, because they understand that this can lead to a win-win situation: happier and better motivated staff and a more efficient production process[88].

In short, terms such as 'innovative work organisation' and 'social innovation' cover a multitude of perspectives, which nevertheless form an important part of the global concept of innovative thinking and innovative action.

Paul Berckmans,
STV Innovation & Work

For more information:
www.serv.be/stichting

79 Also see p. 28

80 EWI Review 3 3: 24 – 25 & 35

81 For a brief summary see: Berckmans Paul: 'The broadening of innovation thinking and action, and the role of the Flemish social partners' in De Cock Olivier (editor.): Strategic intelligence in relation to innovation in Flanders, IWT Studies n°57, Brussels, 2007, p. 80-92

82 Bamps Hadewych and Berckmans Paul: Government policy for the stimulation of organisational innovation in companies: lessons from abroad, SERV/STV Innovation & Work, Brussels, 2005, 155 p.
Baisier Leen: Organisational renewal in practice. Examples from Finland, The Netherlands, Ireland, Germany and Belgium, SERV/STV Innovation & Work, Brussels, 2007, 209 p.

83 Inspiring examples of competency policy, SERV, Brussels, 2009, 184 p.

84 A telephone survey conducted among company directors and/or HRmanagers, relating to knowledge about and application of work organisational concepts, management strategies and HR practices. A fourth round of investigations will be made at the end of this year. For the trends: Hellings Sandra, Delagrange Hendrik: New forms of work organisation. Trends 2001-2004-2007. SERV/STV Innovation & Work, Brussels, 2008, 28 p.

85 Delagrange Hendrik, Hellings Sandra: Teamwork in companies and organisations with at least 10 employees. TOA 2001-2010. SERV/STV Innovation & Work, Brussels, 2009, 41 p.

86 Every three years 20,000 working Flemings are questioned, using a written questionaire. The first survey took place in 2003 (60.6% response level), the second in 2007 (53.3% response level). In 2007 the levels of workability were also monitored for self-employed entrepreneurs (6,000 respondents, 40% response level). Both surveys will be repeated this year. The 2020 Pact foresees futher measurement exercises in 2013, 2017 and 2020.

87 Data from 2004

88 Verdonck Gert: Company organisation and the home-work balance. Temporal flexibility: examples of win-win situations. Brussels, SERV/STV Innovation & Work, 2010, 111 p.

inbo
Instituut voor Natuur- en Bosonderzoek

1

INBO breaks a lance for biodiversity

The United Nations has declared 2010 to be the International Year of Biodiversity. The variety of life on earth and the threat posed to many different types of species and ecosystems is widely known. The Research Institute for Nature and Forest (INBO), one of the Flemish Government's scientific institutions, carries out research which can contribute to the preservation, improvement and sustainable use of biodiversity. In this manner the INBO supports the policies which are designed to prevent a further deterioration of the ecological situation.

The INBO was created in 2006 by the amalgamation of the Institute for Nature Preservation and the Institute for Forestry and Wildlife Management. In other words, it is a research institute with a background and a history. But it also has a very clear view of the future. It was precisely with this view of the future in mind that the INBO was thoroughly reorganised two years ago. A new vision for the years ahead was set out in a strategic note which formalised objectives for the period 2009-2015. The strategy is based on high-quality, policy-relevant research.

Four types of research

In order to provide optimal support to Government policy, it is necessary to have a mixture of four different kinds of research. The greatest efforts are made in the field of *applied* research. Starting from the twelve strategic objectives of the INBO (see box), a list is drawn up of the research which is most urgently needed for the development of the best possible policy. This applied research is supplemented by *demand-driven* research, which looks at evolutions in Flanders, Europe and the rest of the world, and offers answers to the resulting knowledge questions which may arise.

In addition, there is also room for *innovative* research, which looks forward to developments further removed from the here and now. This involves more risk and is also more focused on a long-term perspective. It provides the opportunity to explore new avenues of approach, but has a much great chance of being unsuccessful: in other words, it is a delicate balancing exercise. There is also budgetary provision to react quickly to questions which may arise from current developments and problems: the so-called *actual* research. For example, at the end of 2009 the fishing teams of the INBO worked overtime to monitor the evolution of fish stocks in the rivers polluted by the temporary shut-down of the Brussels-North water purification station. Moreover, biodiversity-related research in relation to climate change also falls under this category. Finally, the INBO undertakes a limited amount of *basic* research. This type of research does not necessarily have an immediate application but can be a useful aid for future demand-driven, applied research.

Departments and research groups

The last two years saw many changes at the INBO and the new structure finally became operational at the beginning of 2010. Two scientific departments, which both contain five separate research groups, concentrate on *Management and Sustainable Use of Nature* and *Biodiversity and Natural Environment*.

The Department of Management and Sustainable Use conducts research into populations, species and ecosystems under the influence of different management regimes, in function of the preservation, recovery or development of biodiversity and in function of the sustainable use and administration of nature and woodland by those concerned with their maintenance and/or exploitation. In addition, the department also conducts new research, focused on the relationship between biodiversity and society.

The Department of Biodiversity and Natural Environment targets its research on the evaluation and optimisation of area-specific policy instruments. This research is carried out at different levels: gene, population, species, biotic community and ecosystem.

The scientific departments are underpinned by a Department of Advice and Information, in which the laboratories and the quality control group can provide the necessary support. The drawing up of reports and the issuing of advice on nature matters – another core task of the INBO – is also the responsibility of this department, as is the Information and Data Centre, which is steadily increasing in importance.

Both with regard to the formulation of ideas, the implementation of the research and its translation into policy, the emphasis is placed fairly and squarely on innovation. Developments in scientific research in the field of biodiversity move very quickly. The INBO follows these developments closely, in part through its participation in various European research projects, in which it often plays a leading role. In order to allow the translation of new techniques and concepts into concrete practice, a research institution such as the INBO must be prepared to 'look over the garden wall'. For this reason the INBO often works with researchers and scientists from other disciplines, in particular the social and economic sciences. This is the only way to ensure greater attention for biodiversity-related interests.

The INBO adopts the same open approach in its collaborative dealings with colleagues from the Department of the Environment, Nature and Energy (the Agency for Nature and Forestry, the Flanders Environmental Agency and the Flanders Land Agency) and with research staff from other departments outside the environmental domain, such as Waterways and Canals, NV De Scheepvaart , etc. The INBO also stands close to its end-users, who can count on quick availability/usability. The institute never loses sight of the 'general good' and offers a high degree of continuity in the fields of research, knowledge creation, data management and monitoring. In this way, it is able to make an important contribution to middle and long-term thinking about policy.

But the INBO wants to be much more than a scientific institution which carries out research of great quality and excellence. It is crucial that the research should also be framed with consideration for all the users of nature. This is the only way to ensure that everyone will continue to approach biodiversity in a responsible and sustainable manner after 2010.

