eani NEWS

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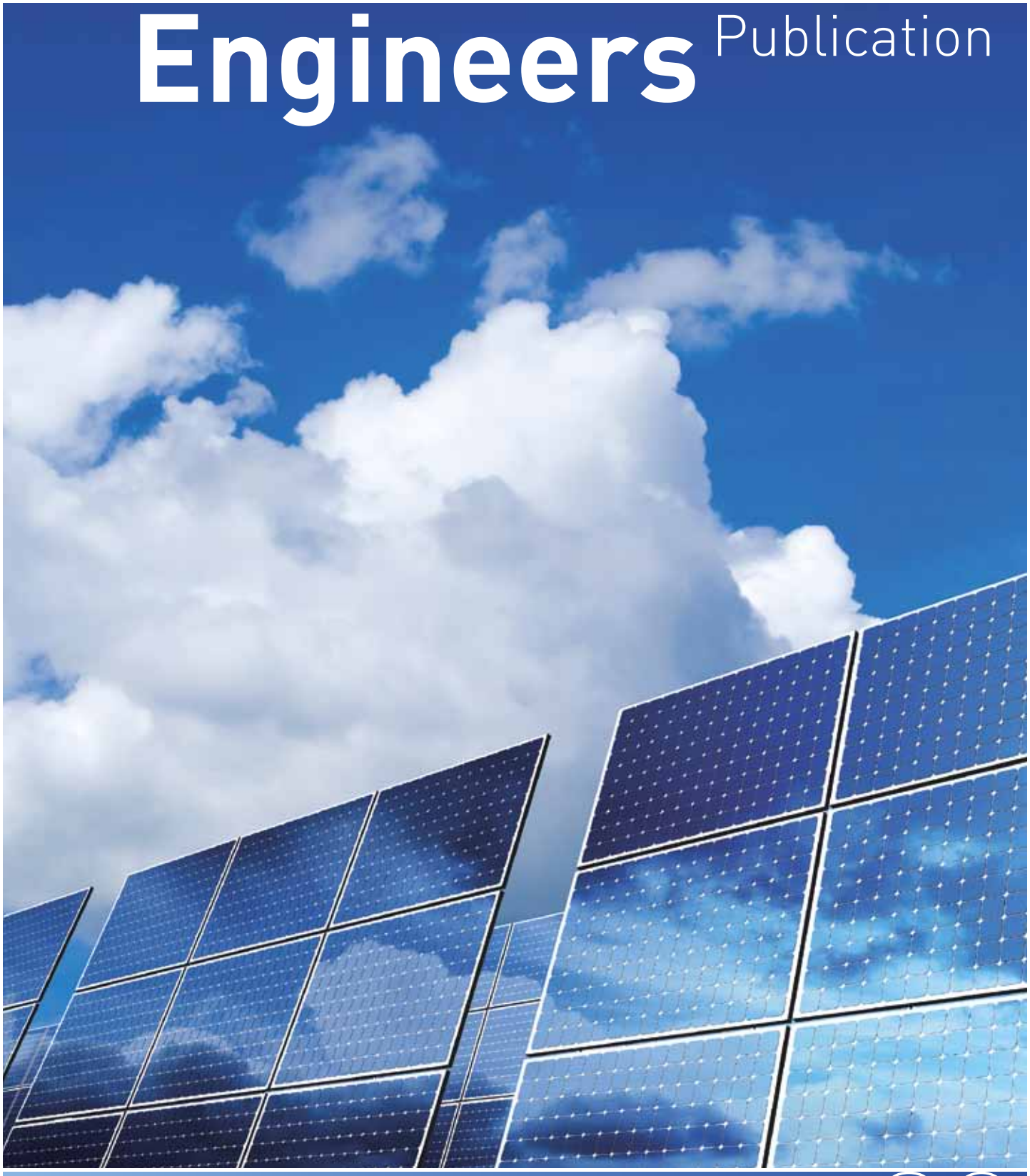

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FEANI National Members

AT **ÖIAV** - Österreichischer Ingenieur-und Architekten-Verein

BE **CIBIC** - Comité des Ingénieurs Belges / Belgisch Ingenieurscomité

BG **FNTS** - Federation of Scientific Technical Unions in Bulgaria

CH **SIA** - Swiss Society of Engineers and Architects
STV/UTS - Swiss Engineering STV

CY **CPEA** - Cyprus Professional Engineers Association

CZ **CSVTS** - Czech Association of Scientific and Technical Societies
CKAIT- Czech Chamber of Chartered Engineers and Technicians

DE **DVT** - Deutscher Verband Technisch-Wissenschaftlicher Vereine

DK **IDA** - Ingeniørforeningen I Danmark

EE **EAE** - Estonian Association of Engineers

ES **IIE** - Instituto de la Ingenieriá de España
INITE - Instituto de Ingenieros Técnicos de España

FI **UIL** - The Union of Professional Engineers in Finland
TEK - The Finnish Association of Graduate Engineers TEK

FR **CNISF** - Conseil National des Ingénieurs et des Scientifiques de France

UK **EC** - The Engineering Council

GR **TCG** - Technical Chamber of Greece

HR **HIS** - Croatian Engineers Association

HU **Budapest University of Technology and Economics**

IE **Engineers Ireland**

IS **VFI** - Association of Chartered Engineers in Iceland
TFI - The Icelandic Society of Engineers

IT **CNI** - Consiglio Nazionale Ingegneri

LU **A.L.I.** - Association Luxembourgeoise des Ingénieurs

MT **COE** - Chamber of Engineers

NL **KIVI NIRIA** - Koninklijk Instituut Van Ingenieurs

NO **NITO** - The Norwegian Society of Engineers and Technologists
TEKNA – The Norwegian Society of Chartered Scientific and Academic Professionals

PL **NOT** - Polish Federation of Engineering Associations

PT **Ordem Dos Engenheiros**

RO **AGIR** - The General Association of Engineers in Romania

RU **RUSEA** – Russian Union of Scientific and Engineering Associations

SE **SVERIGES INGENJÖRER** - The Swedish Association of Graduate Engineers

RS **SITS** - Union of Engineers and Technicians of Serbia

SI **ZDIT** - Association of Societies of Engineers and Technicians

SK **ZSVTS** - Association of Slovak Scientific and Technological Societies

FEANI NEWS

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A better future for the generations to come

Lars Bytoft
President of FEANI

Today, we all live in a world where constant change is a basic condition that we have to deal with. And we live in a time where mankind is facing major cross-border challenges such as pollution, consumption, production of energy and a growing lack of natural resources.

If we do not start changing our way of living into a more sustainable direction, we will be creating enormous problems for future generations.

Meanwhile, most of the political establishment that is empowered to change these things either denies this problem or focuses on its own re-election. I must admit that the future – even from an optimistic point of view – can look quite cloudy from time to time! Luckily, there is a way to solve some of these problems, if we, the engineers, dare!

