N°9

Combining Economy, Science and Innovation for a better society

review

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New year, same crisis?

The European Recovery Plan

The economic crisis has forced many countries and regions to devise emergency recovery plans. Flanders puts its hand in its pocket.

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EU presidency

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The eye of the storm

Crisis: it is a word that has been on everyone's lips in recent months. At Belgian federal level, the government has continued to wrestle with an on-going political crisis. An even greater crisis in the banking and financial sector has had international ramifications. As a result, almost every country in the world is struggling to cope with the effects of a deep-seated economic crisis.

The 64,000 euro question is whether or not the worst of these crises are now behind us. Or are we currently experiencing a period of calm before a new storm? Are things still going to get worse before they get better? The recovery in the stock market suggests that the first of these hypotheses may be true, whereas the current economic situation indicates that there may still be plenty of rough water ahead.

Whatever the truth of the matter, these uncertain times have allowed governments at all levels to rediscover their regulatory and stabilising role. In general, the Flemish Government has been at pains to stress the need for greater innovation, creativity and entrepreneurship. Good advice, no doubt – but advice which comes at a price. And money does not grow on trees – not even for a government. Increasing the money supply is a poor option in the long term, and so the only remedy seems to be a general tightening of all our belts. Economies will need to be made and priorities set. But which ones? And on what basis? Can Flanders afford the luxury of independently setting its own priorities, without considering – for example – the European context?

We have gathered together various different examples and approaches relating to a number of the Flemish government's general initiatives and policy options in this field. It is not our intention to be exhaustive or to push certain choices to the forefront. Nor should you expect us to delve too deeply into concrete anti-crisis measures. In view of their time-related aspects, you would be better advised to seek more information on such matters by consulting the information channels of the various individual agencies in the EWI policy domain.

However, in this number you will be able to read how Flanders has signed up for the post-2010 Lisbon strategy (p.24) and the European recovery plan (p.12), and you can learn what a Gazelle Leap is (p.7). The future of the former mining sites in Waterschei will be briefly sketched (p.10). We also will be examining a new agreement for knowledge workers 'over the Moerdijk' – or in The Netherlands, if you prefer – (p.17) and at our own preventive business policy (p.16). In addition, the spotlight will be focused on the activities of Flanders Enterprise (p.18).

For the first time, we will also be looking at the forthcoming Belgian presidency of the EU and the Flemish perspective on this presidency. We will begin with articles which sketch the general situation (p.27) and underline the importance of eco-efficiency (p.32). And, of course, we will not be forgetting our classic features: the column and other contributions highlighting the work of a policy research centre (which on this occasion – not entirely coincidentally – is the centre for taxation and budget – p.40), a research institution (The Flemish Marine Institute – p.36) and a new scientific centre (for neuro-electronic research – p.38).

Crisis or no crisis, we are once again able to offer you a stimulating and varied EWI Review. Hopefully, you will not be 'economical' with your appreciative comments. I wish you good reading.

Peter Spyns,
General Editor

Science: unknown and unloved?

One of the new buzzwords is the term 'knowledge society'. Policy-makers are becoming more and more convinced that a broad social base for scientific research and innovation is an essential precondition for economic success and prosperity. What is the implicit reasoning behind this belief? It is argued that a greater general interest in science and innovation will result in a much needed influx of talented young people towards scientific and technological courses of study and training. In addition, greater scientific literacy amongst the population will help to further stimulate and perpetuate the broad social base which is so urgently needed.

The key question is this: what exactly do we mean by the term 'broad social base'? It would be naive to think that people will be more prepared to accept controversial research and applications simply because they are better informed about them.[1] Experience has shown that this is not the case – nor should it be the intention.

From monologue to dialogue

A new international tendency is gradually emerging in the field of scientific communication and popularisation, which reflects a much wider general shift in social attitudes. Instead of using the 'old-fashioned' didactic model – often referred to in the specialist literature as the deficit model – the scientific community is now evolving towards the use of a participative model.

The deficit model assumes a lack of sufficient understanding on the part of the general public – a lack which must be made good by the scientists. To do this, the scientists offer their specialist knowledge in a 'vulgarised' form. In other words, it is a top-down model, with information flowing from the expert to the layman. The participative model is based on a dialogue between all the interested parties: scientists, the general public, non-governmental organisations, action groups, industry and, of course, the policy-makers. They endeavour to conduct a common discourse which can lead to common conclusions. In this case, the information does not flow exclusively top-down: on the contrary, it flows in many different directions. All the parties to the dialogue are engaged in a learning process. And by involving people who have relatively little 'technical' knowledge in this process, general popular suspicion about the matters under discussion can be significantly reduced. After all, popular hostility towards science is not so much a question of a lack of knowledge, but more a question of a lack of involvement, the absence of a feeling of 'ownership'.

Scientists in the pub!

Although the so-called 'science pubs' (see box) do not apply participative methods in the strict sense of the term – in essence, they are simply engaged in a form of interactive scientific communication – it is nevertheless possible to identify a number of basic participative characteristics in their working. In these pubs, a scientist is confronted with a direct question from a member of the public. This also allows him to discover something about the concerns associated in the public mind with his research and its possible applications. And now that science fiction is increasingly becoming scientific reality – consider, for example, the developments in the fields of eugenics or the cybernetic interactions between man and machine – it is only to be expected that these concerns will continue to increase.

However, other mechanisms can be of equal importance. Ignorance, for example. Genetically modified organisms and nuclear energy are two of the classic themes for public debate. Yet in comparison, popular awareness of nanotechnology – the implications of which are potentially much more far-reaching – is almost non-existent...

A question of issues

Since the famous debate between Walter Lipmann and John Dewey at the beginning of the 20th century, the concept of 'issues' has played an important role in the democratic political process. In media and communications studies a number of models have been devised to map and explain the 'media-driven development process of a question or issue'. In short, the level of public attention received by any particular issue can lead to a shift in the attitude of certain actors towards that issue. In the public arena, scientific and technical questions must compete with rival questions from other fields: social, political, economic, etc. The resulting loss of 'control' over scientific issues in the public domain is a matter of frustration to many in the scientific community. As a result, they often point the finger at a 'sensational' press and 'ignorant' citizens.

An issue of whatever kind has a fairly well-defined life cycle once it enters the public domain. Moreover, it is a cycle which corresponds to neither the real importance nor the ethical desirability of the matter under consideration. On the contrary, the cycle is largely dependent upon the vagaries of social dynamic. We are all familiar with this

process, even with regard to non-scientific issues: something suddenly becomes politically important, simply because sufficient media attention has been generated to make it publically important. In short, it becomes news. But this process can also work in the opposite direction: after a period of time, the public gets bored with the issue, the newspapers stop writing about it and it disappears from the political agenda. Whether or not an effective solution has been found is almost irrelevant. The issue of global warming is a classic example in this respect. Many other equally crucial environmental problems need to be solved, but they have been driven from the public stage by the media hype surrounding the gradual warming up of the earth.

An understanding of the dynamic which exists between the different actors - such as the media, the general public, the policy-makers and the scientists – all of which are social constructions rather than actual physical categories – is essential for the pursuit of successful policy.

The Flemish way

An evaluation was recently carried out of the Flemish government's policy relating to communication on scientific matters during the past eight years. The evaluation concluded that economic finalities were the most important factor for determining actions. The continuing call for a greater influx of candidates in technical and scientific subjects resulted in a policy which was strongly focussed on encouraging girls to opt for the so-called beta-sciences. In addition, a number of specific actions were aimed at increasing public awareness. These actions were based on the belief that improving scientific literacy and encouraging the intellectual development of broad layers of the population are objectives worth pursuing, as a precondition for a truly democratic society (see box). It should, however, be noted that this is still not the same as seeking to achieve their active participation.

There is an urgent need for closer collaboration between the government and the relevant actors, and between the relevant actors themselves. The sharing of knowledge, experience, vision and methodology between the different actors – for example, the Institute for Society and Technology (see box) – is a specific aim of the Flemish Department of Economy, Science and Innovation (EWI), for which concrete plans exist. The international trend towards greater social involvement in policy matters can no longer be ignored. In this respect, further scientific research into the effect of the role of mediatisation can lead to the development of more effective policy. However, this must be more than just fine words and good intentions – which is the impression so often created by the high-flown declarations which are frequently heard at European and international levels. The reality is usually much more prosaic, and scientific literacy amongst large sections of the population continues to be remarkably low, if viewed from the perspective of the scientist or the interested layman.

Increasing interest (and the number of candidates) at secondary and university level for scientific and technological studies; the continuing stimulation of innovation to underpin our prosperity; the 'democratic' increase of public involvement in the scientific and technological issues which affect our future: these are all matters of the utmost importance for Flanders.

The world's scientific communicators are also in agreement about the need to shift from a 'public understanding of science' model to a 'public engagement in science' model. However, public engagement and public involvement presuppose public knowledge. For this reason, structural collaboration with the Education Policy Division is a matter of the highest priority. At the same time, it continues to be necessary to further stimulate general scientific literacy. A minimal understanding of basic scientific principles and facts is a *sine qua non* for a democratic public debate which is not dominated by EOS readers, sci-fi freaks and environmental activists. The scientific transformation of society cannot take place without a corresponding social transformation of science.

1 Science and technology in a mediatized and democratized Society, Journal of Science Communication 6(1), March 2007, Pieter A. Maeseele

IST

Institute Society & Technology

What is the IST?

The Institute for Society and Technology is an independent institution linked to the Flemish Parliament. Previously known as the viWTA and now much more simply as the IST, the institute carries out investigations into the social aspects of scientific and technological developments. It studies and analyses, it stimulates and structures social debate, it monitors scientific news and breakthroughs at home and abroad, it implements prospective research, it informs target groups and – last but not least – it gives advice to the Flemish Parliament.

For more information, please consult:
www.samenlevingentechnologie.be

Science pubs: a good idea?

Following their success in The Netherlands, a number of science pubs have also opened their doors in Flanders in recent years. The basic idea is simple but effective: in a relaxed setting (a pub!) a number of important and/or interesting matters of the day are discussed from a scientific perspective. Various scientists are on hand to give short explanations about the topics under discussion, after which the public is invited to build further on the central themes by asking questions, making comments or offering opinions. The resulting debate is 'chaired' by a moderator, whose task is to ensure that people do not stray too far from the point. This method has been used in many countries to lower the scientific threshold in an amusing and approachable manner, which makes science less remote for the public and allows them to instantly interact with real scientists on a face-to-face basis. Flanders currently has science pubs in the cities of Kortrijk, Ghent, Antwerp and Leuven.

For a summary and further details, please consult
www.wetenschapscafe.be.

Beagle, in the wake of Darwin

One of the actions recently taken to improve general scientific awareness was the launching of the television series *Beagle, in the wake of Darwin*. This cross-media project is a collaboration between the VPRO (Dutch television), Teleac (Dutch television), Canvas (Flemish television) and various other media partners. The resulting programmes are part of the celebrations to commemorate the 200th anniversary of the birth of Charles Darwin and also form part of EWI's scientific communication action plan.

The programmes chart the progress of the Dutch clipper *Stad Amsterdam* (City of Amsterdam), as it traces the route followed between 1831 and 1836 by the *Beagle*, the ship in which Darwin sailed around the world on his fantastic voyages of scientific discovery. It was during these voyages that he laid the foundations for his theory of evolution. The programmes are fronted by Dirk Draulans, a well-known Belgian biologist and scientific journalist, and Sarah Darwin, great-great-granddaughter of the great man himself. The ship serves the dual function of floating studio and mobile laboratory. Its 'crew' includes guest scientists, artists, writers and others, who each make their own individual contribution to the overall project, the main aims of which are to re-evaluate the achievements of Darwin and to give an overview of the existing state of science and the world.

The 35-part series can be seen weekly on Canvas or can be viewed via www.canvas.be/beagle. Karrewiet, a children's channel on Belgian television, is also devoting considerable attention to the *Beagle* project. To maximise the educational potential of the voyage, Canvas is collaborating with the school magazine Klasse and with several other education partners.

For more information, please consult:
www.canvas.be/beagle or www.beagle.VPRO.nl

Liselotte De Vos and Bart Dumolyn,
Research Division

The Gazelle Leap

Flanders wants more Gazelles. And so does The Netherlands. And probably every other European member state as well! Why? Because the Gazelle – along with the Elephant and the Mouse – is one of the three animals which we can come across in the business jungle…

First, there are the big companies - the Elephants: they are large, they stay large and they continue to get even larger, but at a relatively slow rate of growth. Then there are the small companies – the Mice: they begin small and they stay small, with hardly any growth at all. You can compare them with your local chip shop. If you want a great bag of chips, this is the place to go. But if you are looking to make an investment, then forget it: their turnover is hardly likely to double within the next twelve months. Finally, there are the companies that begin small, but grow to become very big in a very short space of time. These are the Gazelles.

Gazelles wanted!

If a country or region wants to create plenty of new jobs quickly, then it needs fast-growing companies of this kind. In this context, the term 'Gazelle' was first used by David Birch, an American researcher attached to the MIT (Massachusetts Institute of Technology). He used the term to describe companies which realised a growth of at least 20% in four successive years, starting with a minimum basic turnover of $ 100,000.

Importance for the Flemish economy

The presence of Gazelles is of crucial importance for the Flemish economy, since this relatively small number of companies is responsible for a disproportionately large share of both newly created jobs and added value.

A recent American research programme conducted over a period of four years showed that the fastest growers were responsible for about 70% of new jobs in existing companies during that period and for no less than 60% of new jobs in the American economy as a whole. The Gazelles also invest significantly greater resources in research and development than the 'average' company. This is a further reason why such companies are important for the Flemish economy.

How far can a Flemish Gazelle leap?

Fast growing companies certainly create new jobs, but they are also confronted with specific problems related to their rapid rate of growth. This means that there is a need for an equally specific policy targeted at these companies.

In Flanders this specific policy is called 'the Gazelle Leap'. The Gazelle Leap encompasses an integrated range of measures aimed at fast-growing companies, with the purpose of helping them to cope with the growing pains which are always associated with rapid expansion. The most serious of these difficulties include the recruitment of suitable personnel; the adjustment of management and organisational structures to meet the changing situation; and the attraction of sufficient investment capital to finance their growth. To allow them to overcome these obstacles, the Flemish government will provide them with intensive, high-quality guidance, specifically tailored to meet their rapidly evolving requirements. Combined with many other existing measures, the Gazelle Leap package will ensure that Flanders continues to attract international companies with good growth potential, which can only further encourage job creation and an innovative economic environment.

Jan van Nispen,
Enterprise and Innovation Division

Competitive regions through research and innovation: towards system innovation?

There is sometimes a lack of clarity with regard to the different roles and responsibilities of the various governmental levels – national, regional and local – in the implementation of the Lisbon Strategy. The policy is both top-down and bottom-up driven. But which is the best approach in terms of achieving optimal value creation? In the following article, we sketch a design for an innovation policy at European level and a summary of the theoretical principles that lay at the basis of that policy design.

The EU policy framework for innovation is drawn up by the European Commission and the European Council. For the implementation of its innovation policy during the period 2007 – 2013 the EU has at its disposal three specific instruments, which vary considerably in terms of scope, legal basis and support mechanisms: the structural funds and the cohesion fund; the 7th Framework Programme for Research; and the Framework Programme for Competitiveness and Innovation (see Table 1). The Commission is looking to achieve greater integration and synergy between these different instruments and programmes.

The following policy cycle is now in full preparation. But it is not clear how matters will be taken further during the post-2013 period. Will the objective be to regionalise the framework programmes? Or will there be a greater national emphasis, with a thematic specialisation of the cohesion policy?

More attention for regional and systemic aspects

During recent decades, the most important economic growth theories have been evolving away from a linear approach and towards a more systemic approach[2].

According to the linear approach, the innovation process is a succession of discrete actions: starting with basic research and invention, moving through applied research and production, and ending up with commercialisation of a new product or service. The intervention logic of the European Commission in terms of this approach can be summarised as follows: FP7 supports the basic research, CIP offers financial and service support, and the structural funds support both training and applied technologies.

However, this approach does not respond adequately to the modern requirements of innovation and new technologies as a means to enhance competitiveness. Innovation and research must be allowed to flourish in an integrated manner. The systemic approach is based on a non-linear, interactive process. The various actors – whose roles can be defined beforehand on the basis of the socio-economic and institutional contexts – are kept constantly in touch with each other by means of links and feedback loops. In practice, European innovation policy is currently undergoing a transition: the systemic model is beginning to predominate, with a resulting increase in attention to the territorial – and thus also regional

Table 1: EU instruments for Innovation

EU innovation instruments 2007-2013	Phase	Budget 2007-2013
7th Framework Programme for Research (FP7)	Invention and development	€ 50 billion
Framework Programme for Competitiveness and Innovation (CIP)	Commercialisation	€ 3.6 billion
Cohesion policy	Economic development	€ 347 billion
- Cohesion funds		*€ 70 billion*
- Structural funds		*€ 277 billion*

– dimension. In accordance with this model, the programme objectives can be better aligned with each other on the basis of a demand-driven logic (see Figure 1).

What are the practical consequences of this transition? The regionalisation process, supported by this systemic approach, has resulted in a growth in the number of policy instruments. The far-reaching stratification which this has initiated contrasts sharply with the desire for integration, which was initially set as the objective. A clear description of the aims and purposes of the policy instruments is therefore desirable.

A double perspective

The transition towards a systemic approach also means a move away from traditional research and industrial practices, with greater room for a regional dimension in innovation policy. Or to put it another way: there is now more scope for bottom-up policy. This is not to say that traditional research policy and the systemic approach are incompatible with each other. Traditional instruments must be supplemented by new types of government intervention.

There are two relevant theories in this respect. On the one hand, there is the neo-classical theory: economic changes have constraints with regard to inputs and outputs as sources of economic growth. These market failures make government intervention necessary. On the other hand, there is the evolutionary theory: a trial-and-error process, which is not limited to the optimisation of rational behaviour, in terms of which the results are dependent upon input. This theory sees economic change as a learning process, which requires greater public intervention. As a consequence, the priority is placed on the organisation and the actions of the various formal and informal learning processes. A neo-classical emphasis on input factors combined with a correct, non-linear approach towards the innovation process will lead to a policy which enables balanced government funding of basic and applied research.

These growth theories suggest two perspectives for regional innovation policy and the European cohesion policy. The neo-classical theory suggests a top-down policy, while the evolutionary counterpart suggests a more bottom-up policy. The challenge consists of developing an integrated bottom-up-top-down approach, both in terms of content and management. As part of this process – and certainly in these times of crisis – the expected procedural results, the timing and the institutional cooperation mechanisms[4] must be geared in the most realistic and efficient manner, in order to strengthen the capacity to innovate successfully.