Koen Van Muylem,
Research Institute for Nature and Forest (INBO)

12 strategic objectives
The INBO:

1. is an efficient and cost-effective institution
2. coordinates nature and forestry research
3. communicates with regard to its scientific research
4. reports its findings relating to nature and forestry, and evaluates policy
5. manages data and makes it available to others
6. provides well-founded scientific advice
7. monitors and investigates the biodiversity of different species and ecosystems
8. monitors and investigates genetic diversity
9. monitors and investigates the interaction of biotic and abiotic elements.
10. conducts research into ecological management
11. conducts research into the sustainable use/management of nature and woodlands
12. conducts research into the relationship between biodiversity and society

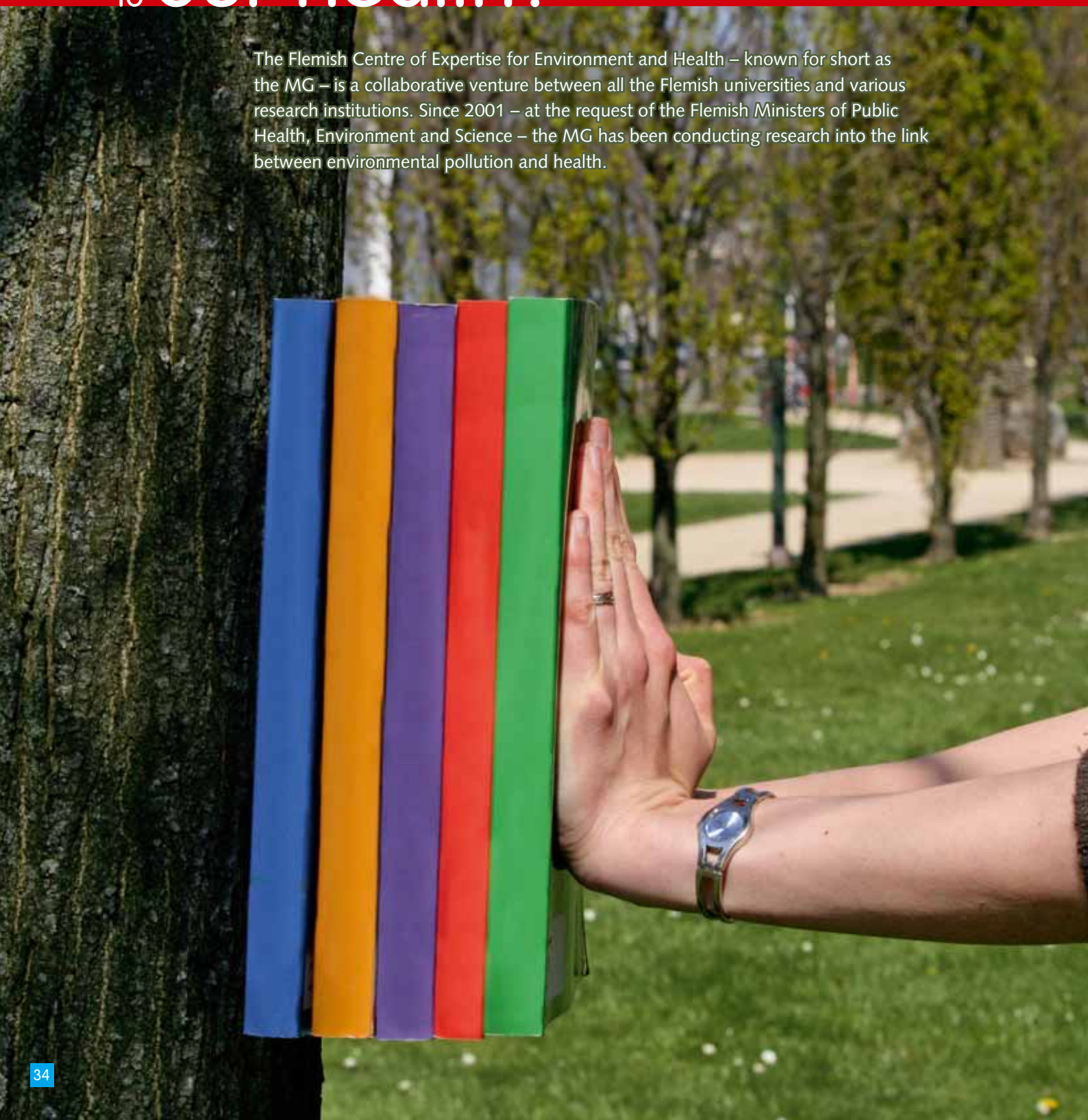
1. Laboratory
The molecular-genetic and in-vitro INBO laboratory conducts research in relation to the genetic diversity of populations and species. It also provides assistance for the enhancement of tree species and is helping in the creation of a gene bank.

2. Calibrating poplars
Calibrating selected poplars in the INBO nursery in Grimminge.

3. Electric fishing
Electric fishing anaesthetises fish by passing a light electric current through the water. This allows them to be caught more easily for counting and measuring purposes, following which they are released back into the water.

What is our environment doing to our health?

The Flemish Centre of Expertise for Environment and Health – known for short as the MG – is a collaborative venture between all the Flemish universities and various research institutions. Since 2001 – at the request of the Flemish Ministers of Public Health, Environment and Science – the MG has been conducting research into the link between environmental pollution and health.



Our health is our most precious commodity. While our way of living and our genes determine to some extent how healthy we are, the influence of our environment also plays a major role. This is certainly true when we consider the diseases of 'modern' civilisation, such as cancer, asthma, infertility and diabetes. Good health needs a good environment in which to flourish. In these circumstances, the demand for large-scale, coordinated research into the impact of the environment on health matters is self-evident.

At the end of 2000, the Flemish Government decided to structurally unify scientific expertise relating to the environment and health in the first Policy Research Centre for Environment and Health. (2001-2006). The objective? To avoid the fragmentation of effort and resources, and to make maximum use of available knowledge in the relevant domains. In other words, the research centre was to function as a knowledge institution: it conducted research, it applied existing knowledge and it integrated available information from elsewhere in the world, all in close consultation with the policy-makers. In view of the fact that the environment and health are fields of social and social-scientific importance which are developing rapidly, the research centre also fulfilled a public function.

The second generation Flemish Centre of Expertise for Environment and Health, which was launched in 2007, can be seen as a logical follow-on to its predecessor. It implements various research projects on the basis of the knowledge and expertise which has been built up during the previous decade.

The bio-monitoring programme: getting to the root of the problem

The largest example of this kind of project is the Flemish human bio-monitoring programme. Between 2001 and 2006 a first bio-monitoring programme was carried out in respect of some 1,200 mothers and babies, 1,600 young people and 1,600 adults. They were all asked to complete a questionnaire about their eating habits, hobbies, general health, life circumstances and personal experience of health risks in relation to environmental pollution. In addition, each participant agreed to give a blood and/or urine sample. The campaign sought to establish whether living in particular areas of Flanders could be related to the presence of particular pollutants in the body, and attempted to analyse the effects of those pollutants on health. The findings suggested that there was such a link. For example, the presence of chlorated hydrocarbons (PCBs, dioxins, HCB and pp-DDE) was found to be higher in rural districts – districts with less than 250 inhabitants per km^2, with less than 5% industry and without registered sources of pollution, such as rubbish dumps or motorways. In contrast, asthma is more prevalent in urban agglomerations.

The study further suggested that exposure to contaminants can be related to certain medical effects. For example, the prevalence of asthma in young people bore a correlation to the levels of cadmium and lead in their blood. Similarly, young people with a higher exposure to PCBs and chlorated pesticides experienced an accelerated development of puberty. Mothers with higher serum values for PCBs, dioxins and hexachlorobenzene reported higher levels of fertility problems. There were higher levels of DNA deterioration in adults and youngsters with a higher exposure to lead, cadmium or polyaromatic hydrocarbons (PAH's).

Because the research centre carries out policy-relevant research with important social consequences, it was important that something was done with these results. In consultation with the Government, the MG developed a phased plan to translate the bio-monitoring results into policy in a structured, participative and transparent manner. This led at the end of 2009 to the compilation of two concrete action plans: the first tackling the problem of chlorated compounds and the second dealing with the increasing incidence of asthma in urban environments.

The new bio-monitoring programme (2007-2011) will seek to evaluate, compare and follow up the values for pollutants even more closely. With this aim in mind, in May 2008 a reference bio-monitoring was started: a human bio-monitoring programme which must offer a clear picture of the environmental health of the average Flemish man, woman and child. Participants from three different age categories across the length and breadth of Flanders were selected to take part: mothers with new-born children, teenagers between the ages of 14 and 15 years, and men and women aged between 20 and 40 years. During this campaign, many more pollutants were measured than during the 2001-2006 bio-monitoring programme: in addition to clearly defined pollutants of long standing – such as heavy metals and POPs (Persistent Organic Pollutants) – other substances were measured which have only made their appearance in the environment during the past few decades (e.g., originating from the new generation of pesticides), and about which little is known.