High competences and the profound respect for nature and past times, as well as the willingness to contribute instead of take, are needed.

Engineers from all over Europe need to demonstrate that they are an essential part of the solution.

The engineering profession – regardless of branches – has all the knowledge and competences to invent sustainable solutions in an interactive approach together with other professions. But this cannot be done if we do not make ourselves more visible to the decision makers and thereby demonstrate our abilities to help societies through innovation and cross-border cooperation. We need to be needed by the politicians in order to be invited to present our solutions. Therefore, all engineers of Europe – from Norway to Malta and from Russia to Ireland – need to be proactive and demonstrate that we are a central partner and thereby an essential part of the solution – instead of staying in our personal comfort zone, standing on the sideline and observing. I know that this is not the way most engineers worked in the past, but it is necessary for society in order to be able to lay a positive foundation for the generations to come.

FEANI has started working this way in order to become more visible to both the European Commission and Parliament. We have produced several policy papers on various important topics. They are based on the competences of a united profession of more than 3.5 million engineers and have been approved by the General Assembly.

Moreover, we have intensified our communication and lobby activities through a personal effort by our new Secretary General, Dirk Bochar, who has placed FEANI in a unique position. Doors have been opened, making it up to me, the President – in close cooperation with the Vice-President and the other executive board members – to use our skills and our proficiency to guide the EU to the right actions.

I cannot do that myself – but with the help and the full support from all national engineering organisations across Europe, we can together create a better future for the next generations. That is my ambition on behalf of our profession.

National members appreciate having a European voice

Last month I had the pleasure to prepare, organise and chair the FEANI Secretary General's Meeting in Paris, at the premises of our French member "Conseil National des Ingénieurs et Scientifiques de France" (CNISF). FEANI National Secretary Generals from UK, FR, DE, IT, ESP, CH, CZ, NO, BG, DK, FIN, IRL and AT participated in this meeting, which – among others – focused on the engineering education and profession, and the results that came out of an international survey carried out by DE, UK and FR last year related thereto.

At the same time, it was an ideal opportunity to present an overview of my activities at FEANI over the last nine months and to seek their inputs and comments. Much attention went to our new FEANI website and to the approved FEANI Marketing and Communication Plan, which will be implemented over the next three years. Also valued was the on-going involvement to promote the engineerING card within the steering committee on the professional card of the European Commission's Directorate-General for the Internal Market, in light of the revision of Directive 2005/36 on professional qualifications. National members feel it important that they have a European voice in Brussels, and they appreciate the continued stream of EU-related information they are receiving. They highlighted that despite the numerous issues related to the engineering profession, it is important for FEANI to stay focused on the accomplishment of our strategic objectives: education, CPD, innovation, political influence, mobility, community building and information sharing should remain the key issues.

It's important to stay focused on the accomplishment of our strategic objectives.

Efficient and modern communication tools will be used, such as our homepage, our News and a regular and simple electronic newsletter starting in the second half of this year. Forthcoming projects for this calendar year will relate to the revision of our strategic plan and our statutes and bylaws, to the celebration of our association's 60th anniversary and to the preparation of a new, geographically wider survey. We will keep you posted on the outcome of all of those in due course.

Dirk Bochar
FEANI Secretary General

FEANI's website relaunch

To deliver optimised news and information to FEANI members and the interested public, the website www.feani.org was updated and reactivated on 11 April 2011. Here you will find well-structured and specific information about the federation. The website also provides links to the websites of all 31 national members – and much more.

In the period from 1 May to 1 June, the FEANI homepage registered 5611 visits from 3971 users; 66% of those related to new visits as opposed to the 1892 returning known users from the previous month. The largest number (45.5%) gained access through search engines, 28% found access directly and 26.5% came via reference sites (i.e. national members' sites). The average visiting time was 4 minutes and 8 seconds, and most visitors came from the UK, Spain and Germany.

Visit us: www.feani.org

European professional card opens up Europe

Within the framework of the Public Consultation on the Recognition of the Professional Qualifications Directive (PQD), the Commission invited all interested parties to attend a Public Hearing in February. The following is an extract from the speech given by Lars Bytoft, President of FEANI.

"For us who are here today at this meeting, the borders between the member states of Europe are not obstacles anymore. We are crossing them almost every day and take it for granted that we can. At the same time we have agreed to use one or two languages to be able to speak to one another and thereby exchange information.

Back in 1957 in the treaty establishing the European Economic Community (EEC), known as the Treaty of Rome, the signatories declared in the preamble: "…to lay the foundations of an ever closer union among the peoples of Europe, resolved to ensure the economic and social progress of their countries by common action to eliminate the barriers which divide Europe, affirming as the essential objective of their efforts the constant improvements of the living and working conditions of their peoples…" These principles are still central to fulfiling these ambitions and creating one single European market.

Too many barriers and obstacles

For individual engineers and the whole engineering profession there is a common language, which should allow us to provide our skills and knowledge all over the world – in the same way as medical doctors do. That language is based on the same principles – evidently – science and mathematics. We therefore have the theoretical ability to move within the borders of Europe, but in reality it is not that simple. There are still too many barriers and obstacles. This is why the introduction of a European professional card for the engineering profession is one of the necessary actions that needs to be taken if the politicians of today indeed want to walk the talk – and therefore really open up Europe and make it into that single common market, which was the ambition already expressed in 1957.

Increase mobility among engineers

In FEANI we have to represent all the engineering professions in 31 countries across Europe and therefore we have worked intensively to increase mobility among engineers. For us, a professional card was not an objective in itself; it was important to evaluate, what would be the added value and what current problems the introduction of such a card could solve. We ultimately ended up with the engineerING card. It is characterised by five features, which are key to its success and its acceptance as a professional card. Those features are:

1. Completeness: The information contained on the card is comprehensive, i.e. it provides a complete overview of the academic education, professional experience and further training of the cardholder.
2. Standardisation: The card provides information according to the European standards defined under the European Qualification Framework. At the same time the EUR-ACE criteria, the accreditation criteria for engineering studies adopted across Europe, also apply to academic education.
3. Independent testing and recognition: The information on the card is reliable. The qualifications are tested and recognised in the country of origin by an independent register commission that is made up of experts from universities, engineers' organisations and industry. This ensures that the engineerING card is widely recognised.
4. Flexibility through decentralised administration: The professional card is introduced and administered in a decentralised manner, i.e. in each individual member state.
5. Voluntariness: The card represents a service for all those engineers who want to be mobile within the EU. This ensures that it offers a needs-based solution and that unnecessary costs and bureaucracy are avoided.

> We have the theoretical ability to move within the borders of Europe, but in reality it's not that simple.

Thanks, Dad!

If we continue to do things in ways that are very protective of national interests, as we have done in the past, we will not be able to expand the pie, to create together and to generate wealth for the generations to come, through the use of all the competences within the EU. And we need to do that. Hopefully my daughter – who is just one year old – will look at me and the politicians of today and say: Thanks Dad, your generation actually enhanced mobility within Europe, maximising the living conditions for me and my generation."