Hilde Vermeulen,
Enterprise and Innovation Division

References:

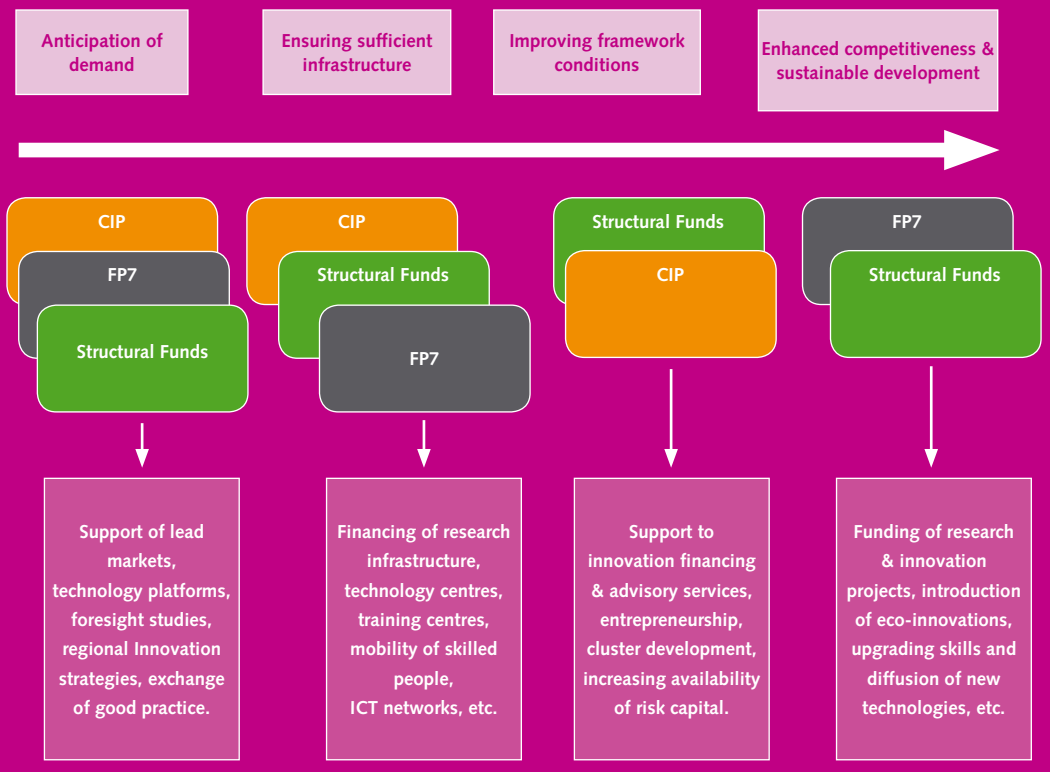
- *Competitive European Regions through research and innovation, different theoretical approaches to innovation policies,* 2009, G. Seravalli, Universita degli Studi di Parma
- *Synergies between the EU 7th Research Framework Programme, the Competitiveness and Innovation Framework Programme and the Structural Funds,* Policy Department for Economic and Scientific Policy, European Parliament, May 2007

2 Also see EWI Review (1) 1: 11 – 13.

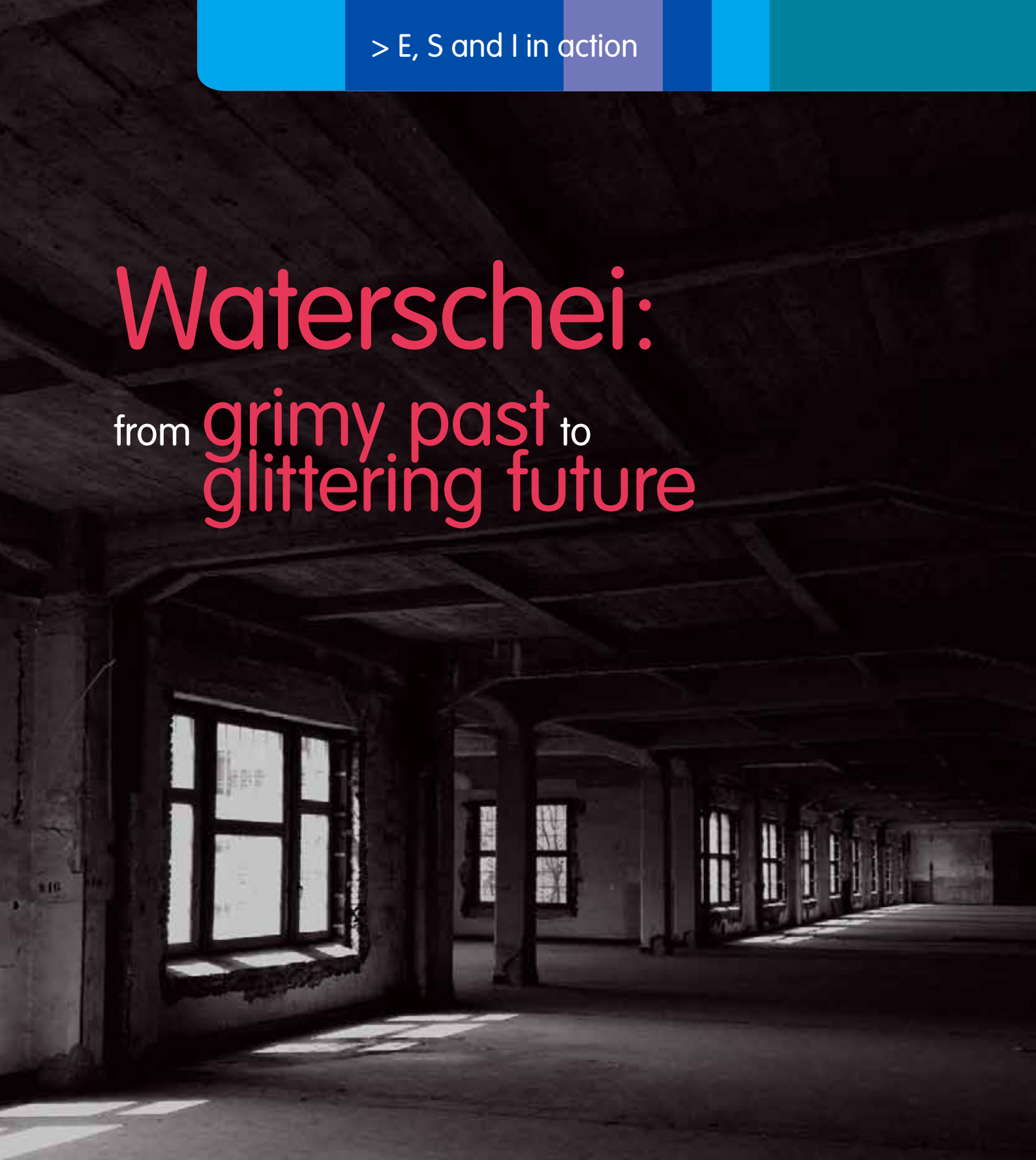
3 Synergies between the EU 7th Research Framework Programme, the Competitiveness and Innovation Framework Programme and the Structural Funds, Policy Department Economic and Scientific Policy, European Parliament, May 2007, p.8 (figure transcribed and translated).

4 For example, in contrast to the CIP and FP7, the Cohesion Fund is based on the principle of public-private co-operation, to which the Commission, the member states and the regional authorities all contribute jointly.

Figure 1: Synergies between the various programmes and funds.[3]



Waterschei: from grimy past to glittering future



At the end of 2006, the Limburg Re-conversion Company (LRM) sold the old coal mine site at Waterschei to Genk city council. The new owner was anxious to play an active part in converting the site into a high quality industrial estate. A science park would also be developed, where innovative research would be transformed into commercial activity and jobs, thereby giving a further boost to our knowledge-intensive economy. Right from the very beginning, the Limburg Association of Universities and University Colleges and the Catholic University of Leuven Association have been closely involved in the plans.

There was a moment when it was feared that all these fine plans would come to nothing. How on earth would it be possible to attract interest in a high-quality research centre on an old mine site – particularly in these times of crisis?

The answer was simple: by taking the first steps yourself! Acting on the principle that you should never be afraid to put your money where your mouth is, in the spring of 2009 the Genk city council, acting in collaboration with the universities of Hasselt and Leuven, invested 8 million euros in the realisation of the **Waterschei Science Park.**

Restoration of the old mine buildings…

This first phase involved the restoration of the old mine buildings, where a number of the park's central services are to be located. Later, several other mine buildings, which enjoy protected status, will be restored. In addition, a search is underway to find capital and sponsors for the construction of a new 5,000m² complex. It is intended that this first phase should be completed by 2011, when it is hoped that the first development centre will be opened.

The science park will eventually consist of eleven separate clusters of buildings covering an area of 220,000m², which should be good for the creation of some 4-6,000 jobs, at least half of which will be for unqualified personnel. Moreover, the park will be surrounded by an industrial estate which will be at least three times the size. In total, the project should help to provide no fewer than 20,000 new employment opportunities in the region.

… for new development centres and laboratories

The Waterschei Science Park will focus its attention on spin-offs from the universities of Hasselt and Leuven and on companies which may be interested to locate themselves near to these respected seats of learning. This collaboration with the Catholic University of Leuven, the University of Hasselt and the Catholic University College of Leuven (which also belongs to the University of Leuven Association) is one of the most unique aspects of the new park project. Moreover, there will be no place on the park site for production companies, office buildings and warehouses. The available space will be devoted exclusively to development centres and laboratories. Particular emphasis is being placed on the sectors involved with the development of 'clean technology' and 'new materials'. Interested companies who are active in the life sciences or ICT will be offered opportunities to set up new centres and laboratories on the nearby Diepenbeek Science Park. In this way, it should be possible to create a multi-discipline, high-technology valley at local level, which will allow the better qualified inhabitants of Limburg to find work on their own front doorstep!

A technology triangle

The Waterschei Science Park also offers a unique opportunity for the further expansion and concrete realisation of the Eindhoven-Leuven-Aachen technology triangle (ELAt)[5]. This trans-national initiative will help to optimise the economic climate in the region as a whole and will allow it to develop in the short and medium term into an internationally recognised zone of technological excellence. This prospect is based on a clear innovation strategy, which has been jointly developed by the knowledge institutions, the business world and government agencies at all levels (national, regional and local). The central element of this strategy is the concentration and interaction of knowledge in areas in which the region is known to be strong: micro- and nano-electronics, digital signal processing, embedded systems, mechatronics and medical technology. Sufficient attention will also be devoted to the encouragement of high-tech enterprise and the better availability of (risk) capital for small and medium-sized technology companies.

In collaboration with the Flemish Institute for Technological Research (VITO)[6], the Catholic University of Leuven has also conceived a plan to establish a research and incubation centre for environmentally-friendly and sustainable energy technology in the Waterschei Science Park. As a result of this proposal, and within the context of the ELAt, the technology triangle can be extended and opened up both thematically and geographically. It is also evident that Eindhoven and Leuven can be better linked via Waterschei (and its anticipated infrastructure) than is currently the case.

Thinking big …

This being said, the region harbours even bigger trans-national ambitions. Together with its ELAt partners, the VITO has submitted a proposal to found a co-location centre in a (still to be established) Knowledge and Innovation Community dedicated to sustainable energy. These so-called KICs are an instrument recently set up at the initiative of the European Institute of Innovation and Technology (EIT)[7]. The EIT aims to be a key player in the field of sustainable growth and competitiveness in Europe. With this goal in mind, the institute seeks to stimulate world-leading innovation which will have a positive impact on the European economy and European society as a whole.

The KICs – which must help to make this objective achievable – are thematic innovation clusters which contain all the different links in the knowledge chain: from education, through experimentation, right up to enterprise. Within the KIC framework, people from different countries and different positions in the knowledge chain are physically brought together in a single location: the co-location centre. This helps to optimise the collaboration and cross-fertilisation of ideas between different lands and cultures, and also between education, research and industry. The KICs seek to promote high-technology partnerships, innovation, market creation and entrepreneurship. This means that a KIC, by definition, has the ambition to become a world leader within its own field of expertise and to exercise a strong social and economic impact in the (medium) long term.

The EIT organised a first call for KIC proposals in the autumn of 2009. Specific themes within the context of this call included climate change and the environment, sustainable energy, and future perspectives for the information and communications society (ICT).

World ambitions for sustainable energy

One of the proposals which has been submitted in respect of sustainable energy is InnoEnergy. This proposal hopes to play a crucial role in the realisation of the SET Plan: the European Commission's strategic plan for energy technology. This KIC will consist of a central holding unit (with the legal status of a European company), which will coordinate the activities of six regional co-location centres, which will also be set up as separate legal entities, each working within the limits of clearly defined themes and with specific objectives.

One of the six InnoEnergy co-location centres will be sited in the Benelux, more specifically at a joint location shared between Eindhoven and Leuven. The thematic focus for this centre will be *the construction of intelligent, energy-efficient buildings and cities.* The various partners (in the first instance) are the Catholic University of Leuven, Eandis, Elia, IMEC and the VITO in Flanders/Belgium; and ECN, the Energy Delta Institute, Exendis, NXP Semiconductors, Philips, the Technical University of Eindhoven and TNO (the Dutch Institute for Technological Research) in the Netherlands.

On December 17th the InnoEnergy proposal was accepted by EIT. The Benelux co-location centre will be based at two separate physical locations: in Eindhoven (on the High-Tech Campus) and at … the Waterschei Science Park!

Thus, a former Limburg coal mine site will accommodate major R&D centres in the field of sustainable energy in Europe.

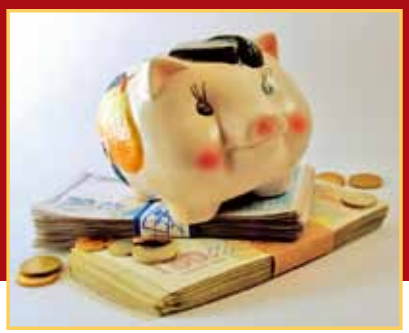
It almost sounds like a piece of science fiction in its own right: how a disused coal field and its derelict mine can be transformed into a high-technology hot-spot, of which Belgium – and Europe – can be proud.

Erwin Dewallef,
Strategy and Co-ordination Division

5 See http://www.elat.org and EWI Review (2) 3: 23
6 See EWI Review (2) 2: 23 – 25
7 See http://eit.europa.eu.

The European Recovery Plan: Flanders puts its hand in its pocket

The economic crisis, which followed hard on the heels of the financial crisis at the end of 2008, has forced many countries and regions to devise emergency recovery plans. The Flemish government was the first of the Belgian governments to reach agreement on such a recovery plan.[8] During the first weeks of December 2008, agreement was also reached about a national recovery plan. This was just in time for the meeting of the European Council in Brussels on 11 and 12 December 2008, when the European leaders and heads of state concluded their own agreement about a European economic recovery plan.



The European economic recovery plan foresees a budgetary stimulus of some 200 billion euros, which is roughly equivalent to 1.5% of the Union's gross domestic product. The automatic stabilisers, such as unemployment benefit, also account for a further 3.5% of GDP. Only a relatively small proportion of the proposed financial incentives – some 30 billion euros – will be made available at the level of the European Union itself. This expenditure will be shared equally between the EU budget and the European Investment Bank (EIB). In this respect, the European budget has already transferred more than 6 billion euros from the structural and social funds to the member states: 5 billion euros of non-utilised resources for the development of energy and broadband projects and almost two billion euros foreseen for public-private partnerships in the fields of green cars and energy-efficient buildings and factories for the future.[9] For its part, the EIB has (amongst other measures) set up a clean transport facility and has released significantly more resources for small and medium-sized businesses.

The member states share the burden

The remaining 170 billion euros for the recovery plan budget needs to be found by the member states themselves. During their meeting held on 2 December 2008, the European ministers of finance and budgetary affairs stressed that the measures taken by the member states in this respect must be timely, temporary and well-targeted.

In order to increase the member states' room for manoeuvre with regard to measures to support their economies, the European Commission published a *'temporary framework for state aid measures to support access to finance in the current financial and economic crises'*, as a result of which various lines of action for government support to individual companies were extended or relaxed.[10] The main aim of this framework is to ensure the continued availability of credit to companies, but not at the cost of artificially propping up non-profitable businesses, which were already in trouble before the economic crisis began. Amongst other measures, the temporary framework foresees an increase in the maximum threshold of the current *de minimis* regulation[11] from 200,000 euros to 500,000 euros. The regulations for state aid in the form of guarantees have also been made more flexible.

The Belgian contribution

The Belgian recovery plan is good for an additional financial stimulus of 2 billion euros in 2009 and 1.3 billion euros in 2010. Even so, the plan has been the subject of considerable criticism. For example, the Itinera think tank was quick to point out that the majority of the measures are not temporary. According to Itinera, the reduction in social insurance contributions and the increase in benefit for the temporarily unemployed are structural measures.[12] This point has not been lost on the Commission, which is aware that many of the 'temporary' recovery measures will be difficult to revoke, even if they are 'timely' and 'well-targeted'.[13]

A Flemish triptych

The Flemish recovery plan is based on a budget of 900 million euros, which is equivalent to just under 0.5% of GDP. The plan is divided into three different sections: a strengthening of the credit facilities available to companies; a strengthening of policies designed to activate the labour market; and a strengthening and acceleration of public and private investment. Each of these sections contains measures which fall within the economy, science and innovation policy domain.

One of the most important credit-related measures is the strengthening of the guarantee arrangements for companies. This has been achieved in part by a straightforward increase in the budget.[14] But the target group has also been extended, so

that major companies are now eligible for guarantee assistance (this was previously restricted to SMEs). In addition, the Flemish government has made use of the possibilities for extended guarantee provisions, as foreseen in the European Commission's temporary framework. The maximum sum which can be guaranteed has been raised from 1.5 to 3.75 million euros. Large companies and SMEs can both benefit from a reduction of 25% and 15% respectively on the annual premiums to be paid for new guarantees which conform to accepted market standards. These extended provisions will remain in force until the end of 2010. By the middle of 2009, it was already clear from the large increase in the number of applications for guarantees that these measures were more of a necessity than a luxury.[15]

The credit section of the Flemish recovery plan also foresees a bringing forward of the second round of capital for the Arkimedes funding mechanism.[16] The necessary resources for this measure should be available with effect from 1 January 2010.

Other useful steps include the setting up of a mezzanine funding channel within the Flanders Investment Company and a financial strengthening (and administrative simplification) of VINNOF.

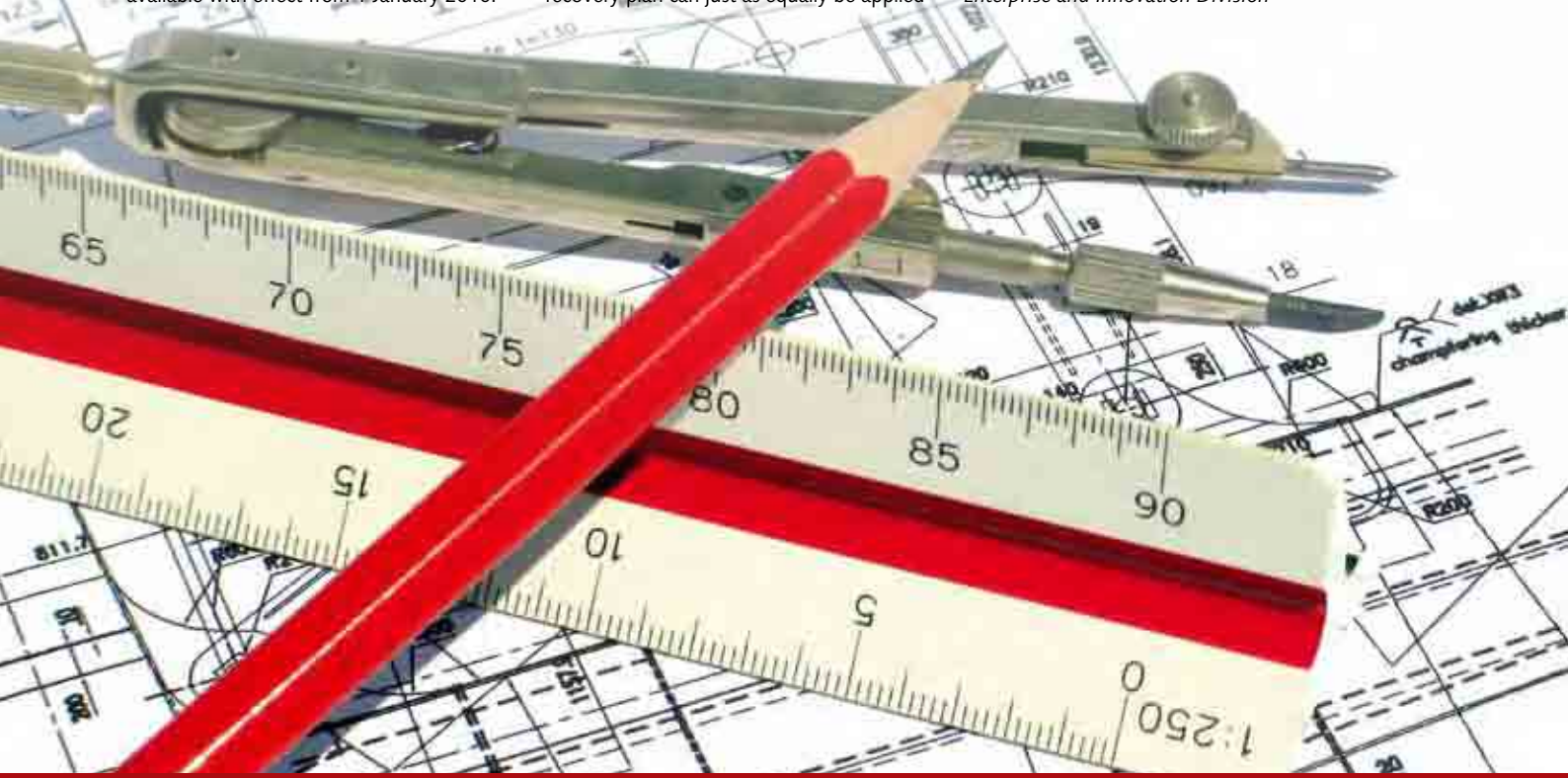
The second section – devoted to the activation of the labour market – was assisted by the accelerated consolidation of the preventive business policy,[17] which was implemented at the end of 2008.