Once the data relating to the presence of pollutants in the average Fleming have

been collected, this can be compared with data from a number of carefully selected 'hotspots', where there is already concern about environmental pressure and its impact on health. In this context, a human biological monitoring programme for 14 and 15-year-olds was started last year in the Genk-South industrial zone. A similar programme will be launched this year in Menen for the same age group.

Vade Mecum, structured and ad hoc

A policy field with the speed of development and the social sensitivity of environment and health needs a pro-active and demand-driven scientific back-up system. In this respect, the MG information desk is the first point of reference for the Flemish Government. This answers important short-term questions, but also carries out surveys of the professional literature for relevant health and environmental themes. For example, in the past the Flemish Government has asked for an assessment of the impact of the indoor environment on chronic tiredness syndrome (CTS) or the possible effects of mobile phone use on the health of children.

In the first instance, the horizon is proactively screened for new topics of social or policy-related relevance. Secondly, the scientific literature relating to these topics is systematically gathered and analysed, so that scientifically-based policy advice can be formulated. Governments – and policies – can sometimes be surprised by unexpected developments. Even in these circumstances, well-founded scientific advice is offered to the politicians with a minimum of delay. Recent examples include the health effects of sport in an urban environment or the impact of living in the vicinity of a paint-spray installation.

Fine particles – serious consequences?

In Flanders, exposure to air pollution is currently one of the most serious health problems in the eyes of both the public and the Government. In terms of health risk, fine particles in the atmosphere are the most important source of contamination. They encourage and worsen heart and respiratory complaints, cause lung cancer and retard the development of the lungs in young children. Various studies have shown that diabetics are more sensitive to the effect of fine dust particles. For this reason the research centre carried out an investigation with a sample of patients with diabetes, which monitored the effects of fine particles on their lungs, the clotting of their blood and the narrowing of their arteries (arteriosclerosis). If the blood clots too quickly, the patient has more chance of developing heart and circulatory diseases, including stokes and heart attacks. Narrowing of the arteries increases the chance that blood clots may cause a potentially fatal blockage, resulting in cardiac failure or cerebral thrombosis.

The research results show that people who live closer to busy major roads have more carbon particles in their lung cells. This means that carbon loads in the lungs is an indicator for exposure to fine particles. It was also discovered that the diabetic patients with more carbon particles in their lung cells also had higher levels of oxidised low-density lipoprotein (LDL) in their blood. Oxidised LDL plays a key role in the development and progression of arteriosclerosis. This could mean that people who are exposed to higher concentrations of fine particles over a longer period are at greater risk of arterial disease. The results also showed that people with high oxidised LDL levels were more likely to live in the vicinity of a busy road.

Reduced fertility, environment and teeth fillings: find the link!

Various pollutants in our environment have a disruptive effect on the working of human hormones. Our increasing exposure to these pollutants in western society can have an influence on the levels of fertility in both men and women. The Centre of Expertise for Environment and Health is currently conducting two separate studies to investigate this possibility: for groups of both men and women, human bio-monitoring is being carried out to see if participants with fertility problems are more exposed to hormone-disruptive substances than the control group.

In the male case-control study both the patients and the controls were selected on the basis of sperm quality. The 'cases' are 75 men with poor levels of sperm quality, which cannot be attributed to inborn, genetic or other recognisable causes. The 'controls' are 75 men selected on the basis of their normal sperm count and an otherwise normal clinical condition.

In the female case-control study it is more difficult to define with accuracy what the term 'fertility' really means. The length of time that it takes a woman to become pregnant is often used as a measure of fertility. 75 women 'cases' were recruited with a normal menstrual cycle, a normal clinic condition and a partner of proven fertility (normal sperm quality), who had been trying to get pregnant for more than 18 months. The 'controls' are 75 women of normal fertility, with a regular menstrual cycle and a normal clinical condition.

An important group of hormone disrupters are the so-called 'historical' pollutants, such as PCBs, dioxins, chlorated pesticides and heavy metals. However, tests are also being made to measure a newer generation of contaminants: bromated flame retardants, softening agents and perfluoroderivatives. In the professional literature, these substances have all been linked to lower levels of fertility in men, and malfunctional menstruation and breast cancer in women. In an subsidiary aspect of the investigation checks are being made to see if patients with deficient fertility also have more tooth fillings, since this is one possible manner in which exposure to hormonal disrupters, particularly bisphenol A, can be heightened. The measuring of these bio-indicators is an innovative process and has not previously been attempted on patients with fertility problems. The results of the study are expected next year.

Environment, health and social inequality

There is a growing body of international evidence to suggest that the poorer sections of the population, by virtue of their poorer living and working conditions, experience a disproportionate share of exposure to and impact from environmental factors, such as lead or PCBs. This type of environmentally-related exposure is an important area for further research: more knowledge is required about the exposure and resultant health risks of socially vulnerable groups, and also about the social mechanisms which play a role in the relationship between environment and health. Human bio-monitoring data can provide useful information to supplement the material contained in the existing scientific literature. For example, a preliminary analysis made by the first MG research centre suggested the people with a lower educational level sometimes had higher but sometimes also lower concentrations of contaminants in their blood. In other words, the Flemish results do not conclusively prove or disprove the conclusions of the literature relating to the social inequality of environmental pollution, but rather serve to illustrate the complexity of the mechanisms between external and internal exposure.

Apart from the instrumental value of social-scientific knowledge, the role which the social sciences (can) play is a subject worthy of research in its own right. The daily experiences and findings of the Expertise Centre are scientifically valorised to the greatest possible extent. Only in this way will it be possible to further develop policy sciences and action research in a manner similar to other leading countries in the field. The continued expansion of scientific and research capacity is an important objective of the policy-research centre system.

Karen Goeyens (VUB), Bert Morrens (UA), Elly Den Hond (VITO), Els Van de Mieroop (PIH), Lotte Jacobs (K.U.Leuven), Tim Nawrot (K.U.Leuven), Ben Nemery (K.U.Leuven), Nik Van Larebeke (UGent), Ilse Loots (UA), Greet Schoeters (VITO), Vera Nelen (PIH), Willy Baeyens (VUB)

Promotor-coördinator: Prof. dr. Willy Baeyens
Consortium members:
- Free University of Brussels (VUB)
- University of Ghent (UGhent)
- Catholic University of Leuven (KUL)
- University of Antwerp (UA)
- University of Hasselt (UHasselt)
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26 oktober 2010: study day examining the results of various facets of recent research projects
Competent ministers:
- Flemish minister of Environment, Nature and Culture
- Flemish minister of Welfare, Public Health and the Family

Budget: 623.571,43 euros

The European presidency: an opportunity for Flanders

Following Spain, on 1 July 2010 Belgium will assume for a period of six months the presidency of the Council of the European Union, the institution in which the ministers of the different EU member states come together to make decisions. The Belgian presidency is not simply a matter for the federal government and its Ministry of Foreign Affairs, but also for the regions and communities[89].

For regional competencies, the different federal regions of Belgium agree a rotational system which sets out which region will represent which policy domain and for which period of time. Under the provisions of this system, during the Belgian EU presidency Flemish ministers will be responsible for presiding over the meetings for fisheries, the environment, education, youth and sport. Moreover, Flanders – together with Wallonia and the federal government – will continue to play an institutional role in respect of agriculture. Flanders also has the option to put forward additional initiatives in relation to science and innovation. The obligations of the EU presidency are therefore not simply confined to presiding over the formal ministerial councils and the official work groups of experts. It is expected that the presidents will put forward their own initiatives. On behalf of the Belgian EU presidency, the Flemish Government will organise numerous meetings at ministerial and other official levels, particular for the policy fields in which Flanders will be acting as the Belgian president.

The activities during the EU presidency can give the Flemish Government a new impulse for a more pro-active approach in European issues and for a more international reflex within its own policy context. Since the previous Belgian presidency in 2001 the number of policy staff who focus on the European policy agenda has grown considerably. In addition, the European presidency offers communications opportunities to transmit the Belgian and Flemish message to the public both at home and abroad.