Lars Bytoft, President of FEANI

Invitation

FEANI – EU Dinner Debate
The European Professional Card – Fostering Innovation in Europe

28 June 2011: 18.00 – 22.30 hrs

At the European Parliament – Spinelli Building, Rue Wiertz, 60 / 1000-BRUSSELS

Academic Session	18.00 – 20.00 hrs (7th Floor – Meeting Room C 050)
Dinner	20.15 – 22.30 hrs (Salons of the EU Parliament – Ground Floor)

FEANI plays an active role within the EU Steering Group on the European Professional Card. The objectives of this Steering Group are to explore the feasibility and the challenges linked to the development of a European professional card in the context of the revision of the Professional Qualifications Directive 2005/36 and the preparation of a Green Paper for autumn 2011.

The members of the European Parliament, Evelyne Gebhardt and Bernadette Vergnaud of the IMCO Committee, as well as the Chairman of the Steering Committee, Jürgen Tiedje, together with FEANI officials, will meet on 28 June 2011 with professional organisations, stakeholders and the public at large to enter into a debate on the current status.

What would be the added value of a European professional card? How can certain specific elements be integrated for certain professions? Should the card be made obligatory for professionals and how would it work in cases of mobility between regulating and non-regulating member states? Who would issue the card, in what language and what information should be present on the card? What was the outcome of the Public Consultation Paper (7/1-15/3/2011) and what are the tendencies?

If you wish to receive an answer to these and other questions, register free of charge for the FEANI-EU Dinner Debate at christa.rosatzin@feani.org or call 02 639 039-0.

To learn more about the FEANI Professional Card, see the presentation on the website www.feani.org

Dr. Rafael F. Aller
Vice-President of FEANI

Innovation in action

Innovation and innovation management are higher priorities for Europe than research. But the strategy developed so far in innovation is unfortunately not enough. Considering that engineers are key elements of innovation, FEANI calls on the European Commission for new action.

The necessity of innovation to maintain and even improve European countries' positions in the world economic situation is beyond doubt. The European Commission (EC) has long been working to promote and support innovation across many strategies, programmes and projects supported by structural funds, soft loans, etc. All large companies and some SMEs are conscious of the importance of innovation as a competitive edge, but not all activities in a country nor all functions in a company seem to be so heavily involved. The strategy developed so far in innovation, both at European and member state level, with a medium to long-term perspective, is unfortunately not enough.

Not a specific job

Innovation is today a "fashionable" term but, in a globalised and competitive context, it is crucial for the future of Europe. The Oslo Manual defines and fully develops the meaning of innovation and the main types that can be classified.

It should be pointed out that innovation is not to be confused with invention or research and that innovation exists, or must exist, in every department of a company or a public institution. Innovation may concern a product (an old as well as a new product) or a service, a process (to develop, produce, distribute or sell a product or a service), a marketing method or an organisational method (in business, distribution, external relations or finance). Innovation is not a specific job. Innovations can be proposed by anyone and are not the exclusive domain of one particular department such as research and development (R&D) or even management.

The two main drivers of innovation should be the universities, research actors par excellence, and business sectors that invest in innovation and improving management thereof. The action of these two drivers should promote:

- A sustained value creation in innovative activity,
- A quality education supported by a provision under continuous review (complemented by training activities in the universities as well as in companies),
- Internalisation of the need to address R&D as well as innovation with a systematic approach.

Engineers' behaviour and feelings about innovation

A recent survey conducted in France on engineers' behaviour and feelings about innovation in their company or institution brought up several interesting points:
Innovation strategy exists and is known in large companies but seldom in SMEs.

> No engineer can say that innovation is not part of his work.

In general, innovative work in larger companies is organised into projects. In small companies, when it exists, it is usually much more informal. Innovation is supported by a general consensus in all areas, but there is a large difference in practice, with only 30% of engineers identifying an atmosphere conducive to innovation in their work environment.

All engineers, whatever their functions, said that innovation was an important part of their activity. But these engineers also mentioned that innovation was limited by several obstacles, of which the following are particularly of note: short-term priority for companies when innovation often requires some time; innovation often requires investment and involves a certain financial risk; negative reactions

inside companies to novelty, such as: “we have never done this before”, or “this will not work”; employees, in particular engineers, have their normal job to perform and they lack time to elaborate new ideas and to develop innovative projects; more generally, an unfavourable atmosphere that is not conducive to innovation.

Engineers are key elements of innovation

Of course, it is assumed that innovation is clearly a multidisciplinary field in which interdisciplinary teams often work, but the fact remains that this activity is crucial in the culture and the behaviour of the engineers for their specific training in the mastery of technology (in the wider sense of the term) and its implementation. No engineer can say that innovation is not part of his/her work, whatever that may be. Considering that engineers are key elements of innovation, in all its aspects, FEANI has to ask: are engineers correctly prepared to innovate and to lead innovation in their sector? Are engineers correctly managed in this function (in terms of freedom and control) in large as well as in small companies?

Boost the innovative spirit

First, it takes better training, initial training and life-long learning to allow engineers to innovate, thus improving the support and management of innovation, both in business and in institutions. Second, we have to boost the innovative spirit of European engineers by all means, including benchmarking within and between different economic sectors. Third, we have to promote examples of innovative engineers and innovative companies (large and more importantly small businesses). Fourth, in comparisons of universities, as in the new university ranking project, more attention should be given to innovation as well as start-ups emerging from these institutions, than to the number of Nobel prizes.

Programmes and funding arrangements exist, which have been developed by the EC through various financial instruments, such as the Competitiveness and Innovation Framework Programme (CIP), the 7th Framework Programme for Research and Technological Development and the European Structural Funds’ Operational Programmes. There are many services available, such as the support services for innovators (enterprises, start-ups, research institutes, etc.) and the services provided by the Enterprise Europe Network (EEN), which include the Intellectual Property Rights (IPR) Helpdesk, the Business Innovation Centres (BIC), the European e-Business Support Network (eBSN) for SMEs, the Self-Assessment Innovation Management Tool, the Business Plan Development Tool and Europe INNOVA, an initiative for innovation professionals.

Factors for improving innovation

To improve innovation in Europe we need to consider several important factors:

- Development of programmes and funding for promoting innovation, from public administrations, both at the EC and the member states
- Strengthening the transfer of research results into commercial applications
- Extending cooperation between universities/research institutions and companies
- Implementation of numerous R&D and innovation programmes by companies (mostly large), specialised

institutions and research centres
- Motivation and support (R&D funds) for more cooperation between companies, with universities / research institutions integrated in the cooperation process during the pre-competition phase
- Real professionals: the engineers, with their innate inclination for innovation, which led them to become engineers, and with the corresponding technical and academic training for innovation, whichever aera they may be in and at whatever level
- Support for interdisciplinary cooperation, not only within the different engineering disciplines, but also with other disciplines (socio-economic aspects)
- Simplifying the conditions for venture capital and business angels
- Supporting standardisation activities during the design process of applications/products (especially support for SMEs)
- Improving management's knowledge of EU funding, and reducing bureaucracy in applying for funds
- A European organisation, FEANI, which represents through its members, the national associations, about four million engineers in all branches and levels in Europe. FEANI is willing and prepared to participate in all types of actions.