Measures to strengthen and accelerate public and private investment – section three of the plan – include the participation of the Flemish government in the construction of a second 'clean room' at the IMEC[18]; the setting up of the PPI Knowledge Centre (Public Procurement of Innovation) within the IWT; and the implementation of the action plan of the same name.[19]

Padding

This short summary suggests that the criticisms which have been made of the Belgian recovery plan can just as equally be applied to the Flemish recovery plan. Most of the measures are 'timely' and 'well-targeted', but they are not always 'temporary'. But perhaps this was to be expected. Every member state is keen to present a recovery package which is as broad and as comprehensive as possible. As a result, they are not too concerned if some of the measures are not temporary or were already included in their long-term planning before the crisis started. This is certainly the case, for example, with the innovative tendering programme, which forms a key part of the Flemish recovery plan. In short, this is nothing more than 'padding': superfluous material added to the plan to make it seem more substantial than it really is. Not that Flanders expects the European Commission to react too strongly to this economic sleight of hand. Because if there is one institution which already knows everything there is to know about 'padding', that institution is the European Commission.

Karel Boutens,
Enterprise and Innovation Division



8 At the beginning of February, the Flemish government also approved a specific recovery plan for the agricultural and horticultural sector. It foresees the accelerated payment of premiums and subsidies.

9 More information relating to public-private partnerships within the framework of the European economic recovery plan can be found at http://ec.europa.eu/research/press/2009/pdf/ppp_brochure_en.pdf.

10 Publications Journal C-16 of 22.01.2009, pp.1-9. On 25 February 2009 the Commission amended the temporary framework. The consolidated version appeared in Publication Journal C-83 of 07.04.2009, pp.1-15.

11 This is support which is deemed to be compatible with EU regulations and which therefore does not need to be notified in advance to the European Commission.

12 Samyn Steven, "Relance ja, verspilling nee" (Recovery yes, waste no), in: De Standaard, 7 January 2009, p.4.

13 European Commission, DG Economic and Financial Affairs, "Economic Crisis in Europe: Causes, Consequences and Responses", European Economy 7/2009, 25 September 2009, p.2.

14 See EWI Review (3) 1: 67.

15 (anon.), "Stormloop op Vlaamse waarborgen. Dossiers verdrievoudigd. Bedragen verdubbeld" (Rush on Flemish guarantees. Applications tripled. Amounts doubled), in: De Tijd, 17 July 2009, p.1.

16 See EWI Review (1) 1: 32-33.

17 Also see elsewhere in this edition: p. 16.

18 See EWI Review (1) 1: 20 - 23.

19 See EWI Review (2) 2: 12.

How a COMPANY can really make an IMPACT

Of course, we are all trying to do our bit to combat the effects of climate change. Using the car less often, using less electricity, creating less rubbish: consciously or unconsciously, we are changing the way we live – and making these new 'habits' our own.
Almost every company – whether large or small – is similarly trying to optimise its use of energy. Even better, perhaps, they are offering us a new range of products which are more economical and more energy-efficient than ever before.
Siemens has opted for a large-scale approach to the problem. As a leading global player – with more than 400,000 employees and a turnover (in 2008) of 77 billion euros – it really wants to make its impact felt: worldwide…

160 years ago Werner von Siemens turned his attention to the great questions of his day. How can people communicate with each other over distance? How can we travel more quickly and more comfortably? How can we generate and distribute electricity? This man was not only the founder of modern telecommunications, but also had a major impact on the mass provision of electric power and the development of the railway network. His ingenuity was the basis for a multi-national company which is still a world leader in several fields.

Searching for answers

Throughout the years, the Siemens' approach has remained the same: we continue to seek for answers to the great challenges of our times. Today, the company is still active in almost every technological sector. In particular, its strategy is targeted on three mega-trends and the consequences that they may produce. These trends are: climate change (and the enormous problems that it poses for industry); growing urbanisation (and the numerous difficulties, which it creates in terms of infrastructure, mobility, safety and carbon emissions); and the ageing of the population (with its heavy burden on our healthcare services).

With these objectives in mind, the company has grouped its activities into three sectors: Industry, Energy and Healthcare. A fourth field of activity – IT – serves as a common "layer" that links the other three. Why? Because smart software is the basis for real progress in every sector. Every sector wants to be forward-thinking. Every sector wants to offer tomorrow's solutions for today's problems.

Eliminated: the carbon emissions of New York, London and Hong Kong!

As far as greenhouses gases – and in particular CO_2 – are concerned, Siemens decided to make a major effort to cut emissions. The company developed a portfolio of technological innovations specifically aimed at the reduction of gas discharge and the pollution of both water and air.

Almost every division in all three sectors – Industry, Energy and Healthcare – has contributed towards this 'environment portfolio'. In particular, the development of gas turbines, innovative solutions for traditional power stations, wind turbines, energy-efficient options for old buildings and environmentally-friendly trains have significantly diminished levels of CO_2 in the atmosphere. But the company is not planning to rest on its laurels. Continuing efforts are being made to further expand the environment portfolio. Income arising from the portfolio and the emission savings it creates are carefully monitored by Pricewaterhouse Coopers on the basis of the criteria set out in the Greenhouse Gas Protocol of the World Business Council for Sustainable Development and the World Resource Institute.

In 2008 the cumulative reduction of CO_2 discharge achieved by Siemens customers – thanks to the products and solutions from the environment portfolio, which have been installed worldwide in recent years – amounted to 148 million tons. This is equivalent to the combined annual CO_2 emission of New York, London and Hong Kong. And in the coming years the company hopes to achieve still better results through yet further technological innovation. The target? A reduction in CO_2 emissions of 275 million tons by 2011.

The Belgium-Luxemburg dimension

In 2008 Siemens employed 2,600 staff in Belgium and Luxemburg, good for a combined turnover in excess of 1 billion euros. Activities in the BeLux are focussed on the provision of services related to the company's wider portfolio, but considerable resources are also devoted to the development of specific environmental competencies, the results of which are exported to the four corners of the globe. Particular 'regional specialities' include water purification, building technology and sustainable IT solutions.

But it doesn't stop there. For example, Siemens Belgium was involved in the development of the environmentally-friendly 'Van Hool' bus: the first hybrid bus which has been produced commercially. The 'Van Hool' combines a diesel motor with an electric motor, which results in significant saving in fuel, noise and CO_2 emission. The Flemish regional bus company – 'De Lijn' – has already placed an order for 35 buses and several cities in The Netherlands and the United States are also showing interest.

Another project – implemented through the T-Power consortium – saw the construction of a 'flexible' power station with a capacity of 420 megawatt, which from mid-2011 will provide one third of the energy for the high-consumption production processes in a chemical factory. The surplus energy will be diverted to the national grid. Thanks to their low levels of carbon dioxide discharge, combined power and heat installations which generate electricity from fossil fuels are currently the most environmentally friendly option. With its yield of 57%, this gas-driven facility is one of the most efficient power stations in Europe.

Improvements in building technology can also make major contributions towards cutting overall CO_2 levels. To encourage greater energy efficiency in government buildings, Siemens has been working with Fedesco to create an energy accounting platform. Fedesco is responsible for the funding and realisation of energy-saving projects in more than 1,800 buildings with a wide range of different functions: offices, prisons, court buildings, museums, archive centres, etc. For the monitoring and verification of energy use Fedesco makes use of the Energy Monitoring and Controlling System, which can be tailor-made to suit any situation.

Not that only major companies, like Siemens, can change the world. We all have our part to play. For this reason, Siemens also supports smaller initiatives which seek to pursue the same goal, such as the Belgian Environment and Energy Prize, which rewards projects which show respect for the natural world around us. And let there be no doubt on this point: if we want to save that world, we all need to do 'our bit'.

Siemens

Free health check for your company

Does the term 'preventive business policy' ring any bells with you? This is the new policy of the Flemish government to stimulate, support and improve the financial health of the region's companies. SMEs which are having it tough during the current crisis can make use of the situation to having the workings of their company thoroughly examined by outside experts. This means that they will be ready for action when the economy picks up again…

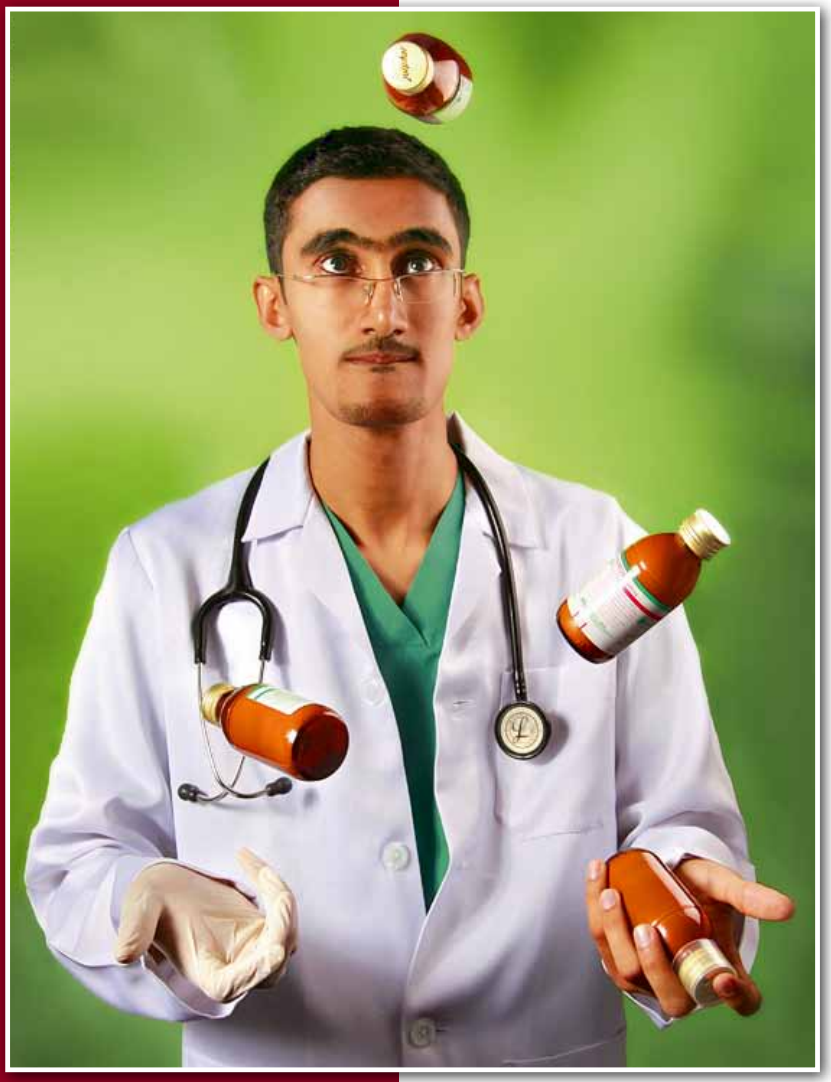
The preventive business policy consists of four stages: the sensitisation of the companies; the provision of (resources for) a diagnosis; the delineation of a progress pathway and the drawing up of a survival plan; assistance with the implementation of this plan. The Flemish Committee for Economic and Social Consultation (VESOC) set out the main guidelines for this policy. It also recommended a priority target group: companies with less than 100 employees.

Four steps to change

In autumn 2009 Flanders Enterprise[20] launched step 1 of the policy, with a number of measures designed to inform and sensitise the companies. Amongst other things, managers were referred to the European do-it-yourself test 'Protect your company in difficult times'[21], which can be completed anonymously and for free. Following on from this test, companies in the priority group had the option to have a more detailed analysis carried out. This step 2 is first and foremost a financial diagnosis of the company's current position, on the basis of which the company is allocated a colour code. 'Green' stands for 'reasonably healthy'; companies with a code 'red' are given further information about the options which exist under the federal Law for the Continuity of Companies. Companies with an 'orange' code can benefit from a scientifically-based[22] enterprise scan, which is carried out free of charge and with complete discretion.

Dependent upon the results of the scan, a first line of measures is then suggested. This may include an action plan with a number of priority recommendations or suggestions for the compilation of a survival plan. The company can seek specialist advice and/or engage a recognised service-provider to draw up the survival plan, for which partial funding can be obtained via the SME wallet (step 3).[23] In addition, there is also an EFRD[24] project which seeks to assist companies with the implementation of their plans (step 4).

In collaboration with the employer's federation, Flanders Enterprise has developed a range of similar possibilities for companies with less than 20 employees. For companies with more than 100 employees, the enterprise scan will be made available as an analysis tool. For more information or to submit a request for a deeper diagnosis: www.agentschapondernemen.be.



Ilse Boeykens,
Enterprise and Innovation Division (in collaboration with Flanders Enterprise)

20 Also see elsewhere in this edition: p. 18.

21 http://ec.europa.eu/enterprise/entrepreneurship/sme2chance/ewt/self_assessment.cfm?lg=nl.

22 The enterprise scan was developed by Flanders Enterprise in collaboration with the Vlerick Leuven Ghent Management School.

23 See EWI Review (3) 1: 5.

24 European Fund for Regional Development – see also EWI Review (2) 1: 28.

Rsrchr (smrt) sks acad prtnr (smrt, cn b yng) 2 shr knwldg

On 15 June 2009, the Dutch Ministry of Economic Affairs formally approved a new agreement for knowledge workers. Companies which are currently experiencing a dramatic fall in turnover can obtain subsidies for the detachment of (some of) their researchers to a different knowledge institution.

The economic realities of life for our northern neighbours were anything but rosy during the first half of 2009: GDP shrank in both the first and second quarters by 4.5% and 5.1% respectively, when compared with the same period in 2008[25]. It was in this gloomy economic climate that the agreement for knowledge workers was approved. The target group? Companies which employ researchers and which have experienced a fall in turnover since 1 September 2008 or expect such a fall in the near future. Under the terms of the agreement, they were eligible to apply for subsidies for the temporary (maximum 1.5 years) but full-time detachment of their surplus research personnel to another knowledge institution. The subsidy was intended to cover part of the salary costs. The knowledge institution in its turn received subsidies for reception and support.

More than just another support measure

The main purpose of this new measure was obvious: to ensure that researchers do not pay the toll for the current crisis by losing their jobs. However, the researchers cannot be transferred to just any new project. The research which they carry out, whether fundamental or industrial, must correspond to one of the social innovation themes[26] specified in the agreement, which should help to further strengthen the knowledge position of The Netherlands. In addition, the government also wanted to tackle the problem of the so-called 'lost generation' of Dutch researchers.[27] It was for this reason that the new measure offered special salary subsidies for institutions which involve young researchers in a detachment project. This should not only encourage greater knowledge transfer between the business world and the knowledge institutions, but also between experienced researchers and their younger colleagues.[28]

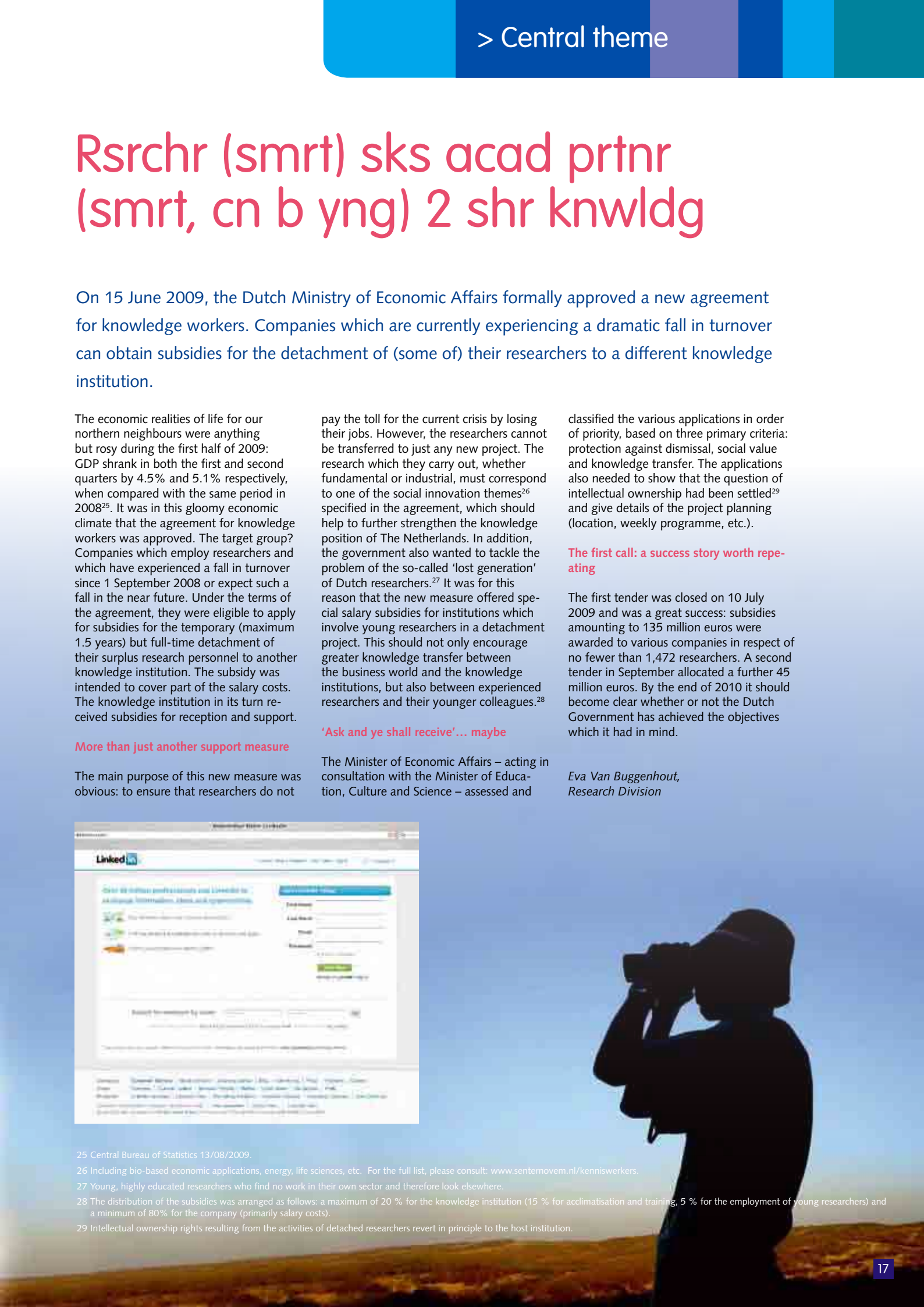
'Ask and ye shall receive'… maybe

The Minister of Economic Affairs – acting in consultation with the Minister of Education, Culture and Science – assessed and classified the various applications in order of priority, based on three primary criteria: protection against dismissal, social value and knowledge transfer. The applications also needed to show that the question of intellectual ownership had been settled[29] and give details of the project planning (location, weekly programme, etc.).

The first call: a success story worth repeating

The first tender was closed on 10 July 2009 and was a great success: subsidies amounting to 135 million euros were awarded to various companies in respect of no fewer than 1,472 researchers. A second tender in September allocated a further 45 million euros. By the end of 2010 it should become clear whether or not the Dutch Government has achieved the objectives which it had in mind.

Eva Van Buggenhout,
Research Division



25 Central Bureau of Statistics 13/08/2009.

26 Including bio-based economic applications, energy, life sciences, etc. For the full list, please consult: www.senternovem.nl/kenniswerkers.

27 Young, highly educated researchers who find no work in their own sector and therefore look elsewhere.

28 The distribution of the subsidies was arranged as follows: a maximum of 20 % for the knowledge institution (15 % for acclimatisation and training, 5 % for the employment of young researchers) and a minimum of 80% for the company (primarily salary costs).