Greater involvement

During the EU presidency Flanders will launch a number of initiatives related to themes such as music and culinary activities. The purpose? To make the citizens of Flanders better aware of the role of Europe in their region and the role of their region in Europe. This objective will be achieved not only through the offering of clear and correct information, but also by attempting to involve the citizens of Europe and of Flanders in the European project in an interactive and sustainable manner. In this respect, interaction is always more efficient than information.

To increase the involvement and commitment of the people, the planned communications initiatives during the presidency must meet a number of basic requirements. The interests and concerns of the citizen must stand central and there must be no question of a 'top-down' approach. To be certain of creating a lasting and sustainable effect, the citizen must know precisely what will be done with (or as a result of) their increased involvement.

Finally, every effort will be made to collaborate with internal and external partners. It is this collaboration which will make possible the sustainable interaction of the public. Existing organisations will work around themes which allow information about a complex subject such as the European Union to be translated and transmitted in an accessible manner. Moreover, these organisations each have their own highly committed group of supporters, who will publicise and support the organised events through newsletters and websites. And when events are organised by semi or non-official organisations of this kind, their level of credibility – and correspondingly the power of their message – is increased.

Another important element within the communications strategy is the collaboration with the media. A traditional advertising campaign is not interactive, but consists largely of 'top-down', one-way messages. This is not what is required. In this respect, the EU presidency can offer a new framework for existing actions and programmes. The media know perfectly which techniques work with the public, and which do not. Moreover, they have experience with social media and they possess an extensive range of contacts on networks sites.

Flanders in the spotlight

During the presidency, the eyes of Europe – if not the world – will be focused on Belgium, Flanders and the other regions. This offers a unique opportunity to strengthen the international profile of Flanders and to show to the rest of the European Union that the Flemish people are open, honest and committed to the European ideal. The European policy-makers who will be involved with the Belgian presidency will have the chance through a wide range of formal and informal events to become acquainted with Flemish policy, Flemish society and Flemish culture. But the communication process will be taken even further: during the presidency foreign journalists, a vast array of European officials and members of other ex-pat groups will be able to see how Europe lives in Flanders. Efforts will be made to involve them as much as possible in the organised events and public activities. There will also be a number of targeted activities aimed at promoting interaction between key foreign figures and leading members of the Flemish community.

These efforts must bear fruit and must be sustainable. Our investment in communication and image forming must have a lasting effect long after the presidency has passed. These actions must be more than empty talk and meaningless platitudes, but must form the basis for a long-term positive attitude and a more vibrant interaction with European institutions, our diplomatic and cultural partners, foreign media, international investors and the world's tourists.

Leontien Demeyere,
General Government Policy Division

89 EWI Review 3 3: 27 – 28

Agenda at the ready!

It might officially be called 'the Belgian presidency of the Council of the European Union', but thanks to the rotational system of responsibilities operating in Belgium[90] Flanders will also have a lot to say about the matter. Not only will Flanders do all it can to pursue the right policy priorities, but it will also seek to put these priorities in the spotlight through its joint organisation of and support for a wide range of top conferences. EWI also has a lot in store for its European colleagues from 1 July onwards…

During the presidency, Flanders will be seeking to concentrate attention on five union-wide priorities. In the first place, it will focus on the revised Lisbon Strategy for the post 2010 period[91] and on the necessary tools to create a social, green and competitive Europe. Secondly, 2010 is the European Year for Combating Poverty and Social Exclusion. It goes without saying that social inclusion and the elimination of poverty will be included as Flemish priorities in the presidential programme. Climate, energy and environment are the third umbrella priority. Finally, Flanders wishes to underline the essential role of the regions and to create a policy that brings the Union closer to the people.

EWI spotlights

In addition to these five main lines of approach, each policy domain will also be pushing forward its own priorities, which will be reflected in the organisation of or partnership in various conferences. EWI has a very well-filled agenda for the autumn of 2010.

Sustainable society

Sustainable development and the energy question are both high on the presidential agenda. EWI will translate these priorities in conferences dealing with research, innovation and sustainable economy.

For example, Flanders will place a firm emphasis on the follow-up of the European Strategic Energy Technology Plan (SET Plan), which seeks to achieve the accelerated creation and implementation of a low-carbon energy technology for Europe. The EWI is responsible for organising the **SET Plan 2010 Conference**, where the current developments of the SET Plan will be analysed and the dialogue with the United States, Japan and the rest of the world relating to these developments will be given more concrete shape and substance. In this way, EWI, together with the European Commission, will arrive at a global approach for the role of energy technology in a low-carbon economy.

Sustainability and innovation are also the keywords for the **Knowledge Based Bio-Economy Towards 2020 Conference**. A central place will be given to the role of innovative applications in the bio-economy as a means of meeting the great social challenges of the future, such as climate change, a secure food supply, the ageing of the population and the growing threat to bio-diversity. The European Knowledge Based Bio-Economy (KBBE) was launched by the European Commission in 2005 with the First KBBE conference, and forms an integral part of the Seventh Framework Programme[92]. KBBE Towards 2020 will evaluate the implementation of the KBBE since 2005 and will look forward into the future, thereby seeking to deliver an important contribution to a new European vision and action plan. A visit to successful Flemish KBBE clusters prior to the conference will complete the programme.

Another policy matter which falls within the scope of the sustainability debate is the scientific foundation for the European Strategic Plan for Marine and Maritime Research. At the **EurOcean 2010 Conference**, organised by EWI and the Flanders Marine Institute (VLIZ), the great challenges in marine and maritime research will be central. To increase the visibility of the conference and to create better awareness at European policy level, the conference will be preceded by a 'side-event' in the European parliament. The purpose of the actual conference is to make a useful contribution to the further development of current policy. In this respect, the

Ostend conference will be closed with the issuing of an *Ostend Declaration*, which will contain concrete action points for the policy-makers.

There can be no sustainable development without a sustainable economy. EWI, the Services for the General Government Policy Department (DAR) and the Environment, Nature and Energy Department (LNE) will organise, in collaboration with the Committee for the Regions, a conference on the theme of prosperity, well-being and economic growth. The event will explore the role of the European regions in the international debate relating to the formulation of a policy and indicators for sustainable development.

European research area

As far as the development of the European Research Area is concerned, during the presidency Flanders wishes to place the emphasis on the simplification and (where possible) limitation of bureaucracy. Flanders also wants to investigate which cross-border collaborations are most appropriate within the framework of Joint Programming Initiatives. Finally, Flanders will commit itself to the implementation of the European partnership in respect of career development and mobility for researchers. In this respect, the EWI is contributing towards the **European Partnership for Career & Mobility of Researchers Conference**, organised by the Federal Department for Science Policy. In addition, the EWI is also involved - via the Hercules Foundation[93] – in the **ENERI 2010 Energy Research Infrastructures Conference**.

Attention for SMEs

During the Belgian presidency, the implementation of the Small Business Act (SBA), a policy measure in favour of small and medium-sized companies approved in 2008, will be evaluated. Flanders, which through Flanders Enterprise and the IWT is an active participant in the Enterprise Europe Network[94], will also act as host during the presidency to the **EEN's Annual Conference**. An important focus this year will be the position of European SMEs in 2020. In addition, the EWI is helping to put together the programme for the **SMEs and Technological Innovation Conference**, where the needs of the SMEs in terms of research and innovation will be discussed.

Innovation is crucial

Flanders looks forward to the follow-up to the Inclusive Innovation Strategy of 2006 and to the discussion of the EU's new Innovation Action Plan, which may be given shape before or during the Belgian presidency. Flanders will seek attention for innovation initiatives which strengthen the competitiveness of European companies. In this respect, the Flemish Government underlines its view that innovation must be financed over the full length of the innovation pathway.

Innovative industrial policy

Eco-innovation must be a central thread in Europe's industrial policy. In this context, Flanders wishes during the presidency to devote more attention to the further implementation of the Green Cars Initiative and the European strategy for the development of electric cars.