Position paper by FEANI

The purpose of this position paper is to:
- Declare the fundamental value of innovation for nearly four million engineers represented by FEANI, working directly in innovation or helping other professionals get involved in innovation
- Position FEANI so that it can support the EC and its institutions and help them improve the development of innovation, adding significant value to technological progress, improving competitiveness and ultimately facilitating the growth of the European economy
- Ask the EC and its appropriate Directorates-General for new actions, such as encouraging the inclusion of innovation in the curriculum and practices of universities and engineering schools, through works and projects (not only R&D) or encouraging innovation in all areas of production, services and management and even administration
- Follow up, both at EC level as well as within the scope of the member states, the implementation of European policies in innovation, monitoring, updating and optimising the priorities for Europe, as well as analysing the effectiveness of necessary financial instruments and the actual results of innovation.

Conclusions

FEANI considers that innovation is a key factor in technological development as well as in socio-economic welfare, and even more so in a crisis like the one in which we currently find ourselves. European and national support programmes and financial instruments are obviously very valuable and necessary, but they are not sufficient. They are totally inefficient if we do not have the right people to innovate and to manage innovation. We should instil the value of innovation in the minds of young pupils, students and professionals who are, ultimately, those who will go on to run companies and institutions. The value of innovation must especially be understood by engineers as professionals with more adequate preparation.

Managing innovation includes integrating other fundamental values in its objectives, such as customer satisfaction (which starts with the design of the product or service and not in the marketing department), sustainable development and environmental protection and energy saving. It is clear that their innate qualities, training and responsibilities put engineers in the best position to have a key role in innovation. In representing them, FEANI is therefore, by its very nature, a key element in helping them to fulfil this role.

Dr. Rafael F. Aller, Vice-President of FEANI

Programmes and services available

Entrepreneurship and Innovation Programme (EIP)
The EIP, one of the specific programmes under the Competitiveness and Innovation Framework Programme (CIP), seeks to support innovation in SMEs, focusing on:
- Access to finance through CIP Financial Instruments,
- The Enterprise Europe Network, which offers business and innovation service centres and provides enterprises with a range of quality and free-of-charge services to help make them more competitive,
- Transnational associations support networking of different actors in the innovation process and innovative companies, including initiatives benchmarking and exchange of best practices
- Eco-innovation pilot and market replication projects for the testing of innovative products, processes and services that are not fully marketed due to risks that are aimed at reducing environmental impacts, preventing pollution, or achieving a more efficient use of natural resources.

Information and Communication Technologies Policy Support Programme (ICT PSP)
The ICT PSP aims more broadly at stimulating the uptake of innovative ICT-based services and the exploitation of digital content across Europe by citizens, businesses and governments, in particular SMEs.

Intelligent Energy Europe Programme (IEE)
With about 730 million euros of funds available between 2007 and 2013, the IEE will help deliver on the ambitious climate change and energy targets that the EU fixed in September.

Engineers understand forward thinking

Jan Willem Proper, FEANI
European Monitoring Committee

If you are anxious about the future of your career, you are not alone. Concerns are not only about job scope and relevant functional areas, but also about the increased level of uncertainties and opportunities. Perhaps what many engineers seek is a "crystal ball" to help manage this uncertainty.

Managing this uncertainty can partly be achieved by acquiring a deeper understanding of actual business and systematic decision-making processes. You have to make some critical "bets" and to stack the deck in your favour. You also need to understand business and organisational processes and so place smarter bets by aligning to these practices.

Most smart companies understand that global perspectives are challenging and develop scenarios to stack the deck by implementing smarter processes and by working with smarter people. To play smarter means the professional of the future has to have the ability to accelerate his/her learning process and to respond and adapt to different working environments. This may involve enhanced professional mobility, and the EU is dedicated to removing existing obstacles to changing jobs between member states.

Encouraging excellence, creativity and innovation

FEANI represents the engineering profession in Europe. By working through national engineering organisations, FEANI aims to help engineers by improving their career development and, in particular, to affirm their professional identity. This includes promoting excellence in education, acknowledging professional qualifications and encouraging excellence, creativity and innovation. While respecting the diversity of professional interests of engineers, facilitation of their free movement and establishment needs to improve and to be safeguarded.

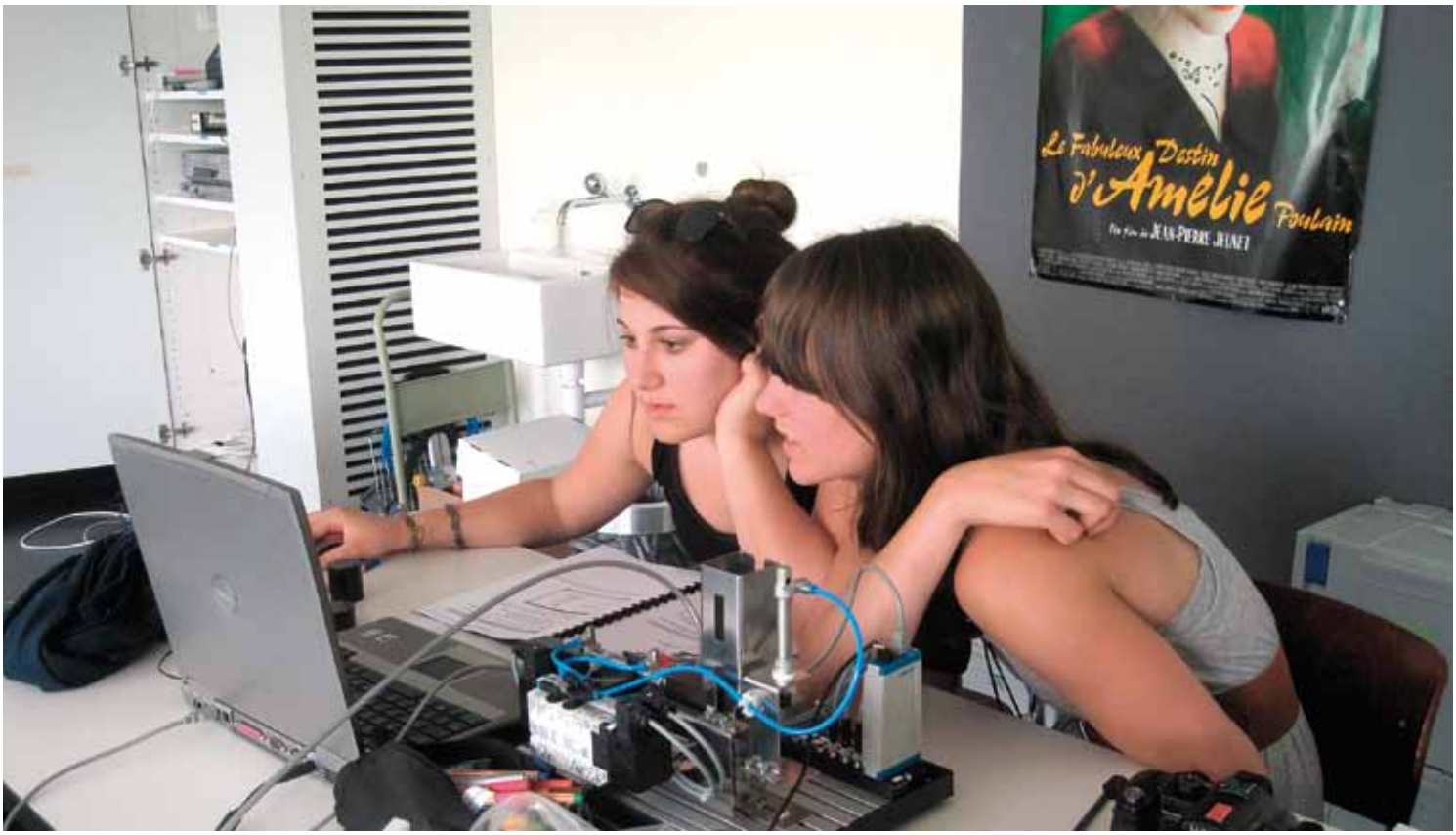
Think forward, stack the deck in your favour, place smarter bets and improve your chances of success by going to the website www.feani.org.