29 Intellectual ownership rights resulting from the activities of detached researchers revert in principle to the host institution.

Flanders Enterprise

Since the beginning of 2009, entrepreneurs can seek help and advice from Flanders Enterprise. This amalgamation of the former Agency for Economy and the Flemish Enterprise Agency falls within the policy domain of the Department of Economy, Science and Innovation (EWI). The agency aims to be a driving force behind the promotion of more and better entrepreneurship in Flanders.

Agentschap Ondernemen

Enterprise is a central theme in both the government policy statement and Flanders in Action. This means that sufficient attention must be devoted to entrepreneurship, innovation and internationalisation.

As far as innovation is concerned, the expertise of the Flemish government is concentrated in the IWT. The process of internationalisation can rely on the best efforts of Flanders Investment and Trade[30]. Until 2009, two separate Flemish agencies occupied themselves with enterprise-related matters: the Agency for Economy[31] and the Flemish Enterprise Agency[32]. In order to improve efficiency, effectiveness and user-friendliness, the Flemish government decided to merge these two agencies in January 2009. And so Flanders Enterprise was born.

The guiding hand of a director…

Flanders Enterprise wishes to encourage entrepreneurship and to contribute towards its further development. Running parallel with this process, the new agency also seeks to improve the competitive position of Flemish companies and to assist in the creation of the right framework conditions for the stimulation of entrepreneurship. It goes without saying that the agency also endeavours to support the policy emphases set by the Flemish government, such as the need for a 'greener' Flemish economy. Flanders Enterprise lends companies a guiding hand in the shape of various support measures and the provision of information and advice about 'greener' ways to run a business.

In order to create more and better entrepreneurship, Flanders Enterprise acts first and foremost as a kind of director. It encourages and stimulates the other actors – employer's federations, local authorities, etc. – to adopt a business-friendly policy and to initiate projects that can stimulate entrepreneurship.

… and the understanding of a fellow actor

In addition, Flanders Enterprise also has a role to play as a fellow actor alongside the employer federations and local authorities, complementing their roles and actively supporting companies with information and advice. Key tasks in this respect include: opinion-forming and sensitisation; the provision of concrete details and guidance relating to the different aspects of sustainable entrepreneurship, in particular through the promotion of the government's supportive instruments; the stimulation of enterprise in Flanders through the judicious use of subsidies; and the implementation of government policy initiatives.

Inform, advise, sensitise

The agency's multi-disciplinary team of experts offers information and advice to companies on the most suitable types of government support, and this in relation to five specific themes:

- *Strategy and development: from start-up to take-over*
  About the commercial-economic aspects that can strengthen the innovation and growth potential of a company; about the necessity to draw up a company plan; about the feasibility of certain activities.

- *Financing: resources and instruments*
  Helping to find the best method of finance; smooth access to resources and instruments.

- *Premises: location, expansion and relocation*
  The agency creates space (literally) for enterprise and supports the active and sustainable development of sites for commercial and industrial use. Entrepreneurs are given guidance when searching for suitable premises for the location, expansion or relocation of their company.

- *The company and its processes: sustainability and efficiency*
  Support for the sustainable and efficient organisation of internal structures and processes: ICT, energy and eco-efficiency, investment in environmentally-friendly projects. Promotion of design as a strategy for modernisation. Greater awareness of the importance of intellectual property rights.

- *Regulations and permits: integrated contact point*
  The agency guides companies through the maze of administrative requirements and permit applications, and seeks to heighten awareness about standards and norms, as well as the options for obtaining certificates of approval and/or recognition.

Subsidy envelope and policy missions

The agency has at its disposal a subsidy envelope of some 300 million euro which it can use to support companies and business federations: the SME wallet, the ecology premium, strategic training and investment support and compensation for disruption caused by public works. Flanders Enterprise also seeks to stimulate entrepreneurship through project-based support, for example through its enterprise call, its call for company sponsors and 'godparents', and its call for bridging projects relating to economic education[33]. It also wishes to help create adequate and appropriate space for enterprise by offering assistance for the development of industrial sites[34] and buildings.

Flanders Enterprise is also called upon to fulfil a number of specific policy missions that are related to its core mission. For example, the agency implements a specific policy targeted at companies in difficulties (preventive business policy[35]); it supports the work of the Brownfield Cell and the development of 'points of single contact' within the framework of the EU Services Directive Guideline; it draws up specific progress pathways for (new) entrepreneurs in the field of child day-care; it contributes towards the Gazelle Leap[36], which encourages the internationalisation of fast-growing companies, etc.

Looking ahead

The agency also administers the EFRD programme[37] in Flanders. This programme assists the further stimulation of the knowledge economy, entrepreneurship, and economy-minded town and country planning. This involves close collaboration with the provinces and the cities of Antwerp and Ghent.

Transnational collaboration in the same fields is similarly stimulated through the various INTERREG programmes[38]. Furthermore, as a contact point within the Enterprise Europe Network the agency, working in collaboration with the IWT, helps to promote international business and trade.

In the future[39] Flanders Enterprise will continue to expand its services to entrepreneurs and companies, in close collaboration and consultation with business federations, local authorities and other actors in the relevant domains.

Bernard De Potter,
Flanders Enterprise

For more information:
www.agentschapondernemen.be

30 See EWI Review (2) 2: 47.
31 See EWI Review (2) 2: 28.
32 See EWI Review (1) 1: 31.
33 See EWI Review (2) 2: 44 – 45.
34 See EWI Review (1) 2: 9.
35 Also see elsewhere in this edition: p. 16.
36 Also see elsewhere in this edition: p. 7.
37 See EWI Review (2) 1: 26 – 27.
38 See EWI Review (2) 3: 24 – 25.
39 This article was written before the finalising of the policy statement 'Economy' for the period 2009-2014 and therefore does not reflect any new policy missions which this statement may allocate to Flanders Enterprise.

“We are all on the Titanic, even though some of us are sailing first class...”

An interview with Jean-Claude Burgelman

Jean-Claude Burgelman first joined the European Commission in 1999 as a visiting scientist at the Joint Research Centre (the Institute of Prospective Technological Studies - IPTS). He became head of the ICT unit in 2005. In January 2008 he was appointed as a member of the Bureau of European Policy Advisers, as the adviser for innovation policy. Since the end of last year he has also acted as an adviser for ERA governance at DG Research. In other words, he is the ideal man to ask[40] about the role of science and innovation in Europe and about our urgent need for greater rationality and creativity. The opinions and points of view expressed in this article are not an official communication of the European Commision.

The European Commissioner for Science Policy, Janez Potocnik, recently put forward a new strategic vision under the title ‘The New Renaissance’. Can you explain to us how such a vision is developed? And what should we expect from this new renaissance?

“The applied mechanism for the creation of this vision is fairly straightforward. In this instance, the matter at issue was the future of the European Research Area (ERA): the development of research and science policy at a European level. In order to devise an appropriate strategy for ERA, the European Research Area Board (ERAB) was set up in 2008. This allowed us to bring together a contentwise representative number of high level experts – 22 in this case – from the broad field of scientific policy, but with differing backgrounds in industry, government and the academic world. These persons are all very experienced in the field and creative enough to think about matters at a European level without being constricted by the prejudices of their own particular context. After several meetings and much intense discussion, the group reached a synthesis. ERAB christened this synthesis ‘The New Renaissance’: the search to achieve a sustainable growth model based on science and technology.”

Is Europe missing its date with destiny?

But how did this vision come about ?

“When we started, the focus of the ERAB was primarily set on the impact of globalisation on science. ‘Excellence’ no longer means being excellent in comparison with your neighbouring countries or traditional challengers, but in comparison with China, Taiwan or Brazil. A second important element is the digitalisation of research: ever greater use is being made of digital networks and simulations. Taken together, these two elements mean that in future much more science will be practiced in the world. This is already happening: the process of globalisation means that many more people are already becoming active as researchers, while the digitalisation means that they can work much faster and be significantly more productive. The question which ERAB asked itself was: ‘How can Europe continue to play a significant role in this process and how can we maintain our

standards of excellence in the future?' While ERAB was occupied with these matters, the crisis burst upon us in full. Our group quickly came to an important realisation: not only was science being subjected to changes brought about by the crisis, but the entire world was also standing at a crucial turning point. We realised that we can no longer continue to grow in the same manner as before. To meet (amongst other things) major new ecological and demographic challenges – major because of their scale, inter-connection and multi-disciplinarity – we need more science and technology. And this implies that we also need more rationality and creativity – the essence of science.

On the basis of this analysis, ERAB drew up the strategic view entitled 'ERA 2030', which developed six key policy pillars. This report pleads for an open European research area oriented towards the world, in which researchers and ideas can circulate freely. This must also include a permanent interaction between science and society, since, in addition to excellence, we must always pay sufficient attention to social requirements. Moreover, it is equally necessary to stimulate collaboration between private and public actors through the process of open innovation.

'The New Renaissance' is therefore not only a plea for a new, responsible manner of growth and co-operation, but also an appeal for a new way of working with science and technology; using them as instruments to meet new challenges. If we react promptly, they will help to bring us out of the crisis. In particular, we can look forward to the positive effect of new growth sectors, such as green technology and technology for health care."

Proactive wallpaper and talking hands

If we mention new growth sectors, we arrive almost automatically at the concept of 'Ambient Intelligence'.

"In a previous life I was a researcher in ICT. With the IST Advisory Group (ISTAG) of DG INFSO, we at IPTS collaborated on the development of a vision of the future for the so-called information society. This process led to the coining of the term 'Ambient Intelligence' (AmI), a concept which was launched at the end of the previous century, just before the internet really burst onto the scene.

Ambient Intelligence relates to ICT applications which are invisibly bedded in our environment and which can carry out useful tasks proactively – in other words, without the need to be instructed. This was a truly revolutionary idea at the end of the 1990s. The AmI vision postulated that we would evolve towards an intelligent environment by the year 2015. An example of the kind of thing we meant is 'smart dust': intelligent dust particles which work as a kind of network, so that it becomes possible to develop intelligent wallpaper, intelligent carpets, etc. The possibilities are almost limitless. For instance, if you walk into a room, your smart environment would have the ability to recognise you. It could then offer you a whole range of useful information: 'Good morning, nice to see you,' or 'Today, you need to carry out the following tasks,' or even 'Your tea will be ready at six o'clock!'"

> **"The primary task of the government must be the creation of appropriate boundary conditions."**

Were concrete applications of this kind ever developed?

"AmI was never realised in the manner in which we predicted. Even so, recent technological developments, such as the arrival of Web2.0, still offer a wide range of interesting possibilities. 'Location based services', for example: you arrive in a city and your smart phone tells you that your favourite band is playing at this or that venue, and that tickets are still available. This kind of scenario is not yet standard, but it is already technically feasible. In this respect, I am also reminded of a recent demonstration given by Pattie Maes, a Brussels researcher at the Massachusetts Institute of Technology (MIT), about the possibilities offered by the 'sixth sense'[41]. For example, using infra-red technology, it is theoretically possible to project a telephone keyboard onto the palm of your hand, which you can actually use to call people. According to Maes, this could be quite easily and affordably developed. Technological predictions on Ambient Intelligence dating from 10 years ago have been realised to some extent, but not always in the manner that we had imagined. For example, the simple idea of Amazon.com – whereby the purchase of a book is correlated with the ideas of a hundred other people about that same book – is what was then called 'social ICT'. But in many other fields there is still a long way to go. We still haven't got 'smart dust'! But our high performance networks and continuing advances in miniaturisation mean that we do now have the potential to realise AmI through these alternative channels. The computer as we know it today will gradually be replaced by a smart phone-based version (with infra-red projection of the keyboard, for example). Miniature systems will continue to become even smaller (or 'invisible'), high performance networks even more sophisticated, with more services and more smart applications. Believe me, it is all going to happen – and sooner than we realise."

Nowhere is free of ICT!

Does this kind of technology also have disadvantages?

"I work on the assumption that everything which is technologically possible will most probably be realised one day. History offers us few examples of innovations which were not implemented, simply because they were deemed to be morally repellent in advance. But the ethical implications of a 'young' technology are often difficult to assess.

Our great challenge is therefore not a technical one – what is technologically possible (in ICT) – but is rather to determine exactly what we want to achieve with our technology. For example, from a technological point of view, 'big brother' is already a real possibility: all kinds of different digital traces of human behaviour exist and can be clustered. The question is simply how far do we wish to go? Often a straightforward 'yes' or 'no' will not suffice. In certain cases, society wants far-reaching applications – for example, to apprehend terrorists. But in other cases we are more reluctant.

Viewed from a 'narrow' ICT perspective, the biggest policy problem – in my opnion - therefore seems to be the question of privacy: how can my personal details be used and who is controlling that use? This is an important issue which is not debated as frequently or as openly as it should be.

A future convergence of the bio-sciences, ICT and the cognitive sciences will raise such issues to a higher level. Imagine that we have a biological or genetic passport in our watch, which can be activated by a simple press of a button. In the event of an accident, we would all want the emergency services to be able to help us as quickly as possible. But this means that they need access to all kinds of personal details: blood group, medical history, etc. Alternatively, it may be possible to deliver first aid from a distance, thanks to microchips that are implanted in our body. Many similar applications are being developed or will be developed in the near future, with all the advantages and disadvantages that this implies. These applications all infringe our privacy, but also raise important questions

about personal identity. To what extent do these types of convergent applications affect that identity and our self image?

However, the most important fact is that none of us can escape these developments. Nowhere is free from ICT. There is hardly a place in the world – even the remotest island – which is outside the digital scope. In the mobile world in which we live our telephone, our computer, our messages, our viewing preferences, our buying preferences and most of our movements are all being registered somewhere – whether we like it or not."

Slow ICT, for a better quality of life

In another article you break a lance for slow ICT. What exactly do you mean by that?
"Slow ICT is another way to approach 'Ambient Intelligence'. Our thinking about information technology is often reduced to what I have described as the 'fast food' model: how can we perform our activities faster, better and more efficiently? Today's global challenges demand that we approach things differently. The past has shown that the use of ICT simply to achieve greater speed and efficiency often leads to more problems than it solves. Hence my plea to leave the 'fast food' path. ICT should aim to improve the quality of our life – not just speed it up. We need slow food, slow growth and… slow ICT."

But isn't it true that the rapid process of globalisation, made possible by ICT, is actually responsible for the 'faster-better' approach?
"There is a difference between the driving forces of change – such as globalisation – and the effects of change. The effect is fast food behaviour, which keeps us locked into the logic of hyper-consumption, hyper-growth and hyper-efficiency. Consider the use of ICT in healthcare, for example. The hyper-efficient approach means that we fit out patients with all different kinds of sensors, so that they can be permanently monitored. As soon as a problem arises, a machine takes the necessary corrective action. A 'slow food' approach is based on the sustainability and quality of life. The technology stays the same, but the monitoring functions are installed at home, so that people can live longer independently. In other words, the manner in which the technology is applied creates a different effect.

> **"It's not a plea for an anti-growth model, but for a different growth model."**

I realise that these matters are by no means easy. We not only need to show that the old way of doing things no longer suffices, but also need to offer convincing new ways. Yet in some respect, the logic is surprisingly simple. We will soon be a planet of 9 billion people. We cannot keep on producing two cars for every person, just to ensure job security! We need to develop a sustainable growth model. By thinking carefully about what we can do with the technology at our disposal, there are many more options available to us than we are currently using today. And so we return to the 'New Renaissance'. The challenges are there. We will not solve them by simply carrying on as in the past. Nor will these problems go away of their own accord. CO_2 emissions, climate change, the exhaustion of natural resources, demographic change – all these problems are the same for all of us. We are all sailing on a Titanic of mega-challenges – even though some of us are sailing first class."

Everything can be different

During the original Renaissance, the enlightened minds were confined to the social and economic elite. Is there sufficient popular support in today's world to allow the ERA to flourish?
"Let's stay with our 'fast food – slow food' metaphor: it is not a question of not eating or only eating vegetarian: our food is still as tasty as ever. But it needs to be produced differently, with respect for the ecological and socio-economical environment in which it is nurtured. And it needs to be consumed differently. The slow food metaphor is not a plea for an anti-growth model, but for a different growth model.

Besides, do we really have a choice? It is impossible to apply the hyper-consumption model of the 1950s in a manner that will create prosperity for 9 billion people! Just think of all the plastic rubbish which is already floating in the Pacific Ocean: a floating island with a surface area at least as large as France, Spain and Portugal combined – and getting bigger all the time! But there are also some positive signals. In the recent debate about the Opel factory in Antwerp, a number of voices were raised to suggest that the car of the future should be built there. It is important that these ideas are being expressed by the ordinary man and woman in the street. But to say that everyone is already on the

Who is Jean-Claude Burgelman?

Jean-Claude Burgelman graduated in social sciences (he achieved his doctorate in 1986) and in science and technology policy (MA 1991) at the Free University of Brussels (VUB), where he still lectures on the global aspects of the information society. Until 2000 he was professor of communications technology policy at the VUB and chairman of the Communications Sciences Faculty. He created 'Studies on Media, Information and Telecommunication' (SMIT), a multi-disciplinary research centre which forms part of the Institute for Broadband Technology (IBBT). At the university, he was closely involved with science and technology assessment.

> **"Excellence no longer means being excellent in comparison with your neighbouring countries, but also in comparison with China, Taiwan or Brazil."**

same wavelength would probably be an exaggeration.

Hence the link with the Renaissance: there must be a belief that science and technology can find the answers, instead of creating problems. A lack of faith in this belief explains, for example, why 'Google' type initiatives frequently originate in the United States, and seldom here in Europe. The New Renaissance wishes to emphasise the rationality and creativity of science in order to strengthen confidence in the possibilities which it opens to us."

What does a small region like Flanders need to do in a world dominated by globalisation?
"Small is a relative term. In terms of surface area, Silicon Valley is also small, but its achievements are great. If we can perform to the same high standard, nobody will bother to ask how big we are. And the key to successful performance is to explore the challenges fully and adopt the best possible position to meet them.

On the one hand, I am convinced that in today's world a government should not steer too restrictive a course with regard to research topics. A top-down approach no longer seems appropriate, due to the large number of additional active scientists and the related structures which have appeared in recent decades. Moreover, science and technology itself has become too complex and dynamic, so that the imposition of top-down choices risks being counter-productive. A decision to push a so-called 'technology winner' can often turn out to be the wrong option. An outstanding example of this is the tenacious preference in France for the French Minitel system, while the rest of the world was already evolving towards the internet.

Most innovation economists agree that the primary task of government must be the creation of appropriate boundary conditions: the knowledge environment, the financial parameters, researcher mobility, etc. On the other hand, in view of the great challenges facing the world today, it is difficult to imagine any government practising a completely 'hands-free' attitude. When applied to Flanders, this boils down to a policy whereby the government 'steers' the research community towards those areas that link up with its own global societal priorities.

In the short run, the Flemish government, like any other government, has to vigorously address the (future) fall-out of the worldwide crisis on its R&D stock. Each research grant which is not prolonged must be regarded as a lost knowledge investment, with a corresponding loss of expertise and skills. Countering the effects of this knowledge loss seems to me to be an essential task for the government. The old saying that you should 'never let a good crisis go to waste' applies equally for Flanders."

What message do you have for Flanders?
"That is the billion euro question, isn't it? Based on the thread of my story so far, I would like to suggest three basic principles which Flanders needs to apply.

First of all, the future is global. We cannot escape the fact that our choices and decisions are made in a global setting. For example, in Saudi Arabia the king is reported to have personally invested around 1.8 billion euros in the construction and start-up of the King Abdullah University of Science and Technology. The aim is to develop this university into a research institute of world renown. If we in Flanders want to compete in the same league, we will need to take such factors into account. We must strive to achieve excellence at world level!

Secondly, we need to achieve this same excellence in the Flemish education system: the only basic resource with which we can compete globally are our brains! But we need to excel, and this requires, among other things, an excellent research infrastructure. By this, I do not simply mean academic excellence, but also technical excellence, including arts and crafts. Once we were the world masters in tapestry weaving, a craft which not only requires excellent brains but also excellent hands. In a future Flanders of services, smart hands will be just as important as smart brains.