EWI is closely involved in the organisation of the **European Industrial Technologies 2010 Conference**. The focus of this conference will be placed on 'nano-technologies, nano-sciences, materials and new production technologies (NMP)'.

This will be a primeur: the first ever NMP event on such a grand scale. It is hoped to attract 1,500 participants. The key word? Integration, both between the N, the M and the P's, and also between research and industry.

EU 2020 strategy

The filling in of the EU 2020 strategy has also been marked as an important common agenda point for the presidency. This strategy is the successor to the well-known Lisbon Strategy, whose purpose was to make Europe the most progressive knowledge economy by the year 2010. From a Flemish perspective, the creation of sustainable growth and employment will be pushed forward as the key priorities. With regard to the further expansion of the European knowledge economy, EWI will participate in the organisation of the annual **Security Research Conference** and the biannual **ICT Conference**[95]. By virtue of its long tradition, this latter event has grown to become the largest ICT event in Europe. The most recent trends in the ICT domain will be discussed with the 4,500 delegates. In addition to the conference itself, a 5,000 m^2 exhibition will give an overview of the progress of digital innovation in Europe. In the Belgian pavilion the visitors can make the acquaintance of the most important local actors in the ICT field.

Flanders is therefore aiming high in the fields of research, innovation and economy through the organisation of various large-scale conferences and by contributing financially and/or actively to several other events within its policy domain (see calendar). Detailed information about all the conferences in which EWI is involved can be found on the pages relating to the Belgian EU presidency on the EWI website.

Monika Sormann, Eva Van Buggenhout, Karolien Waegeman, Willem De Moor, Kim Hoedt
EWI project team, EU presidency

List of events you'll find on www.ewi-vlaanderen.be/eupresidency

September 2010
- European Industrial Technologies 2010 Conference, 7-9 September, Brussels, www.industrial-technologies2010.eu
- KBBE towards 2020, 13-14 September, Brussels, www.kbbe2010.be
- Research, Development and Innovation for a more secure Europe 2010 Conference, 22-24 September, Ostend
- ICT 2010 Conference, 27-29 September, Brussels

October 2010
- EurOcean 2010 Conference, 12-13 October, Ostend, www.eurocean2010.eu
- EEN's Annual Conference, 13-15 October, Antwerp
- ITEA - ARTEMIS co-summit 2010 26-27 October, Ghent
- Beyond GDP, 4-5 October, Brussels

November 2010
- European Partnership for Career & Mobility of Researchers, 8-10 November, Brussels
- Strategic Energy Technology Plan 2010 Conference, 15-16 November, Brussels, www.setplanconference2010.be
- Research and Innovation in SME's, 17-18 November, Liège
- SME's and Technological Innovation Conference, 17-18 November, Liège
- Positive Visions for Biodiversity, 16-19 November, Brussels
- ENERI 2010: Energy Research Infrastructures, 29-30 November, Brussels

December 2010
- RESCUE foresight initiative – Consensus Conference (ESF-COST "Frontier of Science" 7-9 December, Antwerp
- European Science Foundation Forward Look, December, Antwerp

90 EWI Review 3 3: 27 – 28
91 EWI Review 3 3: 24 – 25 & 35
92 EWI Review 2 1: 30 – 33
93 EWI Review 1 2: 30 – 31 & 3 1: 24 – 27
94 The EEN is the instrument most widely used by the DG Industry and Enterprise for the support of SMEs.
95 http://ec.europa.eu/information_society/events/ict/2010/index_nl.htm

A code of behaviour for bankers

In November 2009 – in the building of the National Bank in Brussels – there was a roundtable meeting between 'Banks and Business'. This conference was held within the framework of the funding problems being experienced by some companies as a result of the financial crisis, which has also become a crisis in the 'real' economy. The intention was to examine the possible causes of the credit crunch and to discuss the points of view of the respective parties: banks, business and the Government. The relevant policy instrumentarium[96] was also looked at in detail.

One of the results was a statement in which all the parties concerned agreed to undertakings that would help to ensure the smooth and responsible provision of credit in Flanders. In order to reinforce some of these undertakings – primarily at the instigation of the Minister-President of Flanders, together with Febelfin[97], Voka and Unizo – a number of them were formalised in a declaration of intent. The signatories agreed to abide by these concrete principles in their consultations/negotiations with partners from other regions and to use them as a basis for amending "the code of behaviour between the banks and the SMEs within the context of credit provision".

This commitment relates to a number of different themes. The banks wish to contribute towards a broad but responsible system of *credit provision*, based on the realisation that they act as the motor of the economy. The banks and the employers' organisations have both promised that they are open to dialogue and that they will make constructive suggestions to help the Government deal with possible (future) bottlenecks in the credit system. Febelfin will develop new methods to collect and process figures, in order to allow a better monitoring of the credit markets.

The banks undertake to provide clear guidelines regarding the required elements in each *credit file*. They promise to deal with each credit application within a reasonable period of time and in a transparent manner. The employers' organisations will promote the better and more complete preparation of credit requests amongst their members.

The banks will give clear reasons to justify their decisions in relation to credit applications, so that the applicant will be given an *insight* into the factors that influenced the final decision. The employers' organisations will *inform* their members about the changed macro-economic context in relation to credit provision. They will also encourage entrepreneurs to discuss their problems with their banks in good time.

The banks undertake to work with the credit broker and to inform credit applicants about the most relevant *government instruments*. They will help their clients to complete their applications for support measures. Unizo and Voka undertake to actively promote the services of the credit broker with their members and to better foresee the proper circulation of information relating to government measures.

If, at a later stage, this code of behaviour is confirmed, updated and broadened, it should in future be possible to deal with credit problems quickly and efficiently. This will allow Flemish entrepreneurs to continue to enjoy the benefits of a secure, broad and responsible credit provision system.

Jan van Nispen,
Enterprise and Innovation Division

96 See e.g. EWI Review 3 1: 6 – 7

97 Febelfin is the umbrella federation for the Belgian financial sector www.febelfin.be

Flanders at the 2010 World Exhibition in Shanghai

'Better City, Better Life' is the theme of the World-Expo 2010. Whoever has the chance to visit Shanghai this year[98], should certainly drop in at the Belgian pavilion. And it will soon be apparent that Flanders has set its mark on the Belgian contribution.

> *If you think in terms of a year, plant a seed;*
> *if in terms of ten years, plant trees;*
> *if in terms of 100 years, teach the people.*
>
> *Confucius (551-479 BC)*

The Belgian pavilion also doubles as the European pavilion. Since Belgium is acting as European president from July to December 2010, the European Union has decided to share the Belgian facility for the duration of World Exhibition.

The contract for the design, implementation and removal of the pavilion was awarded to a consortium led by the Flemish company Interbuild. The architect was Christine Conix from Antwerp.

The building was conceived to appeal to a number of different target groups. It is intended to be a platform, where Chinese and other foreign visitors can meet. The pavilion consists of an exhibition area, a shop and a restaurant for the general public, and a business centre and conference area for the promotion of trading relations. In these areas events are organised by the federal, regional, provincial and local authorities, and by other organisations, institutions and companies. While the conference area is primarily intended for seminars by official bodies and the business community, the exhibition area is targeted at the ordinary general public, with the expectation of attracting 70,000 visitors per day.

Sampling the delights of Belgium

Amongst other highlights, the pavilion contains a fabulous exhibition of diamond jewellery, but it is also possible to sample the delicious chocolate for which Belgium is so famous. The 'Chocolate Corner' has non-stop demonstrations about how these 'pralines' are made. All the major Flemish chocolate manufacturers are represented in this project, and other KEY elements of our 'Burgundian' life style – beer, waffles and chips – are all on show.

The Belgian pavilion also plays on the theme of 'Better City, Better Life', by visitors a glimpse of life in Antarctica through an exhibition devoted to the Princess Elisabeth Research Station, where the International Polar Foundation is currently active.