Jan Willem Proper, chair of FEANI European Monitoring Committee, and associate professor for transport and logistics, NHTV University, Breda, Netherlands
www.nhtv.nl

FEANI is supporting you

The demand for internationally mobile engineers will grow because of the differences in the availability of engineers across national borders. The "European Professional Qualifications Directive" is designed to remove complicated processes for recognising professional and educational qualifications. FEANI is at the forefront of supporting mobility and does so by assuring the quality of educational and professional qualifications by offering:

- An index listing the institutions of higher engineering education in European countries represented within FEANI, and their engineering programs;
- The EUR ING title delivered by FEANI is designed as a guarantee of competence for professional engineers. The EUR ING's are listed in the FEANI Register, a database maintained by the Secretariat General in Brussels;
- A professional card developed to facilitate the recognition of professional engineering educational qualifications. The professional card, called the engineerING card, ensures that qualifications are reliably tested and clearly documented by competent bodies.



We need to make a greater effort to attract children into STEM subjects.

From lab to leader

FEANI Secretary General Dirk Bochar and Engineering Council CEO Jon Prichard advocate supporting research in engineering to strengthen Europe's competitiveness.

Engineers play an essential role in many economic sectors, including manufacturing, infrastructure and communication. While all are important, one key element in maintaining a sustainable European economy is to promote innovation and development in the manufacturing sector, as this accounts for over half the EU gross domestic product (GDP). The 22% of GDP represented by direct manufacturing is leveraged by the value of manufacturing-related support industry. Such a large proportion cannot be realistically replaced by reliance on service industries, particularly as some services – for example, an engineering consultancy – may require an indigenous industry in which to develop saleable knowledge. Engineering and associated activities are major contributors to Europe's balance of trade with the rest of the world. The EU25 may have an overall deficit of 60 billion euros in trade in goods but manufactured products generate a surplus of 130 billion euros. Trade in engineering and construction services (plus associated architectural and technical consultancy) is in surplus by 10 billion euros.

Engineering science and research: the key issues

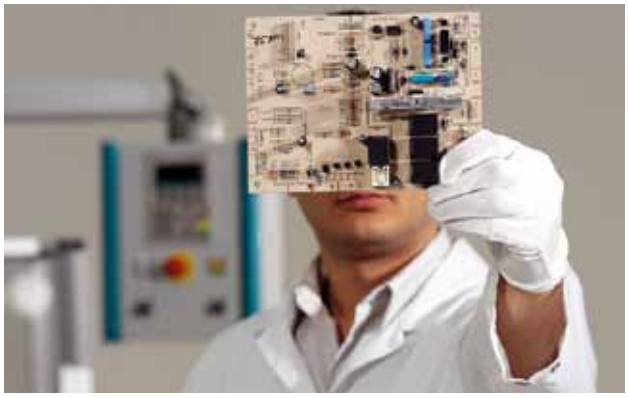
In the UK, the Engineering and Physical Sciences Research Council has identified six societal challenges as the priority areas for funding engineering research: living with environmental change, energy, lifelong health and well-being, global uncertainties, global food security and digital economy. Engineering clearly has a significant contribution to make across all of these areas; and engineers today are required not only to be managers of technical matters, but leaders with technical knowledge and expertise. US President Roosevelt's Science Advisor Vannevar Bush stated that "the engineer is not primarily a physicist or a businessman or inventor, but someone who acquires some of the skills and knowledge of each of these and is capable of successfully developing and applying new devices on a grand scale. The engineer is both a scientist and a businessman. Engineering is a scientific profession, yet the test of the engineer's work lies not in the laboratory, but in the marketplace".

The need to attract young scientists and engineers

The first assumption is that jobs that are undertaken by engineers today are likely to be undertaken by engineers tomorrow. Therefore, we need to look at demographics to forecast replacement needs for the next ten years. The key driver will be retirement. On top of that, forecasts show that societal challenges and the impact of technology will mean an increase in demand for science, technology, engineering and maths (STEM) graduates. In the UK the number of children in each year of birth has decreased over the past ten years from circa 800,000 (when approximately 120,000 read STEM degrees) to 700,000 currently. The percentage of each year reading STEM degrees has remained constant at approximately 15%. The talent pool has shrunk; therefore, we need to make greater effort to attract children into STEM subjects, which is why the government, despite cuts in other areas of higher education, has given protected funding to some STEM subjects.

Male students more interested in school science

Another problem relates to gender-related differences in interest in STEM subjects. In the Netherlands, for example, it can be noted that of all the Dutch female students, only around 26% are interested in school science – the lowest percentage of all 27 EU countries. In Japan and Finland, less than 30% of girls are interested in school science, with the lack of interest of Finnish female students being particularly surprising as the rate of enrolment and graduates in science and technology studies is very high in the country. Without exception, male students are more interested in school science than female students; in some countries, however, the difference in interest between male and female students is larger than in others. In the Netherlands, Germany, Norway, Latvia and Japan, the difference in interest between boys and girls is very pronounced, with a gap of more than 10% (PISA, 2006).



Engineering is a scientific profession, yet the test of the engineer's work lies in the marketplace.