Finally, the future will force us to make choices. The government can no longer bet on every horse in the race. These choices must attune with societal priorities and global challenges. There is little point, for example, in Flanders developing excellence in technology for drilling for oil at the North Pole. But if Flanders aspires to become a key player for sustainable logistics in Europe, it seems equally obvious to me that we should no longer bet on more efficient transport in greater concentrations, but instead should focus on lower levels of slower and cleaner transport, with greater added value for the medium term."

Karel Goossens,
Research Division
Peter Spyns,
Strategy and Co-ordination Division

He was a visiting professor at the University of Antwerp, the College of Europe in Bruges and the University of South Africa. He is a member of the editorial boards of various important scientific journals in the field of the information society, such as *Communication and Strategies; Telematics and Informatics; Media, Culture and Society;* and Telos. He is also a member of the scientific board of directors of the Communication Policy Research Conference (CPR), and he chairs one of the 70 the Global Agenda Councils of the World Economic Forum, namely the expert group on innovation.

40 The ideas and points of view expressed in this article are his own and cannot be regarded as an official communication by the European Commission.
41 See www.ted.com/talks/pattie_maes_demos_the_sixth_sense.html

Flanders and the post-2010 Lisbon strategy

The Lisbon strategy (not to be confused with the Treaty of Lisbon, relating to the workings and the competencies of the EU) dates from March 2000. During the meeting of the European Council held in Lisbon the European leaders and heads of states agreed that by 2010 the EU must become "the most competitive and dynamic knowledge economy in the world, which must be capable of sustainable economic growth, with more and better jobs and tighter social cohesion." What has happened since then?

In order to reduce the performance gap between the EU and the US and Japan in certain fields, it was agreed that the member states should attune their policies to the stated objectives. In the years which followed the strategy was amended, extended, refined and consolidated. In this manner, for example, the 2002 European Spring Council meeting in Barcelona decided that in global terms 3% of GDP[42] should be devoted to research and development by 2010.

The revised Lisbon Strategy

During the early years it became apparent that the member states were either making little progress or that the strategy was failing to produce tangible results. Perhaps the necessary impulses were missing? A high level group drew up a report on these matters in 2004, following which attempts were made to breathe new life into the strategy.

How could the member states be persuaded to try harder to achieve the global objectives, both at national and European level? A number of decisions intended to galvanise the process were taken at the Spring Summit in 2005: more focus in the strategy, a less heavily-laden agenda, better co-ordination, fewer inconsistencies. More importantly, it was agreed that a new start should be made, both in terms of a revised content and a better methodology, with the focus now being restricted to just two main priorities: growth and jobs. At the Spring Summit in 2006 four specific sub-areas for priority action were identified: knowledge and innovation; unlocking business potential (particular with regard to SMEs), improving employability for priority categories; and an energy policy for Europe.

A new method and a new impulsion

In order to give a new impulse to the Lisbon Strategy, a new methodological approach was introduced in 2005, based on a three-year cycle (2005-2008 and 2008-2010). By the beginning of each cycle, each member state is required to draw up a national programme of reforms on the basis of a set of 24 integrated guidelines. These guidelines can be divided into three broad categories: macro-economic, micro-economic and employment policy. For the EU level, the European Commission drafts a Community Lisbon Programme with 10 stated objectives.

One crucial feature of the new arrangements is the requirement for member states to submit an annual progress report to the Commission by 15 October each year, containing a summary of the measures and budgets which were devoted to the realisation of their national reform programme during the preceding period. The Commission publishes a summarised version of these reports, with recommendations and points-to-watch for the individual member states. These are given to the EU heads of state or government at the European Summit in December each year for confirmation and ratification.

These arrangements also have consequences at the Flemish level. In view of the division of competencies in our country, a number of the relevant measures and budgets fall under the exclusive competence of the Communities and Regions[43]. The Flemish government subscribed to the conclusions of the Lisbon Summit as early as 28 April 2000 and decided to take action promptly. In March 2001 the Flemish Parliament adopted the first Flemish Lisbon Strategy progress report. In November of the same year the Flemish government and the social partners signed the so-called Vilvoorde Pact, with '21 objectives for the 21st century.'

This pact was a translation of the Lisbon Strategy at Flemish level. As well as its own regional Lisbon report, Flanders also makes an essential contribution towards the federal Lisbon report. Moreover, since 2005 the Flemish government draws up a triennial Flemish reform programme. Flemish representatives also take part in an annual bilateral meeting with the European Commission to discuss land-specific points-to-watch. In addition, Flanders is closely involved with the Lisbon Monitoring Platform of the EU Committee for the Regions. Over the years and as a result of these various levels of commitment, Flanders has made significant progress toward achieving many of its objectives, although in some areas much work still remains to be done.

A new cycle

The last of the Lisbon cycles (2008-2010) is now drawing to a close. Partly as a result of the crisis, much attention is currently being focused on the future. The European Spring Summit of 2008 asked the Commission, the Council and the national Lisbon co-ordinators to start thinking about the period after 2010. And indeed, the member states, think tanks, academics, politicians, lobbyists have all given much thought to this matter. Flanders has also taken an active part in this process, in view of the crucial importance of the strategy for our economy and our society.

In the spring of 2009 the Committee of the Regions asked its members for opinions and information about both the methodology (aspects such as governance, the ability to influence preparations and implementation, follow-up, the realisation of objectives, etc.) and the contextual focus. Flanders has made a formal contribution to this consultation process. In autumn 2009 discussions on post-Lisbon strategy started within the Commission and in the thematic bodies of the Council. A new framework for the coming years (the EU 2020 Strategy) will be approved at the March 2010 Spring Summit in Madrid.

Importance for EWI

Within the EWI policy domain, there are many themes and initiatives originating from Europe which fit within the framework of the Lisbon Strategy. And their number and their importance will continue to grow in the future. Examples? The European Research Area; the Small Business Act; initiatives within the framework of articles 169 and 171 of the EU Treaty (technological initiatives such as ENIAC, ARTEMIS, etc.); the strengthening of research infrastructure; the discussions about the Community Patent; the Cluster Memorandum; the stimulation of entrepreneurship (also in higher education); the 8th Framework Programme for Research and Technological Development; the Framework Programme for Competitiveness and Innovation[44]; the general strengthening of competitiveness and the industrial base; the Structural Fund policy[45]; the international mobility of researchers; the EU Innovation Action Plan, which the Commission will be putting forward in 2010; etc.

EWI is also involved in the debate about the methodological aspects: for example, the current indicators are strongly aggregated (GDP/head of population) or input-based (3% of the Barcelona objective), but put too little emphasis on output and outcome[46]. As a result, the objectives/indicators do not always correlate well with the guidelines. Some refinement is necessary.

Making the future now

The EU and its member states are facing major challenges, both in terms of issues and budgets: the ageing of the population; the energy problem; continuing globalisation; the evolution towards a knowledge economy and a knowledge society, in which sustainability, innovation and the application of 'clean' technology will assume an increasingly important role. In the debate about future priorities and actions, the EU must take decisions which offer the best prospects for solutions in the long term. With the signing of the 2020 Pact at the beginning of 2009, this process has already been initiated for Flanders.

Niko Geerts,
Strategy and Co-ordination Division

More information?
All documents, information and links relating to the Lisbon Strategy can be found on the Flemish Lisbon site: http://www.flandersinaction.be/nlapps/docs/default.asp?id=583

42 See EWI Review (1) 1: 15-17 and (1) 2: 32 - 37
43 See EWI Review (1) 3: 8 – 10
44 See EWI Review (2) 1: 30 – 33
45 See EWI Review (2) 1: 28
46 Also see elsewhere in this number: p. 3

Brussels: from a divisive element to a trump card in the global economy

In the global economy, large cities increasingly act as a magnet for the attraction of talent and enterprise. Brussels is one such magnet. As the fulcrum of European decision-making, the city has everything it needs to increase that attractiveness still further. With this aim in mind, the various employers' federations have devised a collective development strategy: 'Business Route 2018 for Metropolitan Brussels'. A unique aspect of this strategy is the fact that it transcends Belgium's internal regional borders: the surrounding Flemish and Walloon hinterlands are also covered by the plan.

The Brussels metropolis has always had an important motor function in the economy of our country. In view of the involvement of three different regions in the development of the zone, the various inter-professional employers' federations – VOKA for Flanders, BECI for Brussels and UWE for Wallonia – decided to join hands in order to formulate a vision and an action plan which will contribute towards new socio-economic impulses for the Brussels Metropolitan Region (BMR).

International benchmarking: a vicious circle threatens

Several geographical studies[47] have shown that the socio-economic interaction of the Brussels Capital City Region is most pronounced with large parts of the districts of Halle-Vilvoorde and Nijvel. However, this socio-economic interaction is negatively influenced by the difficult political relationship between the various governmental authorities which are responsible for these areas. The employers' action plan hopes to transcend this political fragmentation with a common vision for the entire zone.

On the basis of an international comparison with 14 other European city-regions, supplemented by a detailed survey of employers and managers 'on the ground', the relative strengths and weaknesses of the Brussels Metropolitan Region were brought into sharper focus. The European benchmark study categorises BMR as an economic top region. Productivity is extremely high, but growth in the region is moderate rather than spectacular. Since 2001 there has hardly been any net creation of jobs. Economic growth has largely been driven by knowledge intensive (as opposed to labour intensive) sectors and niches. In terms of financial services, post and telecommunications, Brussels ranks amongst the 'best performers' in Europe. The political sector is also strong within BMR, but local services such as catering, leisure, tourism, trade and transport are all performing below international standards.

Will it be possible to maintain this knowledge intensive growth once the international 'war for talent' well and truly breaks out? A shortage of talent and a lack of dynamism in local services threatens to create a self-perpetuating downwards spiral – a spiral which must be broken at all costs.

A vision, three spearheads and a sustainable base

Based on the proposals put forward by no fewer than 150 company leaders, a plan for the future was drafted, which builds on Brussels' trump cards and focuses on a development strategy built around three key spearheads:

- The development of BMR from an administrative centre into the beating heart and pulsing brain of Europe;
- The exploitation of BMR's expertise in global growth niches, with a focus on financial services, ICT, life sciences, healthcare and logistics;
- The development of BMR as a vibrant pole of attraction for talent and business.

In order to transform this growth strategy into a tangible and lasting success, the plan foresees the creation of a sustainable base: the encouragement of local talent through appropriate education and training, and the stimulation of relevant private initiatives in these fields; the drawing up of a master plan for mobility and spatial planning which covers the entire metropolitan area; the development of a competitive fiscal regime and a flexible labour market; the more efficient administrative organisation of the zone; an improvement in the general quality of life through a focus on sustainable energy use and sustainable mobility.
With a view to developing concrete actions to fill in these strategies, a separate project organisation unit was set up in the autumn of 2009. The work of this unit is aimed at the stimulation of economic activity, in the first instance by the business community itself. The relevant government authorities have also been asked to co-operate in the creation of a healthy business climate, which in turn can promote the creation of new companies and new jobs in the Brussels Metropolitan Region.

Jan Van Doren,
Deputy-Director VOKA Knowledge Centre,
Board member, VOKA Committee - Brussels

For more information, please consult: www.metropolitanbrussels 2018.eu

47 The international benchmarking focused on administrative districts (arrondissements), since these were the only reference points for which adequate statistical information was available. There is also an interaction with other parts of the country, such as Leuven, Antwerp or Namur, but these interactions have a different dimension.

trio.be

The Belgian presidency: something to write home about!

In the second half of this year, Belgium will assume the presidency of the European Union (EU) for the twelfth time. But what exactly does this presidency involve? And what does it mean for Flanders? And – more concretely – what does it mean for the Department of Economy, Science and Innovation (EWI)?

One thing is already certain: this will be no ordinary presidency. To begin with, Belgium forms part of a triumvirate: it will be necessary to work closely with both Spain and Hungary. Moreover, the Treaty of Lisbon came into force on 1 December 2009 and will have an influence on the Belgian and all other future presidencies[48].

European presidency: more than just protocol

Presidency of the European Union means, first and foremost, presidency of the Council of Ministers. This is probably the most important decision-making body of the EU, where ministers of the member states discuss European legislation and common strategies relating to all aspects of policy. The Council is also responsible for approving proposals by the European Commission (EC), together with the European Parliament[49].

The Council is usually made up of the foreign ministers of the member states, although the precise composition will depend upon the subject under discussion. In concrete terms, there are no fewer than nine separate Council formations[50]. For example, matters relating to research and industry are discussed in the Competitiveness Council. Research-oriented issues are prepared beforehand in CREST (Scientific and Technical Research Committee), the Research Workgroup, and COREPER (Committee of Permanent Representatives). For the Flemish ministers, preparatory work is carried out by a team of officials and the members of the Flemish Permanent Delegation (ambassadors and attachés) to the EU.

As president, a member state can exercise an important influence on the preparation, negotiation and acceptance of Council proposals. This allows the president-country to stamp its imprint on European policy as a whole. Before the Treaty of Lisbon came into force, the European Council also fell under the rotating presidency of a member state. With the ratification of the Lisbon Treaty, two new top functions were created which will take over some of the responsibilities previously held by the rotating president-state.

This means, for example, that the EU's new president, Herman Van Rompuy, will chair the European Council for the next 2.5 years and that the new high representative of the union for foreign affairs and security, Catherine Ashton, will chair the newly created Foreign Affairs Council.

Both these new top functions will represent the European Union in its dealings with the rest of the world in matters relating to common foreign and security policy.

Typically Belgian!

The specific division of powers in Belgium makes the organisation of its representation in the various ministerial councils far from simple. The composition of this representation will vary depending upon the nature of the council concerned and the matters under discussion. The deciding factor will be whether or not the matter under discussion is an exclusive competency or a competency shared between the federal government and the regions (see Table 2).

In this respect, it is important that the responsible minister must represent the standpoint of Belgium as a whole, and

Tabel 2: Belgian representation in the Council formations

Category	Council formation	Representation
I	General Matters, Economic and Financial Affairs, Budget, Justice, Telecommunications, Consumer Affairs, Development Co-operation, Civil Defence	Exclusively federal[51]
II	Internal Market, Public Health, Energy, Transport and Social Affairs	Federal representation with a regional assessor
III	Research, Industry and Environment	Regional representation with a federal assessor
IV	Culture, Education, Tourism, Youth Affairs, Housing/Spatial Planning/Regional Policy	Exclusively regional representation
V	Fishing	Exclusively Flemish representation
VI	Agriculture	Federal representation, assisted by the competent ministers of the Flemish and Walloon regions

not simply the view of his/her particular government. In order to reach such a common position, it has been necessary to set up an extensive inter-governmental consultation structure. If it is not possible to agree such a common position, Belgium will abstain from voting on the matter in question.

As far as the representation of the different Belgian governments in the various presidencies is concerned, it has been necessary to devise a rotation system. During the eighteen months of the tripartite presidency the same representation will be maintained, instead of the usual six-monthly rotation.

For research matters, the Brussels Capital City Region (BHG) will represent Belgium in the Competitiveness Council. For industry, the representation has been allocated to the Walloon Region/French Community. Flanders will represent Belgium in the Councils for Environment, Education, Youth & Sport and Fishing. In the research policy domain Flanders will also be able to organise high-level, high-profile events – in agreement with BHG.

Spain – Belgium – Hungary: a trio with brio?

The EU presidency lasts for a period of six months, either from 1 January to 30 June or from 1 July to 31 December. The presidency is passed on to a different member state at the end of each six month period. A new and unusual feature of the Belgian presidency is that it takes place within the framework of a tripartite presidency. In other words, the next three presidential countries are expected to collaborate more closely together than has sometimes been the case in the past. In this manner, it is hoped that the programmes of the successive president-countries will be better attuned to each other. Our country must collaborate with Spain (first half of 2010) and Hungary (first half of 2011).

The common programme of the tripartite presidency was approved by the European Council at the end of 2009. In addition to these shared priorities, each successive president-country has the opportunity to put forward its own themes. The concrete content of the Belgian programme, which must bear in mind the policy priorities of the new Flemish government, will be the subject of discussions beginning in the autumn of 2009.

The Belgian vision for research and industry

Within the Research Council, Belgium will put forward the following specific priorities:

1. *The strengthening of the European Research Area.*
   Belgium wants to improve co-operation between the member states and with private actors in order to meet the great social challenges of our times (climate change, food sufficiency, etc.). Further collaboration is also necessary to remove administrative restrictions and hindrances for international research workers.

2. *The evaluation and revision of the Lisbon Strategy* with regard to research. Amongst other things, Belgium wishes to evaluate and discuss the 3% target for investment in research and development.

3. *The role of Research, Development and Innovation in the realisation of a sustainable society.* In this respect, the three conferences organised by the EWI Department – focussing on the challenges faced by the research and development community for the creation of a viable economy in the long term – will be central (see the summary of events below).

In addition to these three vertical themes, the role of the regions in R&D policy is an important horizontal priority.

Belgium also intends to colour the agenda in the Industry Council:

1. *SMEs* are the first important focus. Key issues are the simplification of the procedures which give access to European research activities and the follow-up of the Small Business Act, which aims to promote entrepreneurship and to streamline the administrative obligations of SMEs.

2. *Sustainability* is another top priority. Key concepts are the 'green economy' and 'eco-innovation', with the outcome of the post-Kyoto negotiations as a starting point.

3. An evaluation of the policy initiatives relating to clustering[52] and competence poles[53] must provide input for a *new European innovation policy plan.*

Flemish accents

Flanders started its preparation for the Belgian presidency as early as autumn 2008, when it first considered matters for possible inclusion in the presidency programme. This not only resulted in a provisional list of priority themes for each area of policy, but also in a set of five co-ordinating guidelines: sustainable development[54]; a revised Lisbon Strategy after 2010[55]; social inclusion (2010 is the European year for combating poverty and social exclusion); climate, energy and the environment; greater involvement of the regions and their citizens in the activities of the European Union.

A sustainable approach

Following in the footsteps of Austria and France, Belgium will also seek to organise its presidency in a sustainable manner. This means that not only will ecological impact be taken into account but also the social and economic aspects. For example, conference locations will be chosen with their accessibility by public transport or for the physically-challenged in mind. Hotels will be booked within walking distance of the conference venues. In addition, for each event attention will be paid to the sustainability aspects of products and purchases (e.g., catering, relational gifts, etc.). Finally, every effort will be made to involve the local economy and the local population in these events.

Monika Sormann, Eva Van Buggenhout and Karolien Waegeman,
EWI project team, EU presidency

48 As a result of the reforms initiated by the Treaty of Lisbon (13 December 2007), the European Council will no longer be chaired on a rotating six-month basis, but by a European president, who will be chosen for a period of 2.5 years.

49 See EWI Review (2) 1: 10 – 13 for general background information relating to this article.

50 See EWI Review (2) 1: 13.

51 Foreign Affairs and Security issues will fall under the responsibility of the President and the High Representative and no longer under the presidency of the Member States.

52 An association between several entities – mainly private, but frequently public as well – which compete with each other in certain fields but which also collaborate in the hope of increasing the overall competitiveness of all the participants. In Flanders clusters have developed around the VIB and IMEC strategic research centres. See EWI Review (2) 3: 8 – 9.

53 A competence pole is a collaboration between different entities around a common (technological) theme. The activities include collective research and the sharing/spreading of innovative knowledge. The expertise of a competence pole must yield results which can be applied directly and usefully for further innovation in Flemish companies.

54 See EWI Review (2) 2: 16 – 19.

55 Also see elsewhere in this number: p. 24.

EWI warms up for its event management marathon

During the Belgian EU presidency, Flanders will be obliged to organise a host of meetings, seminars and conferences for officials, academics, politicians, companies and social organisations. The general co-ordination of these events will be in the hands of the Flemish Department of Foreign Affairs. The Government Policy Service and the Department of Culture, Youth, Sport & Media will offer general support for transport, communications, logistics and the wider cultural framework. Furthermore, each minister will be responsible for the organisation of events which fall within their own sphere of responsibility.

EWI events

During the Belgian presidency, the full organisation of three international conferences – both the content and the practical arrangements – will be in the hands of the Department of Economy, Science and Innovation.