'Green Shoots' – on the road to a greener economy

Together with the other Belgian regions, and in keeping with the Expo's central theme, Flanders chose to set the focus on sustainable development. 'Better City, Better Life' reflects a worldwide need for a greener approach to our (metropolitan) society. Biodiversity, shortage of water and climate change are all central to this need. The three Belgian regions decided to promote this theme through a Flemish initiative. Under the title 'Green Shoots', the visitors can make a symbolic and educational journey through a breath-taking display of environmental technology, which can help to create a greener urban environment.

The journey begins in a virtual tunnel, in which the position of Belgium is explained. This is followed by a trip through 'Green Shoots', which shows how a little seed can sometimes grow into a mighty tree, and what this could mean for Chinese cities.

This journey follows a fixed pathway. On one side of the pathway images of a natural environment are shown, whilst on the other side an urban environment is visualised. Along the route there are numerous references to the possibilities for improvement offered by better urban planning and environmental technology. This includes a comprehensive survey of the knowledge and skills of Belgian researchers and companies in the fields of clean air, climate and water purification, as well as an easy-to-understand analysis of the effect which environment can have on people and their health. In this way, the spotlight is firmly focused on the 'Green Shoots' and their potential benefits. After leaving the pavilion, the visitors find themselves in a luscious green park, which creates a sense of having completed the journey.

The visitors 'experience' the whole story and understand that they are a part of it, that their future well-being and existence somehow depend on it, that it is a pathway that will eventually lead to a 'Better Life'. The symbolic and educational aspects of the project are both equally important, and this type of dual approach is much appreciated in China, where the project has so far been very well received. It is, after all, a universal theme, which appeals to young and old alike.

The ecological footprint of the Pavilion

The exhibition is not exclusively educational and symbolic. It will, for example, effectively result in the creation of a wood once the Expo is over. In this way visitors can know that they are making their own practical contribution towards the development of a greener environment. As compensation for the CO_2 emissions of the pavilion, a new wood will be planted. This initiative fits neatly with an international campaign which seeks to focus attention on the relationship between afforestation and biodiversity[99], water shortages and climate change. The Flemish Government's Department of Environment, Nature and Energy, working in collaboration with a Chinese NGO called Shanghai Roots & Shoots – a local spin-off of the Jane Goodall Foundation – will finance and co-ordinate this educational-environmental project, which will also involve local Chinese schools.

Jan Van Den Einde,
Flanders Investment and Trade

Frank Vereecken,
Strategy and Coordination Division

Flanders Investment & Trade at the 2010 World Exhibition

Flanders Investment & Trade Shanghai, which coordinates the Flemish presence at the 2010 World Exhibition, will have a permanent office at the Belgian pavilion for a six month period. It will provide support for Flemish government departments and for Flemish companies and other organisations with the setting up of their activities in the pavilion. In other words, Flanders will be continuously represented on site by Flemish Government personnel for the duration of the Exhibition.

On 24 May 2010 a Flemish Day will be organised. The following week – from 24 to 31 May 2010 – will also be devoted to Flanders. During this week, the Flemish Government, the Flemish business world and the Flemish knowledge institutions will organise an impressive environment and energy event in the conference area, where major Flemish actors from the sector will hold a series of seminars on related issues and topics.

From 18 to 27 May 2010 Flanders Investment & Trade is also organising a multi-sectoral trade mission to Shanghai. This mission will first visit the cities of Suzhou, Nanjing and Hangzhou, before ending in Shanghai.

This combination of a Flemish trade mission, a Flemish Day and a subsequent Flemish environment and energy week will do much to heighten the visibility of Flanders at the 2010 World Exhibition.

For more information, please contact the FIT WT2010 team:
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98 The World Exhibition in Shanghai (People's Republic of China) runs from 1 May to 31 October 2010. More information is available on http://en.expo2010.cn or www.shanghaiexpo2010.be.

99 2010 has been declared as the international year of biodiversity.

Oriental patience

Oriental patience

Exploring the Chinese market?
Sunday 14:35

For those of you not fully in the picture: I am in the process of developing 'Skin-roofing', my own brand new product. Since China is the cradle of the world geotextile industry, it seems like the perfect market for me. Has anyone got friends or contacts in the Far East that I can use?

First days in China
Monday 16:08

Could have gone more smoothly. When I arrived in Tianjin[100] I discovered that my Chinese contact person had 'done a runner'. I was on my own, apart from the translator, who thankfully did turn up. Fortunately, he had a number of contacts in local political circles, and so he put me in touch with a lady from Paris (it's a long story), who in turn introduced me to a number of people who are active in the field of green policy in China.

Basics and networks
Tuesday 08:36

It's a good thing that networks exist in China. They were very useful for finding relevant advice which helped me further. My visit to the China representative of Flanders Investment & Trade, Siegfried Verheijke, was also a bull's-eye. He is toying with the idea of setting up a Flemish-Chinese eco-cluster. I signed up on the spot, as the first member, along with Joosten Green Consult. Since then, the VITO, UGent and the Chinese Kingsphere have also been recruited.

Action please!
Sunday 11:01

Hmm, the eco-cluster is taking a long while to get off the ground. Time for some action please, lads and lasses! We urgently need to work together more closely: simply exchanging information is not going to get us anywhere. Someone at Aquafin clearly thinks the same. I discuss with him the idea for a concrete collaboration around eco-innovation, involving companies and universities from both Flanders and China. The World Exhibition in Shanghai is coming up in the near future: surely the ideal opportunity to create interest in such a venture?

Getting somewhere – at last
Saturday 21:59

We are finally making some progress. Fifteen or so companies have agreed to come on board. We will 'do something' during the World Exhibition and can count on the support of the people at the Belgian pavilion. The Bencham[101] have also lent a helping hand. So far, so good. Thanks to a good concept and the invaluable assistance of Flanders Investment & Trade, our eco-cluster partners will be able to reach a large public with a limited public. Watch this space for further news!

Profile information

First and family name:
Bert Dautzenberg

Training:
garden and landscape architect, specialising in water management

Current activity:
green roofing, infiltration techniques

Most important product:
skin-roofing

Other:
three years active in China and a member of the Flemish-Chinese eco-cluster (FCEC)

Scoop!
Tuesday 14:18

As we promised, a scoop! Here is the first news about our action at the World Exhibition. We have chosen for a combination of a web-site, a central stand in the Belgian pavilion and a model, which makes our eco-story readily accessible and tangible to a broad public

The model – no bigger than a meter by sixty centimetres – reproduces the pavilion in eight separate blocks. Each block has a push button. The buttons were coloured by children in relation to the part of the pavilion which they represent: green for leaves, blue for water, red for energy, etc. By pressing one of the buttons, visitors get a picture of where different things are located in the pavilion and how they relate to each other. Companies which are linked to the specific themes chosen are also briefly put in the spotlight.

Update on the eco-cluster – and a new project!
Saturday 12:25

The eco-cluster is now moving at cruise speed. We will organise a number of themed seminars in conjunction with local research centres; for example, around the topic of water management with the agricultural and horticultural school at the University of Tianjin. In future, we want to repeat this kind of thing two or three times each year.

In the meantime, our company is also working on a new project, for which our university partners have been able to obtain a research grant. Working with local researchers helps to open a lot of doors. They are tremendously keen to learn, want to know everything and cling onto you like a limpet to a rock. You have to keep showing an active involvement at local level; otherwise there is a risk that they will simply copy your idea. The Chinese consultancy bureaus that work to secure copyrights and prevent plagiarism are not a luxury: they are an absolute necessity!

China: a different mentality
Thursday 23:05

It is a good thing that we are working thematically. The Chinese seem particularly interested in SMEs that can offer something new. And if they believe in something, they go for it 100%. Here the electric car – still a pipe-dream in Europe – is already rolling off the production line. China is a stimulating environment for entrepreneurs. You soon know exactly where you stand: you get a straightforward 'yes' or 'no'.