Facing completely new challenges

An engineering education implies the development of the capacities to ask the right questions and to deliver suitable solutions to often complicated problems. A correct problem analysis is always crucial for an effective solution and the design of the solution is the capability by which engineers distinguish themselves from scientists who endlessly ask the same question and always dig deeper, not necessarily delivering practical solutions. Carefully asking the right questions becomes even more important for the engineer of the future, as the engineering profession is constantly facing completely new challenges. Building on existing solutions is no longer sufficient. For example, with regard to the issue of global warming, we can try to reduce the consequences or focus on how we must learn how to live with the consequences. The solution of the engineer will depend on the question raised.

The solution of the engineer will depend on the question raised.

Why Europe needs more engineers

In order to have enough high-skilled workers in science, technology and related fields, the labour market will continue to rely heavily on both the quality of graduates from higher education institutes and apprenticeships and similar programmes for technicians. Governments must therefore invest in building stronger research and development sectors, thereby strengthening the international position of their specific country. Creating a potentially large and highly educated workforce requires an easily accessible and high-quality educational system. Including students (and future students) from all sections of the population assures optimal use of the available talent. Engineers are problem solvers; they have a deep technical knowledge combined with a broad field of interest. They must also learn to communicate efficiently, i.e. not only explain what they do, but also listen to what is required, because the authority of an engineer has been submitted to the same transformation as that of a medical doctor: Their judgement was never questioned fifty years ago, but this has changed. In addition, the engineer must be able to better communicate with third parties that surround them. Introducing new ideas and designs is one thing, but they must also keep the impact of their innovations in mind, which is not always a simple thing to do. The dialogue is also a difficult one because of the zero-defects mentality: Consumers expect that everything must always work straight away and without faults.

The role of engineering in the EU 2020 strategy

Within the framework of the Lisbon objectives, the EU aspires to become the most dynamic and competitive knowledge economy in the world. The globalisation of the world economy presents engineering with new challenges, such as providing populations and individuals with access to global knowledge and markets by enhancing transportation systems and by the diffusion of information and fast internet technologies. New and prospective challenges for engineering in the future in the context of the EU 2020 strategy will relate to energy, information and systems, materials and bioengineering.

George Bugliarello stated in the Journal of Urban Technology (2008) that it is becoming increasingly possible through nanotechnology and bio-nanotechnology to create, ion-by-ion, atom-by-atom or molecule-by-molecule, materials with a broad range of capabilities, from enhanced structural strength to sensing, transferring energy, interacting with light and changing characteristics on command. Composite materials, also utilising a variety of natural materials, make it possible to create strong, lightweight structures. Materials and energy are linked in the emerging concept of deconstructable structures and in the development of recycling, so as to reuse as much as possible the materials and the energy embedded within them.

A new interdisciplinary thrust of engineering can be expected to emerge.

Future challenges responding to universal needs

Developments in fuel cells, biomass and waste incinerators, bacterial electricity generators, biofuel engines, photovoltaic generators and thermal collectors with greater efficiencies, in both large- and small-scale advanced wind turbines and in micro-hydro turbines, all have immediate applications to development. A future challenge responding to a universal need is the design of batteries with greater specific storage capacity per unit weight. Advanced new lighting systems can replace CO_2-generating fuel burning lamps and fires, as well as inefficient incandescent bulbs. Nuclear fusion is still a long-term hope, but building a large number of advanced, inherently stable fission reactors with a safe proliferation-proof fuel cycle to supply base power, will become increasingly necessary to reduce greenhouse emissions in the absence of other kinds of energy supply.

Information is key

In the information domain, personal portable devices, which are revolutionising individual communications and access to the internet, will become ever more integrated into single multifunction, multipurpose devices that can combine voice, data, financial transactions and imaging thanks to the future development of billion transistor microchips and universal open standards. This will have great impact on areas not reached by traditional telephone systems for reasons of geography or cost. Continuing advances in semiconductor electronics and computer architecture will make ever more powerful computers possible, with enormous impact on engineering analysis and design, as well as on the study of biological, social and environmental phenomena. Information is key to increasing efficiency in the use of energy and materials. It is also key – in synergy with systems engineering – to globally improving the performance of health care systems, social services, manufacturing, transportation and other infrastructural systems, agriculture and geophysics.

A new interdisciplinary thrust of engineering

The interaction of engineering with biology and medicine will be of increasing significance in health care, industry and agriculture and in everyday life: biological treatments of drinking water, the engineering of all sorts of sophisticated artificial organs (limbs and ocular prostheses), advances in instrumentation and sensors, as well as more powerful and faster diagnostic approaches and drug delivery to the organism, accelerated vaccine production, and the engineering of proteins, genes and organisms. Many of these advances – of potentially great significance for development – are made possible by progress in miniaturisation (e.g. the laboratory or the factory on a chip), computational soft- and hardware, imaging and visualisation, and by mechatronics – the combination of mechanical devices and electronics. Out of all these new challenges and possibilities, a new interdisciplinary thrust of engineering can be expected to emerge, which can perhaps be called “engineering for development”, which would respond to the global need for engineers who understand the problems of human development and sustainability. Engineers are motivated by a sense of the

future and are able to interact with other disciplines, with communities and with political leaders, to design and implement solutions. In this context, an often overlooked, but essential responsibility of engineering is to help recognise, prevent or mitigate possible unwanted consequences of new technological developments, such as social instabilities caused by too rapid an introduction of automation.

Dirk Bochar,
Secretary General
of FEANI

Jon Prichard,
CEO of the Engineering
Council, UK

First report on engineers in Italy

The Centre of Study (Centro Studi) of the Italian Consiglio Nazionale degli Ingegneri has carried out a survey on the education processes, the labour dynamics, the access and the exercise of free profession of engineers in Italy.

All in all, the situation is positive both from the academic point of view and from the professional one. From the point of view of engineering education, Italian engineering faculties are not experiencing a decrease in matriculations as it is in other European countries. On the contrary, in 2010, the total number of new matriculations in the universities increased, compared to the previous year, by 0.4%, with 3.7% of the total in engineering faculties. In this respect, the most relevant datum concerns women, whose matriculations amount to 23.8% of the total. Furthermore, of all students graduating at the end of the academic year, 23.1% are women.

Gap between wages in Italy and elsewhere

From the point of view of the profession, even if they are under stress because of the crisis, engineers still are in the enviable situation of full employment, and the Ordini register an increasing number of new members because free profession still attracts young people significantly. Engineers are even consolidating their position in a service market, which is undergoing a difficult period, as well as confirming themselves as a highly qualified component of the workforce, engineering the future development of their country. A number of serious problems remain, however, such as wage levels that are significantly lower than in the other major European countries, even if higher compared to other Italian professions (about 1300 euros per month as opposed to 1100). What's more, the gap between wages in Italy and elsewhere in Europe widens even more after five years in the profession (about 1650 euros against 2500 euros a month, on average).