- **Knowledge Based Bio-Economy 2010 conference**
  Brussels, 14 September 2010
  KBBE will be organised by EWI in collaboration with the European Commission (DG Research) and in consultation with the European Steering Group. The purpose is to map innovations in the field of bio-economy and to develop a policy vision which meets the needs of the future.

- **EurOcean 2010**
  Ostend, 11-13 October 2010
  Together with the Flanders Marine Institute (VLIZ), EWI will organise EurOcean 2010, an international marine and maritime research conference. The Federal Directorate for Science Policy, the Royal Belgian Institute for Natural Sciences and the European Science Foundation - Marine Board and the European Commission (DG Research) are the other key partners.

- **Strategic Energy Technology Plan 2010 conference**
  Brussels, 15-16 November 2010
  EWI is responsible for the organisation of this international conference which is being held within the framework of the European Commission's Strategic Energy Technology Plan (SET Plan). The summit programme will be drawn up in consultation with the European Commission (DG Research), the federal government, the Brussels Capital City Region and the Walloon Region.

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

EWI as partner

In addition, EWI will also act as a partner for the preparation of programmes for a number of other specific events which fall within our policy domain.

- **European Security Research Conference**
  Ostend, 23-24 September 2010
  JAnnual conference for research into security matters of interest to many different sectors.

- **NMP Manufuture Conference**
  Brussels, 7-9 September 2010
  The conference aims to evaluate European research in the fields of materials technology, nanotechnology and production technology, with a view to setting new priorities.

- **ICT Conference**
  Brussels, 27-29 September 2010
  Europe's largest bi-annual R&D conference in the ICT domain.

- **Enterprise Europe Network 3rd Annual Conference,**
  Antwerp, 13-15 October 2010.
  Flanders Enterprise is the Flemish member within the EEN and will actively participate in the organisation of this annual conference, which forms part of the implementation of the European Commission's Competitiveness & Innovation Framework Programme.

- **Researchers Mobility & Careers Conference**
  Brussels, 8-10 November 2010
  A conference devoted to the key issue of researcher mobility, which can help to give a considerable added value to European research as a whole.

- **Conference on Research Infrastructures for the Energy Domain,**
  Brussels, 30 November 2010
  A conference which will stress the crucial role of an optimal research infrastructure within the European Research Area (ERA). The Flemish partner is the Hercules Foundation.

- **Beyond GDP Conference (Gross Domestic Product)**
  EWI will support this conference organised by our colleagues of the Department of Environment, Nature and Energy (LNE) and the Services of the General Government Policy Department. (DAR).

EWI support

Finally, there are a number of events which can count on the financial support of EWI, even though the actual organisation rests in the hands of the federal government, the regions or the communities.

- **ESF Forward Look Workshop**
  Flanders, autumn 2010
  Via the Forward Look workshops, the European Science Foundation hopes to arrive at a commonly accepted long-term vision for fundamental research and to organise the future scientific agendas at national and European levels.

- **ITEA 2 Symposium**
  Ghent, October 2010
  This annual symposium is organised by EUREKA[56], an inter-governmental initiative for the improvement of the competitiveness of European industry through greater innovation. The Flemish co-financing of ITEA is provided by the IWT.

The preparation of all these events by a five-strong project team is already in full swing.

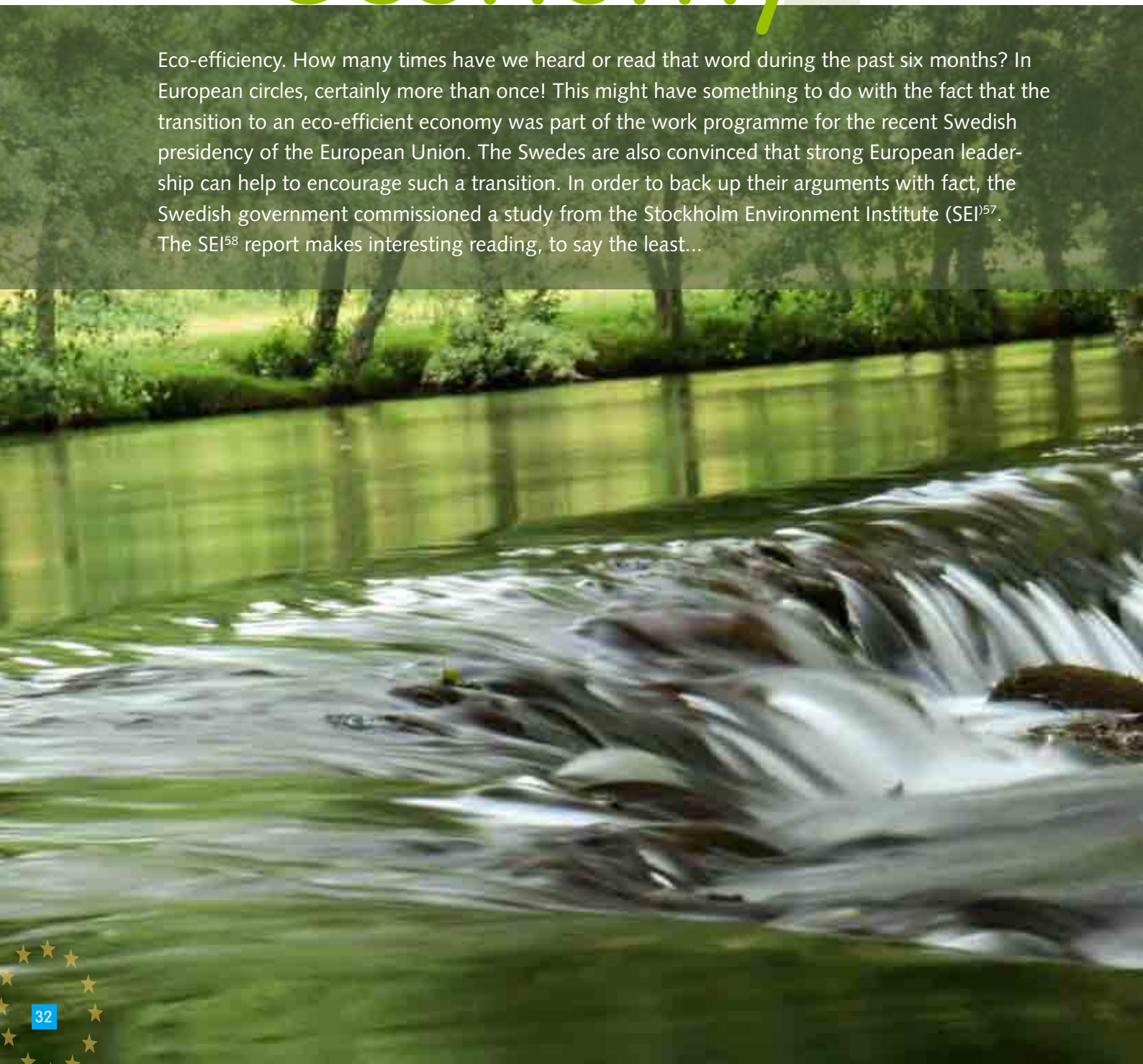
Our visiting card…

The Belgian presidency of the European Union represents a challenge at many different levels. Even so, with good internal communication, transparent agreements, clear divisions of responsibility, a good dose of proactivity and common sense and a watertight plan of action, this is a unique opportunity for EWI to help put Flanders on the European map.

56 See EWI Review (2) 1: 20 – 22

The transition to an eco-efficient economy

Eco-efficiency. How many times have we heard or read that word during the past six months? In European circles, certainly more than once! This might have something to do with the fact that the transition to an eco-efficient economy was part of the work programme for the recent Swedish presidency of the European Union. The Swedes are also convinced that strong European leadership can help to encourage such a transition. In order to back up their arguments with fact, the Swedish government commissioned a study from the Stockholm Environment Institute (SEI)[57]. The SEI[58] report makes interesting reading, to say the least...



Although the Swedes have now handed over the EU presidency to Spain, the switch towards a more eco-efficient economy continues to be a 'hot' issue. But what exactly is eco-efficiency? In short, it is the production of goods and services in a more environmentally-friendly manner. An eco-efficient economy is regarded as being an essential component of – but not the same as – a sustainable economy. Sustainability is a much broader concept, which includes an economic, an ecological and a social pillar.

Just in case anyone still doubts: improving the sustainability of our economy is no longer a matter of 'if', but a matter of 'when'. Yet perhaps even this statement is misleading. Our economy will not become sustainable overnight. It will not happen at the press of a button. On the contrary, it is a process; a process which has already been underway for quite some time.

Eco-efficiency: the need is becoming urgent

Notwithstanding the fact that various initiatives already exist to promote a more eco-efficient economy, there is an increasing sense of urgency in the policy plans at European and international levels. This growing awareness inside the EU has a number of different causes, linked to several of the continent's greatest societal challenges: climate change, the energy question, industrial competitiveness, innovation, etc.

As far as climate is concerned, compliance with the obligations imposed by the Kyoto Protocol[59] and the need to meet strategic EU climate targets[60] are important for the credibility of the EU as a pioneer in the struggle to combat the effects of global climate change. Energy and transport[61] are responsible for the lion's share of greenhouse gas emissions in the EU, and are thus key factors in the success or failure of climate policy. Moreover, energy is not only of strategic importance in terms of the climate. The EU's dependence on imported energy is also growing steadily. This has created uncertainty with regard to the future of an adequate energy supply. This was painfully illustrated in 2008, when a dispute over gas between the Ukraine and the Russian Gazprom organisation led to the pipelines to the Ukraine – and to Europe – being turned off. The result? Energy shortages in several East European member states by the start of winter.

Finally, the transition to an eco-efficient economy is vitally important for the competitiveness of industry and the growth of innovation in Europe. Innovation is inextricably linked to the concept of an eco-efficient economy: innovation is seen as the answer to the classic confrontation between the need for environmental protection and the need for economic growth. The search for greater eco-efficiency and the switch towards renewable sources of energy offer several interesting possibilities: a competitive edge as a result of more efficient energy consumption, market opportunities for ecologically sound European products and services, etc. An eco-efficient economy would also significantly reduce Europe's dependence on certain imported ores and minerals, and this at a time when the market for raw materials has become extremely competitive, thanks to the development of rapidly expanding economies such as India and China. Moreover, we are harvesting the earth's natural resources more quickly than they can be replaced. Eco-efficiency would therefore reduce the pressure on both the European economy and on the hard-pressed environment.

EU policy today

The transition to an eco-efficient economy presupposes a change in the manner in which we carry out our economic activities. Both public and private interventions are essential for the initiation of this change. These interventions can take several different forms. There is the traditional regulatory approach, such as the setting of production standards. Since the middle of the 1990s, there has also been an increase in 'market-based' instruments. This effectively means that extra environmental and other external costs, such as health costs, are included in the price of the product. The emissions trading system (ETS) and environment taxes are examples of this kind of mechanism. They encourage a change in behaviour by making environmentally unfriendly products more expensive, rather than simply banning them. Finally, there are also instruments in which the business world itself has some degree of say (for example, R&D support or voluntary agreements[62]).

European energy policy seeks to achieve a sustainable, competitive and reliable energy supply. During the European Council meeting in December 2008, an agreement was reached about a climate and energy package. Amongst other things, guidelines were issued for the promotion of renewable energy and the ETS. In the field of energy efficiency, the European Commission set out an Energy Efficiency Action Plan as early as 2006. Its more recent Strategic Energy Technology (SET[63]) Plan is another important step in the right direction. EU policy with regard to sustainable production and consumption consists of a broad range of linked policy initiatives. The 2008 Action Plan offers a clear summary of all these measures and their purpose[64]: the aim is to increase the capacity of companies to convert environmental challenges into economic advantages.

In the field of innovation, much hope is pinned on the initiatives in connection with 'lead markets'. These initiatives seek to accelerate the development of growth markets within the EU by using instruments such as normalisation and innovative tendering. Renewable energy and sustainable building are amongst the sectors which have been earmarked as lead markets. In addition, the Framework

Programme for Competitiveness and Innovation will make resources available to European SMEs to improve their performance in both these areas. September 2008 also witnessed the publication of an announcement relating to the so-called 'enabling technologies', which can be of great importance for the modernising of our industrial base and are necessary for a switch to a low carbon economy.[65] This announcement helps to build a bridge between industrial policy and innovation policy. Finally, it is also important from the point of view of competitiveness that eco-efficiency becomes integrated into the external policy of the Union, such as trading policy. This will allow environmentally-friendly European solutions to find their way onto the world market.

A higher gear – now!

If we review all these measures, you might be forgiven for thinking that the situation is under control, or is at least being dealt with. However, we need to make a number of important qualifications. For example, the EU will only meet its Kyoto targets by buying 'clean' air from third countries. This means that our reduction in CO_2 emissions is only being partially achieved through changes in the economy. Moreover, the effect of emission reductions in certain sectors is being undone by a more than equivalent increase in consumption. To make matters even worse (and more complex), the number of goods being imported onto the European market is increasing all the time, even though the EU's ability to check CO_2 emission relating to the production of these products is often limited. Moreover, the fall in CO_2 emissions in some sectors can also be related to a transfer of production to other non-EU countries: in other words, we are not producing better, we are simply producing less. Add to all this the fact that our major trading rivals – the USA, China and, above all, Japan – are becoming more involved in the international climate debate, and it soon becomes clear that Europe's position is by no means as secure or as exemplary as it might at first glance seem. For example, the new Japanese premier has recently announced that his country intends to cut CO_2 emissions by a staggering 25% by 2020.

In other words, Europe still has a long way to go. In order to reduce the level of absolute pressure on the environment, in order to keep the leadership of the international climate debate in the hands of the EU, and in order to secure the pioneering advantages accruing from a prompt change to an eco-efficient economy, we need to change into a higher gear – now! According to the SEI, this can be made possible by concentrating our attention on three strategic areas of policy: the more efficient use of raw materials, the further development of new technology markets (with special emphasis on energy and transport) and the setting of a world price for CO_2.

It goes without saying that governments involved at all levels must take measures to create an environment which encourages companies and consumers to alter their behaviour. However, an equally important aspect in this respect is the global nature of many of the problems, such as climate change. Global agreements are necessary to prevent 'carbon leakage'[66] and to achieve equal conditions for eco-efficient European products and services. A market-based instrument such as ETS, if applied worldwide, could act as a strong stimulus not only for industrial change, but also for research into the ways in which that change might be brought about.

In order to achieve optimal development and distribution of eco-efficient technologies, it is important that policy instruments should be adjusted to reflect the requirements of the innovation pathway. Much more attention needs to be paid to this crucial matter. There is an excellent research base in Europe, but relatively few of the results of this research are actually valorised in Europe. However, the introduction of a more demand-oriented policy – such as the Union's lead markets initiatives – has not been without its difficulties.[67] This is partly the result of the fragmentary method of approach, whereby different policy instruments were used at different policy levels and in different domains. A more integrated approach is required as a matter of urgency. The great societal challenges of our time, such as climate change and the energy shortage, can only be met by a strategy of integration, which operates both horizontally (between policy domains) and vertically (between policy levels).

Perhaps even more important than an integrated approach is the necessity of introducing systemic thinking[68] into our strategic vision for the future. This implies a need for high-quality impact and policy evaluations, which in turn implies a need for exhaustive details to analyse and assist policies, rather than selective details to justify them. This will allow a better understanding and a better assessment of the mutual (causal) relationships between different policy levels and domains. As a result, potential conflicts between the requirements of different policies can be better weighed and – in the best case scenario – can be converted by innovation into win-win solutions.

"We have to learn to think in a new way," proclaimed the Russell-Einstein manifesto in 1955. This manifesto, which was published at the height of the Cold War, was drawn up to reflect a fear that an atomic conflict might soon break out, which would lead to the destruction of mankind and our planet. The debate surrounding eco-efficiency is no less crucial, since it is also directly related to the future of mankind and our planet. And this, too, will require a new way of thinking.

Karel Boutens,
Enterprise and Innovation Division

57 This institute, founded in 1989 by the Swedish government and with spin-offs in the UK and the USA, seeks to contribute towards sustainable development by building bridges between research and policy.

58 The report can be downloaded on the following web page: http://www.sei.se/publications.html?task=view&catid=5&id=1241.

59 The EU is committed to reducing levels of CO_2 emission during the period 2008-2012 by 8% in comparison with 1992 levels.

60 During the meeting of the European Council in March 2007 agreement was reached with regard to the strategic objectives relating to global warming. The target is to limit the increase to 2°C by 2050. Concrete objectives were also set in relation to CO_2 emissions, energy efficiency and levels of renewable energy. For more information, please consult: http://ec.europa.eu/climateaction/.

61 The energy and transport sectors may be the largest dischargers, but they are not alone in causing the problem. In general terms, 80 % of CO_2 emissions are the result of an increase in the use of energy in all sectors.

62 See EWI Review (2) 3: 6 – 7.

63 http://ec.europa.eu/energy/technology/set_plan/set_plan_en.htm.

64 See EWI Review (2) 2: 14 - 15.

65 European Commission, "Preparing for our future: Developing a common strategy for key enabling technologies in the EU", COM(2009)512.

66 'Carbon leakage' is a phenomena whereby a CO_2 reduction achieved by the tight regulatory provisions in land A are offset by an increase in emissions in land B, simply because its emission regulations are less strict, which encourages companies to 'migrate' from country A to country B.

67 European Commission, "Evaluation of innovation policy in a changing environment", COM(2009)442.

68 Also see elsewhere in this edition: p. 8.

Barroso II and the 2020 Pact

Last autumn, the former prime-minister of Portugal José Manuel Barroso began his second mandate as chairman of the European Commission. His reappointment led to the necessary degree of argument and political horse-trading, as a result of which he put forward a comprehensive albeit neutral programme. A summary.

Barroso formulated a number of policy suggestions in his manifesto entitled 'The Europe I believe in': "The initiatives which have been suggested should not be seen as a catalogue, but rather as an illustration of the type of political guidelines, around which I hope all pro-European forces can be inspired to reach a consensus.'[69]

A Europe for the people

The Europe of Barroso II is full of ambition: "It is a Europe of responsibility and decisiveness, in which people can exercise their rights in a climate of justice, freedom and safety." Europe is more than just a free-market economy: "it is a community of values based on human dignity, freedom, equality and solidarity." In short, a place where people stand at the top of the agenda.

We are facing many serious challenges, according to Barroso. Economic growth and competitiveness need to be maintained in the long term. Sustainability must become a competitive advantage for Europe. At the same time, the fight against unemployment must continue and social cohesion must be tightened. The safety of all Europeans must be guaranteed. The concept of citizenship and the participation of the European citizen must be strengthened.

Integration and synchronisation for the long term

The President of the Commission placed a strong emphasis on the need for an integrated, forward-looking policy: the various initiatives of recent years must be synchronised. By gearing the different objectives to each other, it should be possible to devise a consistent and homogeneous policy for the long term. This will allow Europe to bundle its talents and strengths, giving a new impulse to "the inclusive and sustainable social market economy". In the past, a number of necessary component elements have already been included within different policy lines and instruments: for example, the Lisbon strategy for growth and employment, the new social agenda of the Growth and Stability Pact, the strategy for sustainable development, the policies relating to climate change and energy, or the European Research Area.

Europe must be open, competitive and prosperous. It must invest in research and development, and in the further expansion of a modern infrastructure. Europe must continue to work towards a green economy and must take the lead in climate change. It must tap new sources of sustainable growth and must enhance social cohesion. In short, we must create a Europe for people and a Europe which will once again be capable of competing as an equal partner on the world stage.
The European Union needs to urgently address all these key issues, although Barroso accepts that it may not be possible to make rapid progress in every field of endeavour. Perhaps he can dust off the old 'Monnet method'?[70]

Frank Vereecken,
Strategy and Co-ordination Division

69 José Manuel Barroso, "The Europe I believe in", September 2009, http://ec.europa.eu/commission_barroso/president/pdf/press_20090903_NL.pdf. All the quoted passages in this article are taken from this document.

70 Jean Monnet (1888-1979) is regarded by many as the true founder of the European Union. According to Monnet, European unity can best be achieved through a functional approach. This means first reaching agreement on a number of critical (usually economic) issues, which creates a 'spill-over' effect which eventually leads to political consensus. The introduction of the euro is a classic example of this method in practice.