See you soon
Wednesday 0:49

You still need to bite your tongue and grind your teeth quite often, but Flanders Investment & Trade really does help. And networking: I can't emphasise it enough, certainly with the universities. Building up a relationship of trust and setting up a second home base: that's the name of the game. It is not simply a question of launching a product on the market… And now it's time for me to get back to business. See you here soon?

100 Tianjin, located between Beijing and Shanghai at the mouth of the Yellow River, is a city of some 11 million souls, which makes it the sixth largest city in China.

101 Benelux Chamber of Commerce in China.

Towards a new industrial policy for Flanders

On February 5, 2010 more than 170 Flemish industrialists, politicians, union leaders, representatives of sectoral federations, strategic advisory councils, policy departments and the social partners all came together in the imposing setting of the conference chamber at the Palace of the Academies in Brussels. Their purpose? To fire the starting shot for the States General for Industry: a mobilisation instrument which hopes to ensure the future of industry in Flanders.

Employment in the industrial sector has taken some hard knocks since the start of the current economic crisis. The countless bankruptcies, closures and restructurings – with the planned closure of the Opel factory in Antwerp as the sorry low-point – has made public opinion in Flanders all too well aware of the precarious position which industry now occupies in our economic structure.

For every 10 people working in industry in 1980, there are only six people working in the same sector today. Industry's share of total employment has fallen from 28% in 1980 to just 15% in 2009. The prognosis is for a further fall to 13% by 2014.

In a modern economy, based on knowledge and technology, industry nevertheless continues to be a crucial driver of economic growth and the major source of exports. Flanders possesses a diversified economic fabric which offers numerous innovative possibilities at the crossroads between the different sectors. However the rapid decline of some of these sectors during recent years is threatening the growth potential of the economy as a whole.

What are the reasons for this decline?

The general causes of the decline in industry's contribution to the economy are well known. On the one hand, there is the tertialisation of the economy. The relative weight of industry is decreasing, as with

agriculture before it, and both are being replaced by a corresponding growth in services. This is happening in every country and requires a structural adjustment in the direction of a service economy.

On the other hand, there has also been a geographical redistribution of industrial production, under the influence of globalisation and the relocation of labour intensive production activities to low-wage countries. The rise of the East European and Asian economies is the exponential result of this process. The centre of gravity of the world economy has shifted.

But there is also a specific problem of competitiveness within the Flemish economy, even in terms of the European market, which continues to be our most important export market. Our traditional position as a manufacturer of semi-manufactured products – i.e., as a supplier to the international value chains – is now under threat. It has only been possible to maintain this position in recent decades by virtue of high levels of productivity in industry, but this is becoming more and more difficult in view of the current downward trends in productivity growth.

The structural innovation deficit

The growth of labour productivity in Belgium has been falling steadily since the 1970s, as in most other European countries, but in contrast to the United States (see Figure 5). For many years, the higher level of productivity growth in Belgium made it possible to keep our export products competitive, even in the face of pay parity or pay increases. However, this advantage has fallen away in recent years, leading to the current crisis in the Belgian model.

What was the origin of our competitiveness and – more importantly – its decline? The growth of labour productivity is influenced by three important factors: the quality of labour (level of education), the level of capital intensity (automation) and the trends in multifactor productivity (the efficiency with which the productivity factors are used, or 'innovation' in the broadest sense of the word). From a study by the Federal Plan Bureau[102] it is clear that the major contributor to the growth of labour productivity in Belgium is the increase in capital intensity i.e., automation. In most other European lands, innovation (multifactor productivity) is a more important factor. In the United States, the impact of this latter factor is huge, largely as a result of their high-performance ICT.

The structural cause of the loss of competitiveness in Belgian/Flemish industry is therefore the relative lack of innovation as a component in the industrial growth model. Through the purchase of new technology – in the form of material investments, also in ICT – the Belgian/Flemish economy is quick to close the gap with the international 'technology frontier'. However, this type of automation soon results in falling marginal returns, while other types of innovation create insufficient new growth possibilities.

Figure 5: Average annual growth (in %) of labour productivity in processing industry

	EU	Belgium	United States
1970-1980	3.9	7.7	2.5
1980-1990	3.4	5.2	3.2
1990-2000	2.8	3.3	4.9
2000-2005	2.3	2.3	5.8

Source: Federal Plan Bureau, Working Paper 17-08 p. 23

The structural composition of the Flemish economy

The fall in labour productivity is a trend which points to the maturity and exhaustion of the industrial growth model which was so successful after the Second World War, and more specifically in Flanders after 1960. The car and chemical industries were the most important exponents of this model. The ICT revolution during the 1980s and 1990s resulted in an industrial transformation which gave a positive impulse to productivity in the US and in many other countries, but not in Flanders, at least not to the same extent. The reason? In the previous decades the Flemish economy had begun to specialise in sectors which were less susceptible to the impact of the ICT revolution, such as the chemical, food and automobile sectors.

The structural problem in Flemish industry is therefore the fact that large parts of the sector are 'locked in' to a growth model which has had its day: scale intensive, but also material and energy intensive process industries, which were ideal for the production of mass consumption goods during the years of expansion in the 1960s.

The transformation of industry in Flanders is not taking place in isolation from the transformation of the industrial model in the world as a whole. Nevertheless, the position of Flanders is more vulnerable because of the greater inertia of its economic model. Investments in the traditional growth model were maintained up to the start of the current economic crisis: gross investment as a percentage of GDP showed consistently high levels. However, investment in innovation has stagnated or even fallen back: the R&D investments of companies as a percentage of GDP have decreased. This means that the economy is insufficiently prepared to meet the changes and challenges of the future. There are too few new sectors and activities with real potential to generate sufficient growth and employment. There are certainly new growth companies (for example, in bio-technology and the creative industries), but they are too few and are unable to create strong clusters.

The accelerated decline of industrial activity in Flanders therefore has a deeper, structural cause. The Flemish economy is no longer specialised in industrial activities which are sufficiently innovative to generate a high added value in export. Flanders has also become less attractive as a possible industrial location for foreign investors. In short, the Flemish economy needs to make a structural adjustment to the changing world situation, by developing new strengths or by reviving existing ones. This means looking closely at the structural composition of our economy, such as the nature of its specialisations and the organisation of its value chains. In particular, a rapid transformation of industry is necessary to restore Flemish competitiveness.

Towards a new industrial policy

The challenge for the coming months and years is to see whether in the medium-term Flanders can be a top region in a rapidly changing European and global economic context. What positions will the Flemish technological and economic actors be able to occupy within the resultant new value chains? This requires more than just a flanking policy. In the new integrated industrial policy for the rapid transformation of the economy it will be necessary to make hard choices for particular technological-economic priorities. Centres of gravity must be created in the shape of strong clusters. A strategic direction must be sought. The choice for a 'whiter' and 'greener' economy

will stimulate investment in technological breakthroughs for the solution of the complex social challenges of the 21st century. This will require a strong partnership between all the different actors in the value chain. In the States General for Industry the leading economic actors and their sectoral federations now have the opportunity – and the responsibility – to work out a comprehensive action plan for the future.

The role of the States General: a modernising approach

The States General for Industry is an instrument for the accelerated transformation of industry, in order to restore its competitiveness, thereby stimulating growth and employment. It is a common platform for a combined employment, industry and innovation policy, because only an integrated policy of this kind is capable of initiating, guiding and supporting the necessary process of change.

The agenda focuses on the 'transformation of the economy', with a new approach based on value chains, cluster policies, partnerships and, above all, greater innovation. The key element in this approach is the value chains: they provide the required degree of cohesion and coherence between the different actors, without which it will be impossible to create economic added value. The answer to the crisis in competitiveness and employment is to be found in the speeding up of this necessary transformation towards new growth markets. With this aim in mind, the different sectors must be encouraged to work in a more cross-sectoral manner.