Disequilibrium between supply and demand

The survey focuses on the territorial disequilibrium between the supply and demand of engineering competences. The supply is essentially centred on private enterprises, while free profession and, above all, recruitments in the public administrations still play an absolutely marginal role. In northern Italy, in 2009, there was a shortfall of more than

400 engineers to meet the requirements of the production sector. At the same time, in some of the southern regions the situation appeared particularly critical as they registered a surplus of more than 400 engineers. This surplus will be managed, as usual, either by migration to the north of Italy or abroad or by engineers taking underpaid jobs in the south for which they are overqualified. A free choice of profession is often impossible due to limited employment options. All this results in a reduction of the professional income, which is 30% lower than the national average and 50% to 60% lower in the centre-northern regions, which are economically healthier.

The failure of short-cycle academic education (the first level in the Bologna reform), which is experienced by students with a part of their studies behind them and no title to be spent on the labour market, is well highlighted. This is also due to the fact that the productive system shows an increasing reluctance towards this kind of graduates.

Competition based on the costs

Finally, the survey focuses on the marginalisation of free professionals in the public procurement market. In 2010, the average amount of awards was 200,000 euros, with a downward average to 39.1%, as concerns bids relevant to design without the execution of work. When the awards are relevant to the joint activities of design and execution of work, the downwards average amounts to 21.4%. Professional services are therefore abolished by a competition based on the element "cost", which is resulting in an expulsion of the free professionals from the market of public procurement.

A free choice of profession is often impossible due to limited employment options.

The survey was published in February 2011 as "First Report on Engineers in Italy" and is downloadable from www.centrostudicni.it

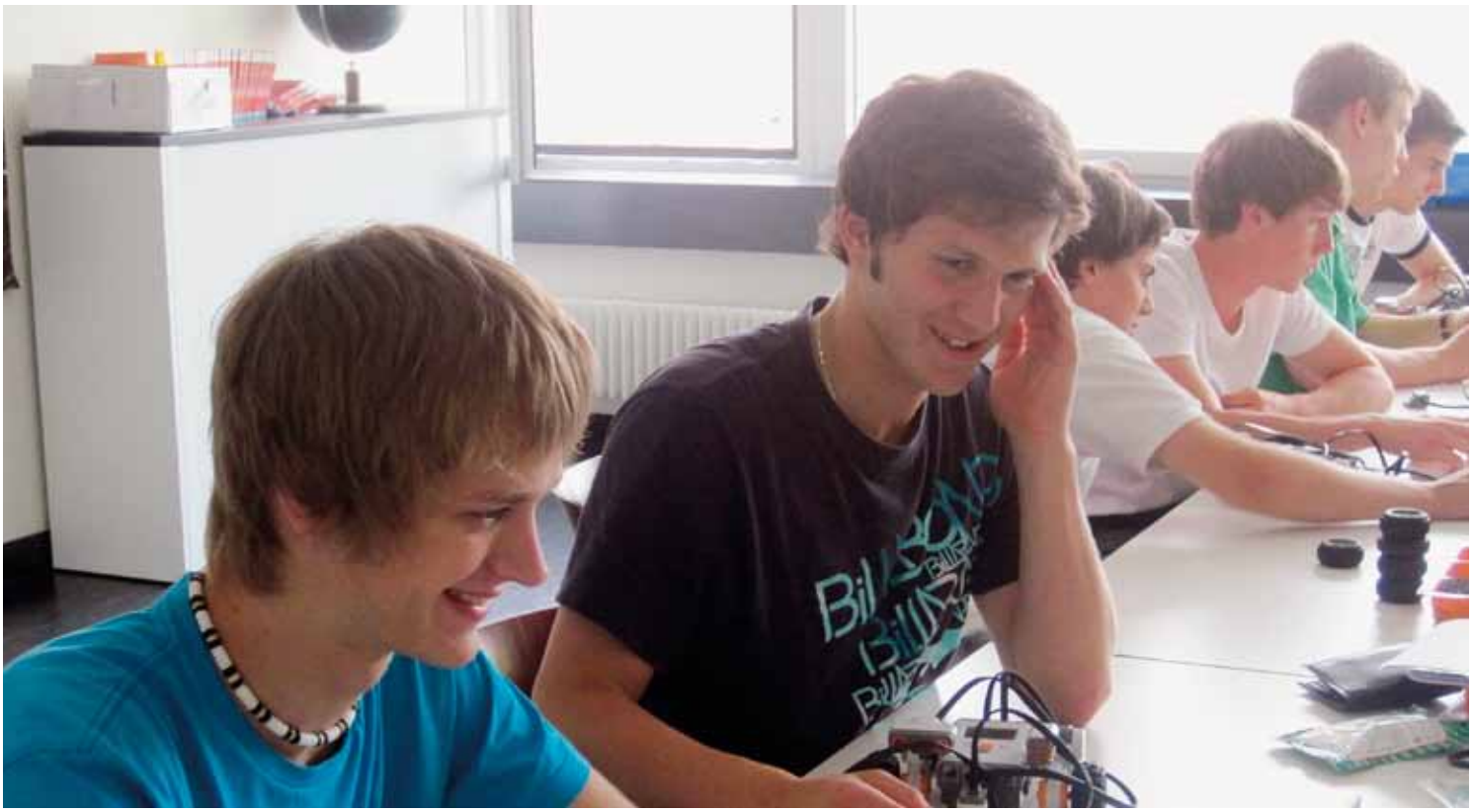
Consiglio Nazionale degli Ingegneri, Centro Studi, Rome, Italy
www.centrostudicni.it

William Grimson, Executive member of Engineers Ireland

The formation of the chartered engineer

Whether an applicant can be considered to be a chartered engineer, depends on both his/her achievement of programme learning outcomes and his/her competences attained through working in an engineering environment. The competences expected of an engineer have evolved over the years and have been the subject of international discussions.

Society in general is entitled to expect at the very least a certain minimum standard of behaviour and service from professionals. And underlying the interaction between society and professions is trust. The question of trust is a complex one and involves society and both individuals within a profession and organisational units such as either local companies or global companies. In her BBC 2002 Reith Lecture, Baroness Onora O'Neill recounted that Confucius told his disciple Tsze-Kung that three things are needed for government: weapons, food and trust. If a ruler cannot hold on to all three, he should give up weapons first and food next. Trust should be guarded to the end; "without trust we cannot stand". O'Neill went on to say Confucius' thought still convinces us as to its validity. It is not only rulers and governments who prize and need trust. Each of us and every profession and every institution needs trust. Taking a broad definition of "profession" it is hard to avoid



It is important that students learn how to work with and for others.

observing where trust has been betrayed in recent years. The church, law, politics, medicine, finance all have suffered in varying degrees from bad publicity following unacceptable behaviour at all levels of those professions.