The Flanders Marine Institute (VLIZ) celebrates an anniversary!

The VLIZ seeks to put its research ship 'De Zeeleeuw' and its other research apparatus and infrastructure to maximum use. In this manner, the institute contributes towards the (inter)national planning, management and efficient use of marine research resources, at the request of the research community.

In 2009 the Flanders Marine Institute (VLIZ) will celebrate the 10th anniversary of its foundation. In this short period, the institute has grown to become a unique service platform for the support of marine research in Flanders. Moreover, it houses one of the top marine data centres in the world and is widely recognised for its expertise in matters relating to biological data bases.

Since its creation in 1999 the Flanders Marine Institute has developed into the co-ordination and information platform for the support of research into the coastal and marine sciences in Flanders. In this role, it also acts as an international point of reference, known and respected throughout the world as an important knowledge crossroads in all sea-related matters.

Like a (sea) spider in its web!

In contrast to other marine institutes, the VLIZ does not have a mandate to carry out research of its own, with the exception of R&D tasks that are specifically linked to its data centre. This gives the VLIZ an independent and neutral status, on the basis of which it can offer a broad range of research-supporting services: data centre management; logistic support, sea library management, co-ordination and networking, etc. The most important target group is (perhaps self evidently) the marine science community. In addition, the VLIZ also offers a wide diversity of sea-related information to a wide diversity of groups: communication with the press and the public at large; active participation in the popularising of 'sea' science; and, last but not least, the provision of aggregated data and specific policy-supporting facts and figures. With these purposes in mind, the VLIZ had made co-operation agreements with several other research groups and administrations in Flanders, whilst at the same time fully integrating its activities into national and international networks.

The VLIZ is administered by a board of directors – chaired by the Governor of West Flanders – which consists of 14 members, appointed by the Flemish government and

The InnovOcean site at the Wandelaarkaai in Ostend

the Province of West Flanders. There is also a Science Commission, which reflects the multi-disciplinary and inter-university character of the institute. Like the board of directors, the commission also contains representatives of the Flemish and Federal governments. Members of other research institutions and other research disciplines can also be invited to serve. In 2008 the VLIZ realised a turnover of 4.7 million euros. In addition to subsidies from both its sponsoring governments, it was also successful in attracting considerable external funding.

Supporting the marine sciences

The mission of the VLIZ is to support the marine sciences. In this respect, it seeks to achieve four strategic objectives. It wishes to advance the cause of marine research in Flanders and to strengthen its international standing; it wishes to act as an international reference point in the world of marine science; it wishes to enhance the visibility of Flemish marine science research with the general public; and it wishes to provide (asked or unasked) scientific and research information to policy-makers, so that they can use this information to take better informed decisions in marine-related matters.

The data network: a real trump card

To achieve these objectives, the VLIZ engages in a wide variety of different activities. Central amongst these activities is the operation of the Flemish Marine Data and Information Centre (VMDC). This centre collects and collates data, implements international standards and distributes the results at home and abroad. In the centre both internal and external material is gathered, checked for reliability, processed and made available to the scientific community. One of the most important data systems is the Integrated Marine Information System, which holds information on people (>17000), institutions (>7350), projects (> 2200) and publications (>120.000). The VLIZ data centre is integrated into major European networks – such as MarinERA, MarBEF, the ESF Marine Board and EUROBIS – and also into key world networks – such as WoRMS, GBIF and the IODE system operated by UNESCO. The VMDC contributes towards the development of international standards through the management and exchange of data and information. The VLIZ is specialised in the processing of biological data. In this respect, more than 180,000 of the 240,000 known species of marine life have already been fully documented and incorporated into the World Register of Marine Species (WoRMS), hosted by the VLIZ.

Planet Sea

The VLIZ maps marine expertise in Flanders and makes this expertise available to interested parties at home and abroad. By offering a discussion platform, by organising congresses and meetings and by issuing publications, the VLIZ promotes networking between marine scientists, and also between the scientists and the above-mentioned interested parties. Its library and media archive contain a unique collection of marine science and coastal literature (including so-called 'grey' literature, such as official reports and theses), as well as an outstanding selection of visual material and multi-media.

In addition to its active efforts to stimulate public interest in marine science research in Flanders, the VLIZ has also developed a number of educational packages, which are primarily targeted at secondary education. Reactions to the interactive pilot project – *Planet Sea* – have so far been most encouraging. The institute also runs an information platform, which offers objective scientific information.

In just 10 years, the VLIZ has succeeded in putting Flemish marine science on the world map, so that the institute's expertise is now recognised around the globe. During the next 10 years the VLIZ hopes to further strengthen this reputation by expanding and improving its activities and by making its fund of knowledge more widely available to the European and world research communities.

Rudy Herman,
Research Division

`Planet Sea': the winning class gets a week on board 'De Zeeleeuw' and learns at first hand what marine research really involves.

The VLIZ data centre can be consulted online at www.vliz.be/imis.

The Youth Contact Day brings together young scientists from Belgium, France and The Netherlands.

The research ship 'De Zeeleeuw' and 'De Zeekat'.

Can we talk to our brains?

In previous editions of the EWI Review we have looked at the four strategic research centres in Flanders. These centres have been encouraged to set up a system of inter-disciplinary collaboration, since collaboration between different scientific disciplines has been shown to be particularly fruitful in terms of leading to technological breakthrough. In spring 2009 a first collaborative venture of this kind was launched. This challenging project attempts to achieve an unlikely combination between neuro with nano-electronics. And so Neuro-Electronics Research Flanders – NERF – was born.

Numerous studies have confirmed that what Hercule Poirot (Agatha Christie's famous Belgian private detective) once referred to as 'our little grey cells' are our greatest trump card as a species. This is just as well, since everyone is agreed that knowledge is the future of our economy and of our society as a whole. And few would dispute that knowledge and brains go together. But if our brain cells are our greatest natural advantage, it would be useful to know exactly how they work. In particular, it would be very useful to know how the neurons in our brains exchange signals. Until now, this has been largely unexplored territory. Can we really decipher the neuron code? Will we ever be able to communicate with our own brains in their own language?

A real brain-teaser!

These are truly monumental challenges, since the human brain is an extremely complex organ, which is built up from billions of neurons (nerve cells), linked to each other by a complex network of…

what? Understanding this 'what' is the 64,000 dollar question. Many scientific disciplines have studied the working of the brain from their own perspective: biology, psychology, medicine, etc. Neuroscience has also advanced by leaps and bounds during recent decennia. However, the brain is so complex that a great deal of further research is still needed.

This is precisely the ambition of the scientists and researchers at NERF, a collaborative venture between IMEC[71], VIB[72] and the Catholic University of Leuven. These research institutions have joined forces to try and create a connection between minute microchips and individual brain cells – painstaking work of the minutest detail: nano-detail. This precision has only been made possible thanks to recent advances in nano-electronics and neuro-biology. And once the neuron communication code has been cracked, the researchers hope that the nano-chips and the neurons will be able to exchange messages with each other.

In order to achieve these new breakthroughs, it will be necessary to use the right combinations of disciplines. As a result of a continuing process of miniaturisation, which is now on the nanometre scale, the use of electronics in bio-technology and medicine has become feasible: to such an extent, that technology now exists which can measure individual brain cells and cell-to-cell interactions.

Huge social impact

IMEC and VIB have been working together for some time to develop a chip which can detect the signals transmitted by neurons and which can return signals of its own. The aim is to produce a chip which is suitable for both *in-vitro* and *in-vivo* applications, as used in current research into neuro-degenerative illnesses such as Alzheimer or Parkinson. The Catholic University of Leuven has also carried out investigations into the interaction between brain cells and electrons, including the 'deep brain' simulation of patients with brain illnesses.

Research into the workings of the human brain is a challenge which, if successful, could potentially have a huge impact on society as we know it. It could lead to the new insights, methods and technologies which are necessary for the diagnosis and treatment of various dysfunctional conditions, the ageing process, traumas, migraine, addictions, depression, etc. It may even become possible to implant nano-systems into our brains to measure or stimulate the activity of particular brain cells, in order to control pain or to repair damaged nerve canals. The 'greying' of societies around the world will inevitably lead to an increase in the number of brain disorders, so that better and more effective treatment is an urgent necessity.

A new top research centre in the making

On 3 April 2009 the Flemish government gave the green light for the financial support of NERF. The new centre was sited on the IMEC campus in Leuven. Here it will be possible for a multi-disciplinary research team of neuro-biologists, doctors and engineers to work together in a new 1,000 m² neuro-laboratory, equipped with state-of-the-art 'clean' rooms. NERF has at its disposal a structural budget of 3 million euros per annum. A third of this is provided by the Flemish government. The other research partners – VIB, IMEC and the University of Leuven – provide the rest. Once the centre is working at cruise speed, it is anticipated that income will be doubled, thanks to project work and additional external funding. The objective is to reach this cruise speed by 2014, by which time it is envisaged that 50 leading researchers will be working at the facility. This select group can rely upon the added contributions from the programme lines of the VIB in neuro-biology and IMEC in nano-electronics.

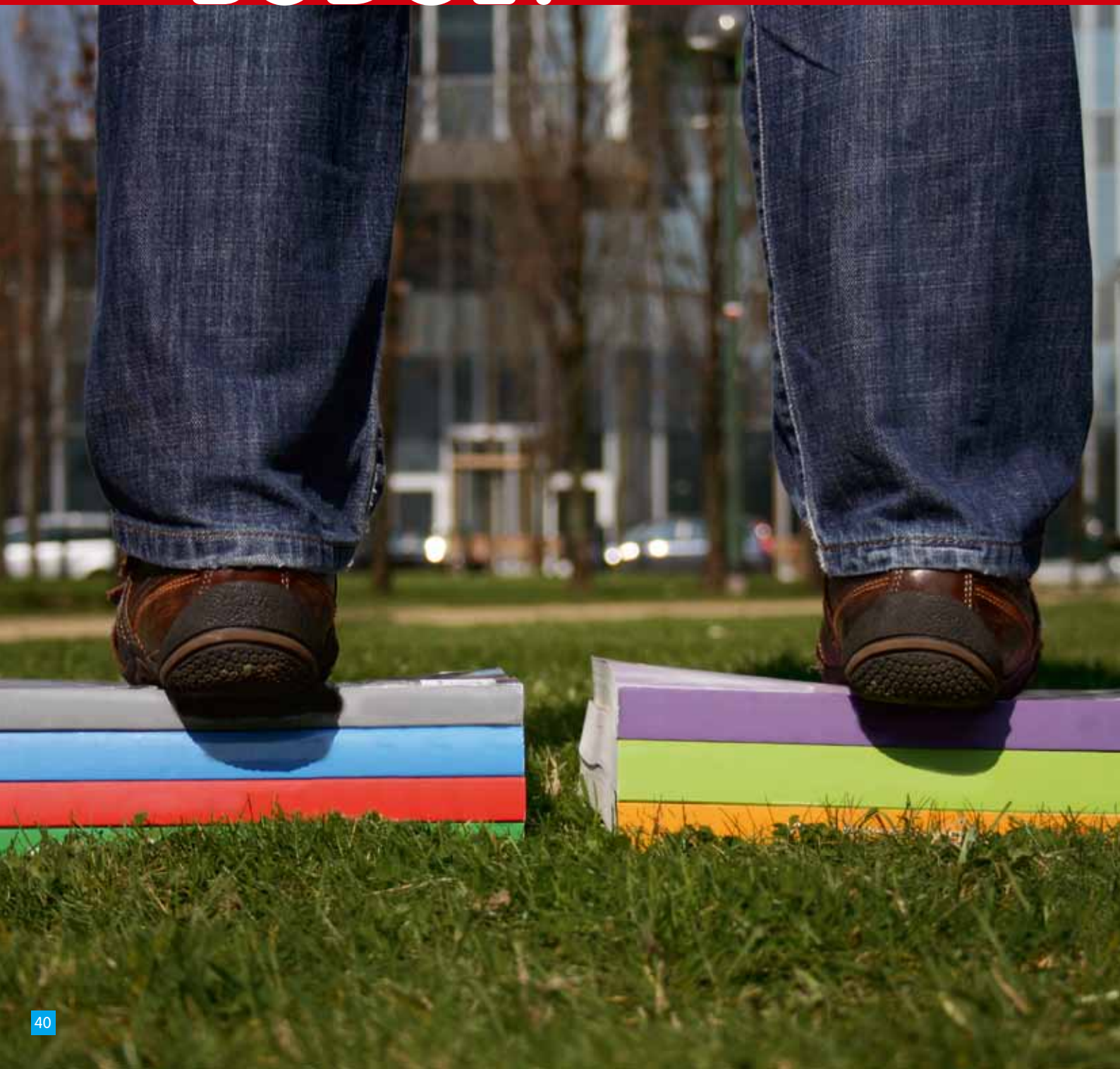
With the setting up of NERF, Flanders has created a first inter-disciplinary collaborative project which promises a high degree of social valorisation. The various partners each possess complementary expertise and are involved on equal terms in an initiative which seeks to realise a strategic social objective. With top personnel, top facilities and guaranteed structural funding, NERF possesses all the necessary success factors for a high-quality and sustainable collaborative venture. It is now up to the partners to develop this venture further, so that one day soon NERF will be recognised as an international expertise centre in neuro-electronics.

Karel Goossens,
Research Division

For more information:
www.vib.be/Research/EN/NERF

71 See EWI Review (1) 1: 20 – 23
72 See EWI Review (1) 1: 25 – 27

Policy Research Centre for TAXATION & BUDGET



That policy is ultimately dependent upon the resources available for its implementation, has been emphasised on more than one occasion in recent months. For this reason, and for many others, the Flemish government is grateful to have at its disposal well-founded research on which to base its budgetary and tax policies. The Policy Research Centre for Taxation and Budget – known for short in Flanders as FB – brings together economists, jurists, tax specialists and management experts attached to the University of Ghent, the University College of Ghent and the Catholic University of Leuven. With an annual budget of just 475,000 euros, it is one of the smaller research centres. Nevertheless, its research programme is ambitious: the team of ten promoters and six researchers is attempting to conduct no fewer than 11 research projects of varying duration.

Following a working-in period in 2007 (the year of its foundation), the centre began to operate at cruise speed in 2008. The research was grouped in three basic A-tracks and several shorter B-projects of different kinds. A number of these studies – and their results – are highlighted in the article which follows.

Putting figures to different scenarios

The research into Flemish public finances is largely pro-active and policy-preparatory in nature. A first example is the analysis of the likely impact of the introduction of road pricing for lorries.[73] Within the framework of this basic concept, several different scenarios were studied: toll competition between alternative routes (including road, rail and waterway options) for Belgium in relation to The Netherlands; the effects of road pricing on transport volume; levels of toll income for the state; and changes in the levels of undesirable emissions. The results of these analyses can be consulted on the FB website.

A further example is the development of an alternative model for the allocation of housing registration fees (short description).[74] Comparative studies have shown that registration fees in Belgium are amongst the highest in Europe. Moreover, the basis on which the level of fee reduction is calculated, namely the cadastral income, has not been adjusted to reflect the real property situation since the middle of the 1970s. The policy centre therefore carried out a simulation exercise which calculated the effect on state income of a completely new model of 'house reduction'. This model presupposes that the reduction must be granted on the basis of the actual purchase price, the age of the building, its surface area, and the social status of the purchaser.

Perhaps even more significant in the long term is the study relating to the likely impact on state finances of the ageing of the population and the transfer to a green economy, and the study which analyses the possibilities for a regional underwriting of the federal debt.[75] Both these studies are intended to analyse issues which may become policy problems in the future. They also aim to provide statistical data which may help to resolve these problems.

Using a planning instrument known as VLADYMO (Flemish dynamic model), the FD has carried out a simulation exercise which predicts the effect of an ageing population on state finances at all levels. The research team used the latest population prognoses for the period 2007-2060. These prognoses differ significantly from previous demographic predictions, particular with regard to the basic hypotheses relating to fertility and migration from other EU countries. The centre examined how these demographic developments would influence income tax subsidies and the solidarity contribution paid by the regions. The evolution of the basic subsidy, the VAT subsidy and the additional Lambermont resources[76] for the regional communities were also recalculated in the same manner. These simulations show that the financing of the regions and the regional communities will weigh more heavily on the federal budget in the future. Until 2030 the Flemish Community will see its budgetary margin continue to increase. It is only during the period 2030-2050 that this margin will begin to shrink, but the balance will continue to be positive, in contrast to the French regional community, where the margin is expected to be negative.

Supporting policy: towards a Flemish fiscal system

A second task of the Policy Research Centre for Taxation and Budget is to provide information which supports or assists in the formulation of policy. The FD's judicial investigations into the possible regionalisation of company tax and income tax[77] led to a number of relevant insights which were of use in the discussions surrounding the thorny issue of state reform. In particular, it was pointed out that the Lambermont Agreements gave the regions the option to offer a reduction or levy an increase on the federal rates of income tax.

From the summary of workable models drawn up by the policy centre for the (partial) regionalisation of income tax, it became apparent that much is already possible with only relatively minor adjustments to the Special Finance Act: tax deductions, tax exemptions, deductible allocations, adjustment of the tax free sum, and some form of special or general reduction of the federal tariff all broadly fall within the terms of the current legislation. A split tariff model would require much greater legislative amendment.

The study further analysed the possible regionalising of property tax and also the legal and technical feasibility of a regionalisation of company tax. This analysis concluded that existing European legislation allows considerable room for such a regionalisation. The double tariff model – the Swiss model, with a substantially reduced federal tax rate, plus a separate regional rate – seems the most logical model for Belgium to adopt, in view of the fact that expenditure policy is a regional competence in our country. However, the double tariff model would necessitate substantial amendment to the subsidising

mechanism of the Special Finance Act. In particular, the act requires that a portion of the income from property tax is assigned directly. In this respect, the rebate model is the most plausible and the easiest to implement: under this model, each region has the option to grant reductions on the federal tax rate up to a maximum limit. Moreover, the model is easier to bring in as a budgetary expense for the regions in the form of a rebate on company tax.

The study on the impact of company tax on the genesis of new companies, carried out for a panel of OECD countries, forms part of the research track 'fiscality in function of growth and employment'. The realisation of higher economic growth and higher employment continues to be a necessity in many European countries and regions, including Flanders. Research has shown that budgetary policy – in particular, fiscality – can be an important instrument in this respect. However, the strength and effectiveness of alternative measures are little known. The percentage of new starting companies – except in cases of access restrictions or legal/administrative thresholds – are explained in terms of the tax rate and the rate of economic growth.[78]

Evaluating policy: the profile of legators and donors

During the past two years the Policy Research Centre for Taxation and Budget has also studied the effects of the reduction in gift tax on moveable property and building land. Is this reform sufficiently well known? How has the reform influenced the behaviour of legators and donors? What kinds of tax-liable persons have actually benefited from the new measure?

Qualitative research carried out by bankers, portfolio managers and solicitors suggests that the reform has not missed its target. These experts in the field have all noted a shift towards the greater registration of donations and, to a lesser extent, bank gifts. The profile of the well-off legator/donor is a married, healthy man/couple, older than 65 and with married children. He/they make(s) gifts of a substantial amount in the direct family line – and with increasing frequency to grandchildren – as part of their 'forward planning' for settlement of their estate. These gifts are usually executed via a notarial deed, in which the various conditions of the gift (charges, return, etc.) are stipulated. There is also a distinction between what the experts call 'purposive' gifts and 'occasional' gifts. This type of gift is being given at increasingly early ages. Often they are intended as financial support for children (e.g., to buy a house or start a business). Such gifts are usually in unrestricted ownership and are

seldom registered by deed. They are most commonly hand-to-hand or bank gifts.
While the experts tend to have a better view of larger transactions, a series of interviews with 250 potential – but less well-off – donors has given an insight into the reasons why an average taxpayer may feel inclined to make a gift during his lifetime. A survey amongst a group of 50-plussers indicated that women and married taxpayers are more likely to make gifts and that this likelihood increases once they reach the age of 70. Children in the active phase of their lives are the most likely recipients. The reform was much appreciated by both categories, but in general there was little awareness about the specific character of a notarial gift or the need for it to be registered.