The timing is tight. By the summer of this year the four sectoral federations with a trigger function will need to produce concrete plans for the future of Flemish industry in terms of new or renewed value chains. These project proposals will serve as a basis for the compilation of the Flemish Government's investment plan, so that proposals can be brought before the Flemish Parliament this year.

The first interventions of the representatives of the sectoral federations have already resulted in some interesting suggestions, such as the anchoring of the 'green car' or the development of a sustainable chemical industry in Flanders. But even the more traditional sectors, such as textiles, timber and food, are mobilising their innovation potential.

A matter of choice

The Minister for Innovation emphasised that a well-founded and well-targeted innovation policy is an absolute necessity: based on our economy's remaining strengths, we need to choose the areas where we can commit our resources with every chance of success. In difficult budgetary times, this is more essential than ever. This means that our capacity for formulating and implementing the right strategic decisions must be strengthened.

- Within the VRWI[103] a number of 'innovation steering committees' have recently been initiated with the mandate to develop a medium-term innovation strategy for the key domains such as the automotive industry, sustainable chemicals and social innovation. These groups will be comprised of recognised innovation leaders and experts from across the broad range of the social spectrum.
- EWI is preparing a new model for a renewing sectoral consultation which leans heavily on the value chain approach. During round-table sessions, the emphasis will be placed on the strengthening of clusters of companies and research institutions in progressive fields of endeavour. These round-table talks between the sectors and the Government will give further concrete form to the strategic action plan of the States General for Industry, in part by assisting the Government to better coordinate policy for the support of the transformation pathway.

Broad support

The Minister-President repeated in his closing address the need for speed and action. There must be a minimum of delay in initiating the transformation trajectory that will help Flanders to achieve a position as a top region within the European economic structure. The modernisation of industrial policy requires new and modern instruments at the Flemish level ('grand projects') and at European level (a European Transformation Fund). A new Industrial Pact will need to be concluded, in which all the different sectors will be involved.

With the States General for Industry, the Flemish Government wishes to mobilise all the interested actors, in keeping with the participative policy development model. The essential precondition for the success of this ambitious change programme is broad social and political support. 'Flanders in Action' and the 2020 Pact have set this process in motion, as a result of which more than 100 midfield organisations have given a positive undertaking. The change plans will be pushed forward by a commitment to rapid and vigorous action with a view to achieving a real breakthrough in the medium to long term. The sense of urgency created by the current crisis should act as a stimulus to engineer the very DNA of our economy.

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102 Plan Bureau, Working Paper 17-08, Growth and productivity in Belgium, Federal Plan Bureau – see also http://www.plan.fgov.be/admin/uploaded/200809300959590.wp200817.pdf
103 Also see elsewhere in this edition: p. 28

What is the role of EWI in the States General for Industry?

The compilation of the action plans is sector-driven. The first task of EWI is to act as a '*help-desk*' for the provision of relevant data and content support for these sectoral plans. With this aim in mind, EWI coordinates the cooperation provided by the different strategic advisory councils and the policy departments.

A second task follows naturally from the first, namely the provision of examples of good practice, which will allow for the targeted preparation of the action plans and their transformation trajectories. These examples of good practice will be collected in a *scenario book*, which can be made available for use by other sectors. Finally, a reference framework will be devised which will allow the partners to test their proposals against the objectives set out by the States General.

EWI will also assist in the round-table discussions, which will follow up and further elaborate the results of the SGI. This will require the development of a new *methodology*, which can offer stronger future thinking and the better detection of collaborative opportunities in the value chain as possible aids for the process of economic transformation.

Now it's up to you

If I had been standing next to myself and had seen how I did it, I would have given myself a pat on the shoulder. Not necessarily from admiration. More a question of sympathy, really. The sort of sympathy you feel for people caught up in TV 'reality' programmes – after you have had a good laugh at them first. I know how they feel. I can remember my 'first time' as if it were yesterday.

The very first time, you want to leave nothing to chance. Failure is not an option. I had checked how I was supposed to do it. There are countless books on the subject, not to mentioning all the stuff that you can find on the internet. I watched how other people did it, and I thought I was ready. It was summer, the atmosphere was good, there was music… yet still it didn't turn out exactly as I had planned. In fact, it was a bit of a disappointment. To be honest, I had expected more. And it was all over so quickly… Yes, that's the way it is, when you do something for the first time. Trying something new, starting something by yourself: it's not as easy as it might sound. What was my 'first time' enterprise? A music festival.

The summer of 2003 was drawing to a close. I was nineteen and living in a typical small Flemish village, with not a lot to do. However, it was my village, the place where I belonged, the place where I could have my say. You know the kind of thing that happens. Conversations start over a pint or two in the local pub. Soon you are spouting philosophy, planning to change the world, or telling anyone who will listen how you are going to do this and that… Fortunately, most of these wild ideas disappear next morning, when your hangover wears off: they just all seem so risky. But sometimes, just sometimes, an idea doesn't go away. Something is brewing inside you, something you can't stop. This time you have an irresistible desire to actually do what you said you would do. This time you will take the risk – and so you become a new person: a doer, an undertaker, an entrepreneur!

You can usually recognise an entrepreneur from his two main characteristics: he has (1) a fantastic idea, and (2) absolutely no starting capital to put that fantastic idea into practice. Fortunately for the idea, this material problem can sometimes be overcome by the above-mentioned irresistible desire. You have to start somewhere and you certainly need materials to get things moving, and so you invest what little money you have in your 'enterprise'.

In my case, the enterprise in question was a music festival. By music festival I meant something more than two beer crates and a few planks for a stage, with some overweight schmaltzy singer. I meant a proper music festival, with bands people had actually heard of. However, it soon became clear that my own 'starting capital' – relatively limited as a nineteen-year-old – was insufficient for the enterprise I had in mind. Happily, every typical small Flemish village has a typical, small group of traders and shopkeepers. Providing you make your pitch well (and providing you regularly buy something from their store), you can usually persuade them to 'sponsor' your enterprise. Sometimes this might mean hiring a slightly less anonymous singer for your beer crate stage. In fact, you might be able to hire a proper stage, and a celebrity to sing on it. And the celebrity might attract new sponsors – and so your financial possibilities go into overdrive… What am I trying to say? Namely, that you need investment and investors for your enterprise. A little money of your own, a little help from your more wealthy contacts, perhaps a serious sponsor or two… and suddenly you are off and running.

But there is something we have forgotten. The Government, they have money as well, don't they? That's right, they do. Not that they have money to burn, but if you put your time into the preparation of a well-considered business plan, and can describe clearly what you want and why you want it, they will always be ready to welcome you. Certainly if you are young and are ready to conquer the world (in a well-considered manner). No matter how large or small your plans, the Flemish Government has many channels to which you can turn for help. Whether you are interested in a subsidy, a loan or just some information and advice, they are there to give you a leg up. But of course, you must take the initiative yourself. "Ask and you shall receive," as the Good Book says. Oh yes, just one other thing: you will be expected to take that risk that we were talking about earlier.

And this is where things often go wrong. Because let's be honest: starting a new enterprise is always something of a risk. Whether the economy is booming or whether we are in the middle of a recession. It is this risk factor which causes many entrepreneurs to lose heart, and so they decide not to take the plunge. They opt for certainty and security. Yet paradoxically, that certainty leaves them with a feeling of uncertainty, a nagging doubt about 'what might have been'.

Dare to take that risk. "Twenty years from now you will be more disappointed by the things that you didn't do than by the ones you did do. So throw off the bowlines. Sail away from the safe harbour. Catch the trade winds in your sails. Explore. Dream. Discover." This is a quote which is more than 100 years old (by the American writer, Mark Twain). I don't know if it is true, but I like to believe that it is – and that is a risk I am prepared to take.

But I almost forgot – what about that musical festival of mine? Well, at first it didn't turn out as I imagined. The first edition was quite literally a washout – it poured down. But like all good entrepreneurs, I persisted – and the second and third editions were fantastic. If the call of the labour market had not been so strong, there might even have been further visits. I already took a shot, now it's your turn – if you dare.

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