A representative survey of 1,050 Flemish men and women suggested that the beneficiaries of gifts are primarily male, usually married and frequently the owner of a family home. He is also likely to belong to a two-earner family, to enjoy a middle-bracket income and to have attended higher education. He is probably older than 45 and works more than four days per week.

These profiles tend to confirm the opinions of the financial experts: donors only make their gifts when they feel that the beneficiaries have acquired a sufficient degree of maturity and stability in their private and professional lives. It is also noticeable that the gifts do little to change patterns of employment amongst the beneficiaries. The only major change in their behaviour is a tendency to invest more heavily in immoveable property.

A look at the agenda

You can already note that in the spring of 2010 the FB research centre is organising a study day on the impact of fiscal measures on growth, employment and the creation of new companies. For more information about other study days, other aspects of the research programme or details of FB publications, please consult our website.

73 By S. Proost, Catholic University of Leuven.

74 By C. Smolders, University College of Ghent.

75 By D. Heremans and K. Algoed, Catholic University of Leuven.

76 Resources which result from the re-financing of the regions through the implementation of a fixed rate increase of the VAT subsidy or through the linking of this subsidy to 0.91 % of real growth from 2007, as agreed in the Lambermont state reforms of 2001.

77 By A. Haelterman, Catholic University of Leuven.

78 The results are expected to be available in the autumn of 2009.

Name: Policy Research Centre for Taxation and Budget
Promoter-coordinator: Professor C. Smolders (University College of Ghent)
Members of the consortium: University of Ghent, Catholic University of Leuven, University College of Ghent
Address: University College of Ghent – Schoonmeersen Campus
Campus Schoonmeersen
Office C201b
Voskenslaan 270
9000 Ghent
Tel.: 09 248 88 35
Fax: 09 242 42 09
E-mail: vanessa.bombeeck@hogent.be
Website: www.steunpuntfb.be
Competent minister: Philippe Muyters, Flemish Minister of Finance, Budgetary Matters, Work, Spatial Planning and Sport
Budget: 475,000 euros

Biotech: one of Flanders' strengths

For Europe and the OECD biotechnology is one of the driving forces behind innovation[79], both in the field of healthcare and in the fields of agriculture and the environment. The socio-economic potential is huge. Since the 1980s, Flanders has been investing heavily in biotechnology and in this manner makes a significant contribution towards the development of a bio-economy. Biotechnology is also important for the realisation of the objectives of the Flanders in Action (ViA) Plan, which should allow Flanders to become one of the most successful knowledge regions in Europe by 2020.

In order to analyse the evolution of the biotechnology-driven economy in Flanders, a new study was carried out last year (as a follow-up to EWI's biotech study of 2001). The purpose was to chart the companies which were active in the biotechnology sector during 2007, either in the field of R&D or in the field of goods and/or service provision. In this manner, it was hoped that the government would obtain a better oversight of the importance of biotech for the economy and of the importance of government support for the sector. Further objectives included an examination of the key factors which help or hinder biotechnology companies and an assessment of the impact of biotechnology in comparison with neighbouring countries. Finally, the results of the study were used to report to the OECD on the current state of the biotechnology industry in Flanders[80].

Working in biotech

It was decided that the OECD definition should be used to identify biotechnology companies. This definition also specifies the activities that can be classified as 'biotechnological'.

More than 80% of the 163 companies contacted agreed to take part in the study. 53 of the respondents identified themselves as biotech companies (see Table 3): five large companies (more than 250 employees), twelve medium-sized companies and 36 small companies (less than 50 full-time employees). In addition, another 20 respondents described themselves as 'mixed' biotech companies, meaning that an important part of their activities are related to biotechnology, but that they were also active in other fields. Five of these were also large companies, six were medium-sized and nine were small. (The remaining companies did not regard themselves as belonging to the biotech sector and were therefore disregarded for the purposes of the study.)

In comparison with the figure for 2001 (27), the number of biotech companies has nearly doubled. This tendency is also reflected in the employment statistics: these show a growth from 1,490 full-time jobs in 2001 to 3,585 jobs in 2007. Moreover, these are only the jobs in pure biotechnology companies: the sector as a whole employs more than 5,000 people, in comparison with a figure of 2,190 in 2001 (see Table 3). In addition, there were a further 3,400 biotech-related jobs in universities and university colleges, while the total number of jobs in other sectors indirectly related to biotechnology is estimated at 24,500.

Health-related (or red) biotech is clearly the most important branch of the biotechnology industry. This is true not only in terms of the total number of companies, but also in

terms of the number of people employed, total expenditure and turnover.
Of the 53 pure biotech companies, no fewer than 29 are active in this red branch. A further eleven work in the agriculture-related or green branch, with just seven engaged in industrial processing or white biotechnology. Four companies list bio-informatics as their main activity, with just two claiming to be active in the environmental field.
Of the 20 mixed biotech companies, four are red, three are green, eight are white, four are environmental, and just one is informatics-related.

A top sector at world level

In 2007 the Flemish biotech companies were good for a total turnover of 616 million euros, or 0.6 % of GDP. Table 4 offers a comparative summary of the biotechnology turnovers in several other European countries in 2006. The figures for Germany and Flanders are figures for 2007. Expressed in terms of a percentage of GDP, the statistics show that biotechnology in Flanders is making a major contribution to our region's prosperity. In short, it is one of the best biotech industries in Europe, if not the world, and it is still growing. The turnover in the pure biotech companies is now five times the 2001 figure.

The importance of biotechnology for Flanders is confirmed by expenditure on R&D (see Table 5; as in the previous table, figures from different years are shown, since more recent statistics are not available). Once again, Flanders scores exceptionally well. Roughly one-fifth of all R&D expenditure (private and public sector) is devoted to biotech. The R&D intensity in biotech (as a percentage of industrial added value) is 0.44%. According to the OECD, this puts Flanders at the very top of the tree. The comparable figure for the USA is just 0.31%.

Biotech – a success on the stock market

Biotechnology companies are characterised by stability and growth. The first stock market launch of a Flemish biotech company on the EASDAQ (NASDAQ-Europe) index took place as long ago as 1996: Innogenetics. Galapagos and Devgen followed in 2005 with a launch on Euronext. In 2006 Thrombogenics and OncoMethylome Sciences were also quoted on the same index. Tigenix and Ablynx took the plunge in 2007. Moreover, Ablynx realised the highest introduction ever recorded by a biotech company on Euronext.

Support is still necessary

Continuing support for the further expansion of R&D activities relating to new biotech processes and products remains a priority. In this respect, the IWT (the Flemish innovation agency) is an important source of funding in Flanders, in both the academic and industrial fields. In 2007 the IWT made 28.4 million euros available for biotech-related activities, of which 19.2 million went to pure biotech concerns. In total, 44 companies received IWT support. In addition, 22 companies were awarded subsidies totalling 15 million euros from the European Framework Programme.

As well as government support, risk capital is also essential for the biotechnology sector. In 2007, 85 million euros of risk capital were invested in the pure biotech companies. Access to capital – from both public and private sources – is perceived as important by the sector, but rarely forms a problem. In view of the change in the general financial situation following the completion of the study, this may become more of an issue in the future. Suggestions to this effect have already been made in the press, but the sector remains confident, with few problems reported. In general, the Flemish biotech industry seems to have withstood the crisis well – although a further study will be needed to confirm this.

Kathleen D'Hondt,
Research Division

Table 3: Summary of the biotech industry in Flanders

Total number of biotechnology companies	**73 companies**
Number of pure biotechnology companies	53 companies
Number of mixed biotechnology companies	20 companies
Number of biotechnology workers in biotechnology companies	**5059,15 FTE**
Number of biotechnology workers in pure biotechnology companies	3585,25 FTE
Number of biotechnology workers in diversified biotechnology companies	1473,90 FTE
Total turnover generated by biotechnology activities	**€ 679,0 million**
Total turnover generated by biotech activities in pure biotech companies	€ 615,9 million
Total turnover generated by biotech activities in diversified biotech companies	€ 63,2 million
Total turnover generated by biotechnology-related R&D	**€ 554,1 million**
Expenditure on biotech-related R&D in pure biotech companies	€ 277,2 million
Expenditure on biotech-related R&D in mixed biotech companies	€ 276,9 million

Table 4: Turnover from biotech as % of GDP[81]

	Turnover M euro	% GDP (2006)
Sweden	1,084	0,35
UK	2,979	0,15
The Netherlands	745	0,14
Belgium	207	0,07
Germany	*2000*	*0.08*
France	777	0,04
*Flanders **	*616*	*0.36*

** For Flanders, only pure biotech companies have been counted.*

Table 5: Expenditure in biotech R&D as % of GERD

	Private R&D exp. 2004, in M euro	% of GERD in 2004
*Flanders 2008**	*277 (554)*	*7,2 % (14,4 %)*
Belgium	315	5,8
UK	1557	5,2
Sweden	367	3,5
Germany	1507	2,7
France	589	1,7
The Netherlands	147	1,7

** for 2007, pure biotech companies (mixed biotech companies) – Flemish study published in 2008.*

79 See EWI Review (2) 2: 34 – 35.
80 OECD Biotechnology Statistics 2009 – see www.oecd.org/sti/biotechnology.
81 Source: Ernst&Young, 2007; processing: Technopolis Group 2008. * For Flanders, only pure biotech companies have been counted.

EWI Focus II: measuring innovation in Flanders

Under the name EWI Focus the department organises open workshops, in which current policy themes, challenges or findings relating to the economy, science or innovation are examined. 'Measuring innovation in Flanders' was the title of the second workshop in the series.

As a knowledge economy, Flanders wishes to reach the same level of innovation as Europe's other top regions by 2020. This presupposes – certainly in a time of economic crisis – that both the state and the business community will maintain their innovation commitment. Viewed in this perspective, concrete and properly follow-up measures are essential.

In its policy note for 2009-2014, the Flemish government placed a strong emphasis on the realisation of the Flanders in Action Plan (VIA). This plan details 20 objectives (the 2020 Pact) and five breakthroughs which are necessary to launch Flanders to the European top. One of these breakthroughs is the Flanders Innovation Centre, which is focused on the strengthening of innovation as a lever in the economic fabric of our region.

A critical view

The EWI workshop wanted to open a critical discussion about the long-term future of the measuring of innovation in Flanders, and about the (new) input, output and outcome indicators which will be necessary to achieve this.

The current set of indicators for the follow-up of the Flanders Innovation Pact[82] was explained by Dr. Vincent Thoen, senior researcher at the Flemish Science Policy Council (VRWB). Eleven priority core indicators measure the various links in the innovation chain: input (financial resources, human potential, etc.), processes, output (new knowledge, products, etc.) and effects. The measurement of these links (separately) by indicators is, of course, necessary, and will remain so. But there are other major challenges for the future, such as acquiring insights into the so-called 'black box' between input and output or learning more about output additionality. When the innovation actors decide that the time is right to conclude a new Innovation Pact, they will need to think about new and improved indicators on the basis of these new insights.

Professor Koenraad Debackere of the Expertise Centre for R&D Monitoring (ECOOM) discussed the latest evolutions and insights with regard to the development of R&D and Innovation indicators (RD&I indicators). He emphasised the importance of international standards, which make comparison with the results of other countries and regions more feasible. With this in mind ECOOM has devised a methodology for allocating patents to regions, which is being used by EUROSTAT to compile European patent statistics and maps to the NUTS 3[83] level.

Many challenges are awaiting the developers of R&D and Innovation indicators, since there is a growing need for the measurement of the results of input factors. In short: how can we measure output and outcome? In order to establish the extent to which output is actually the result of input, it is necessary to have a robust methodology, based on detailed study work. In particular, the mapping of outcome requires controls which can accurately check the impact effect of individual measures. This in turn requires the development and collation of longitudinal and multivariate data collections.

ECOOM has also devoted much attention to the development of valid and reliable indicators for the measurement of R&D additionality. A recent study proved that such an additionality effect really does exist! The study even calculated that for every euro of support spent on research the receiving company invests on average a further 1.3 euros of its own on R&D projects.

Expertise is available

The EWI Focus II proved that Flanders already possesses considerable expertise when it comes to the measuring of innovation. But if we wish to make further progress, then a number of important challenges need to be met, so that we can continue to measure in an efficient and effective manner in the future.

Koen Waeyaert,
Knowledge Management Division

"Flanders must make itself sufficiently attractive to attract top people"

reactions participants

The two presentations gave the workshop participants plenty of food for thought. A panel of experts was on hand to answer questions and to discuss the issues raised. The composition of the panel was drawn up to allow the themes to be looked at from a variety of different angles. The VRWB, the Study Department of the Flemish government, Flanders Investment and Trade (FIT), IMEC, the Flanders Investment Company (PMV), the Institute for Innovation by Science and Technology (IWT) and the cabinet office of the Science and Innovation Department were all represented. The discussions were chaired by Professor Debackere.

Critical questions

The panel members and the public were first given the chance to air their views on the two presentations and on the importance of innovation in general. The ageing of the population will inevitably slow growth, but innovation can turn this trend around, was said, and Flanders must make itself sufficiently attractive to attract top people. Someone else suggested that we also need to pay more attention to social innovation, and not just to technical matters. As far as the measuring of innovation is concerned, the contributions were many and varied. Some said there are too few indicators which measure the levels of cooperation between different disciplines, and found that measuring additionality can sometimes be more important than the indicator itself. A number of critical questions were also put: 'How can we translate indicators into knowledge, and thereafter into policy decisions?'

Economic crisis

The panel discussion also devoted considerable attention to the deep economic crisis. This has resulted in less financial breathing room for both the private and the public sectors. However, this perhaps presents an opportunity to place the emphasis on other, non-financial accents: we need greater collaboration and must do all we can to prevent fragmentation and waste. To make the researcher's job more attractive, we need to better publicise the total package (economic, social and cultural advantages) and not just the financial aspects. It was also said that we need to give more attention to innovation processes in the quaternary sector, as well as we need to place the right emphases and make the right choices based on the VRWB spearhead clusters.

Would you like to know more?
The presentations are available for consultation on the website www.ewi-vlaanderen.be.

82 See EWI Review (3) 1: 18 – 19

83 The NUTS levels *(Nomenclature des Unités Territoriales de Statistiques)* refer to the statistical division of EU member states into regions. In Belgium, the NUTS 1 level corresponds to the three regions; the NUTS 2 level to the ten provinces and the Brussels Capital City Region and the NUTS 3 level to the 43 Belgian arrondissements (administrative districts).

危机

Chinese coincidence

One of Europe's ambitions is to become the most competitive and the most dynamic knowledge economy in the world by the year 2010. The development of knowledge not only requires a willingness and an enthusiasm to explore new frontiers. It is also to a large extent dependent upon financial input. Every European country needs to make a considerable financial effort to help achieve the Lisbon objectives. The standard against which these efforts are judged is the amount which each country invests in research and development (R&D). In theory, this should amount to a minimum of 3% of GDP: the so-called Barcelona norm. But can we still achieve this in the current economic climate? Do we need to put our ambitious Lisbon objectives and the Barcelona norm on hold?

If you want to make progress, so it is said, you need money. But is money the only criteria? Are we to believe that creativity, innovation and competitiveness can only be stimulated by massive budgets? Perhaps the crisis will lead us to new insights and new opportunities. Sometimes scarcity can encourage creativity and innovation. The positive desire to survive in a rapidly changing environment is perhaps the most forceful of all stimuli for competitiveness. It is not without good reason that Darwin and his evolutionary theory are being commemorated this year. Often, innovative ideas only become sustainably anchored in our society in the fullness of time.

Consider the case of refined sugar. At the end of the 18th century sugar was still very much a luxury product, which could only be afforded by the very rich. The sugar cane from which it was extracted was mainly grown in the overseas colonies of the European nations, largely using slave labour. Gradually its use became more widespread - until Napoleon forced his conquered territories to stop trading with the British Empire. This Continental Blockade paralysed imports to mainland Europe and led to shortages in many products – including sugar. In short, the Emperor needed to find another way to obtain sugar locally.

A chemist in Berlin had discovered as early as 1747 that sugar beet contains the same levels of sugar as sugar cane. However, it took another half century before the first sugar beet extraction plant was built. Napoleon gave orders that sugar beet should be planted and processed in huge quantities (also in Flanders). As a result, the availability of sugar rose and the price fell. However, the young sugar beet industry found it hard going after the fall of the Emperor in 1815. The routes to the colonies were reopened and the cheap, slave-produced cane sugar quickly re-established itself as the market leader. When slavery was finally abolished, the balance began to swing back in favour of beets! By now, however, sugar had become an everyday, household product. It was used as a preservative alongside salt and pickling. Its use in conserves, such as jam, also added a welcome and healthy variation to winter diets. In short, everybody used it,

'Crisis' looks like being the most frequently used word in 2009. It was a year in which nothing went right and everything went wrong – and things still don't seem to be getting any better. 'Cuts, cuts and more cuts' are the order of the day. The crisis not only influences the past and the present. It will also influence the future. But does this mean that we also need to make 'cuts' in our ambitions?

as a result of which there was now a place in the market for both beet and cane.

And what is the moral of this story? Namely, that we should not become too attached to our present way of thinking and our present way of doing things. They might work perfectly well in normal circumstances, but in times of crisis or scarcity – like now – we may need to try something different. Throughout history, this is often how the most ingenious solutions have been found. We need to look at things from another perspective. We need to consider the other person's point of view. When, as Westerners, we are launching education initiatives in poorer countries, our first inclination is to invest heavily in school infrastructure. From our own experience we know that classrooms are a first and logical step towards setting up a school structure. However, we forget that this kind of 'formalisation' of the schooling process often creates a huge threshold for the poor and underprivileged: transport to and from school, books and uniforms to be bought, compulsory attendance, reports, exams, discipline… Learning to look at things another way, learning to see things through the eyes of others can often lead to better results – for everyone.

This lesson was not lost on our compatriot Arnaud Raskin. With his 'mobile school' project he succeeded in lowering the threshold to such an extent that he was even able to bring education to many homeless and deprived children. He designed and constructed his own multifunctional, folding blackboard on wheels, which he could use just about anywhere. With this ingenious tool, social workers in many countries now bring much needed 'condition-free' education to street children who are exposed to hardships and dangers that most of us can scarcely imagine. Each year the 'mobile school' now supports about 30,000 children worldwide in their personal development towards a healthy, positive self-image: which are the necessary basis for an independent existence within our modern society.

Il faut reculer pour mieux sauter. We need to take a step back, before we can leap forward. Or to put it another way: less can sometimes lead to more. More openness, more flexibility, more creativity, more innovation, more possibilities, more… In the Chinese language, the word 'crisis' is made up from the symbols for 'threat' and 'opportunity'. Just a coincidence, do you think?

Rita Hauchecorne,
Organisational Management Team

Extreme makeover: www.ewi-vlaanderen.be

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Address of the editorial office: Strategy and Co-ordination Division, Department of Economy, Science and Innovation, Koning Albert II-laan 35, box 10, B-1030 Brussels, Belgium.
Tel.: +32 (0)2-553 59 80 - Fax: +32 (0)2-553 60 07 - www.ewi-vlaanderen.be

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Editors: Peter Spyns (General Editor), Emmelie Tindemans (Editor-in-Chief), Steven Schelfhout, Marleen Verleysen, Tim Willems.

Editorial committee: Pierre Verdoodt (Chairman), Pascale Dengis, Tom Tournicourt.

Contributors to this edition: Ilse Boeykens, Karel Boutens, Liselotte De Vos, Erwin Dewallef, Kathleen D'Hondt, Bart Dumolyn, Niko Geerts, Karel Goossens, Rita Hauchecorne, Rudy Herman, Monika Sormann, Steven Schelfhout, Eva Van Buggenhout, Jan van Nispen, Pierre Verdoodt, Frank Vereecken, Hilde Vermeulen, Karolien Waegeman, Koen Waeyaert, Wim Winderickx.

Guest authors: Bernard De Potter, Siemens, Jan Van Doren

Translation: Ian Connerty

Layout and printing: New Goff

Flemish government
Department of Economy,
Science and Innovation
Koning Albert II-laan 35, box 10
1030 Brussels, Belgium
info@ewi.vlaanderen.be
www.ewi-vlaanderen.be