The formation of an engineer is a life-long process

The question for the engineering profession and those responsible for the education of engineers is how can trust be engendered and maintained both in individuals and the body of the profession? And how does engineering address the general question of the standard necessary to be an engineer and hence the issue of trust? The formation of an engineer is a process that is lifelong and extends from early childhood play experiences to professional retirement and beyond. Put another way, the accumulation of knowledge of the world and how things work by an individual is not confined to a fixed period involving undergraduate education and immediate postgraduate experience. However, when it comes to adjudicating as to whether an individual can be considered a professional engineer, and in Ireland's case a chartered engineer, it is practical to consider the formation as being a period consisting of two approximately equal phases totalling a minimum of eight years, involving education in an approved programme in an engineering college and relevant postgraduate work experience.

The main and twin features of the criteria by which a judgement is made as to whether an applicant can be considered to be a chartered engineer are achievement of programme learning outcomes and competences attained through working in an engineering environment. In the case of Engineers Ireland (EI) there is a formal accreditation process by which colleges submit their engineering programmes for review, which if approved, means that the graduates of those programmes are deemed to have met the educational standard of EI. The competences expected of an engineer have evolved over the years and have been the subject of international discussions which aim to provide a global standard, in part, to enhance the mobility of engineers. By necessity, the competences are generic and it is the responsibility of applicants to illustrate how they as individuals have gained and demonstrated the prescribed competences in a particular engineering domain. The judgement involved is one of peer review which allows for the full range of engineering sub-disciplines to be catered for at an interview stage using an expert panel.

Programme outcomes

The educational formation phase of an engineer is specified in terms of outcomes. It is not that entry requirements, curriculum content and the transformative process of education are unimportant, rather they serve to meet the end objectives that are expressed as a set of generic learning outcomes. And these learning outcomes are further qualified by a set of programme learning areas, which in their instantiation become discipline specific.

Engineers Ireland specifies the following programme outcomes which apply to Master's degree engineering programmes aimed at satisfying the education standard which will apply to the title of "chartered engineer" from 2013. It is to be understood that these programme outcomes are achieved through the learning outcomes of all modules in all years of the Master's degree programme and any preceding Bachelor's degree programmes, involving nominally five years of study and attracting a minimum of 300 ECTS credits.

Programmes must enable graduates to demonstrate:

– Knowledge and understanding of the mathematics, sciences, engineering sciences and technologies underpinning their branch of engineering

- The ability to identify, formulate, analyse, and solve engineering problems
- The ability to design components, systems or processes to meet specific needs
- The ability to design and conduct experiments and to apply a range of standard and specialised research tools and techniques
- Understanding of the need for high ethical standards in the practice of engineering, including the responsibilities of the engineering profession towards people and the environment
- The ability to work effectively as an individual, in teams and in multidisciplinary settings, together with the capacity to undertake lifelong learning
- The ability to communicate effectively with the engineering community and with society at large.

Social and commercial context of the engineer's work

Engineers Ireland has determined that the study of six programme areas is necessary; they are: Sciences and mathematics, discipline-specific technology, software and information systems, creativity and innovation, engineering practice, and social and business context.

Bearing in mind the emphasis on society's trust in the engineering profession, it is worth detailing what is intended in "social and business context": Engineering is directed to developing, providing and maintaining infrastructure, goods, systems and services for industry and the community. Programmes need to develop an awareness of the social and commercial context of the engineer's work. This includes an understanding of issues relating to today's multicultural workforce, of socio-technology and of the constraints on technological developments imposed by health and safety, the environment, codes of practice, politics, the law and financial viability, management issues and the means by which the various risks may be assessed and managed. Students should be made aware of the various methods for the assessment of quality and fitness for purpose of engineering products and systems, and understand how to achieve these attributes in design and development. They should be given ample opportunity to analyse and discuss the ethical consequences of their decisions.

Society expects professional behaviour

Engineering invariably involves a team approach; it is important therefore that students learn how to work with and for others, both within and outside their own disciplines. They should have some knowledge of team dynamics and should be capable of exercising leadership. Programmes should develop the student's ability to analyse, present and communicate technical information to a range of audiences. Society expects professional behaviour from its professional engineers and therefore programmes should enable students to become familiar with the expectations and standards inherent in professional codes of conduct. The importance of students identifying their own learning needs and exercising responsibility for their own continuing professional development should be stressed.

An engineer should promote innovation and technology transfer.

Competences of a chartered engineer

The standard expected of a professional engineer, or in the case of Ireland a chartered engineer, is articulated as a set of competences that the engineer should have developed and will in their future be obliged to maintain and extend. Whilst the competences are necessarily generic, the process by which they are judged in individual cases of applicants applying to become a chartered engineer rests strongly on the demonstration of how they have been gained and therefore relevance to a specific engineering sub-discipline arises naturally.

The following five competences have to be considered as a whole and deficiencies in any one area cannot be compensated by exceptional ability in another.

- Competence 1: Use a combination of general and specialist engineering knowledge and understanding to optimise the application of existing and emerging technology. This normally includes an ability to: maintain a sound theoretical approach in enabling the introduction of new and advancing technology and other relevant developments; apply a creative problem-solving approach; look for ways of exploiting emerging technologies to enhance current practices and to ensure continuing fitness for purpose of engineered products and services; promote innovation and technology transfer.
- Competence 2: Apply appropriate theoretical and practical methods to the analysis and solution of engineering problems. This normally includes an ability to: identify potential projects and opportunities; conduct appropriate research, and undertake design and development of possible solutions; plan and implement solutions, taking a holistic approach to cost, benefits, safety, reliability, appearance and environmental impact; evaluate the solutions and make improvements.

- Competence 3: Provide technical, commercial and managerial leadership. This normally includes an ability to: plan for effective project implementation; plan, budget, organise, direct and control tasks, people or resources; develop the capabilities of staff to meet the demands of changing technical and managerial requirements; bring about continuous improvement through quality management.
- Competence 4: Use effective communication and interpersonal skills. This normally includes an ability to: work and communicate with others at all levels; effectively present and discuss ideas and plans; build teams and negotiate.
- Competence 5: Make a personal commitment to abide by the appropriate code of professional conduct, recognising obligations to society, the profession and the environment. In order to satisfy this commitment, Chartered Engineers must: comply with codes and rules and conduct; manage and apply safe systems of work; undertake their engineering work in compliance with the codes of practice on risk and the environment; carry out the continuing professional development necessary to ensure competence in his/her areas of future intended practice.

Process of application and interview

The applicant to become a chartered engineer writes a report, the purpose of which is to provide a clear, comprehensive account of their career in terms of the following elements: chronological details of career; training courses undertaken; initial professional development; the name of the company/organisation providing employment; the title of the position held, and level of responsibility; the position, qualifications and/or membership of professional bodies of immediate superiors; two essays offering the candidate the opportunity to articulate opinions on important topics relevant to the professional practice of engineering.

Maintaining standards

Prior to making a submission, each application has to be validated by two supporters of the applicant who are chartered engineers familiar with all or part of the career being examined. The report is subsequently assessed and, if judged to be of the appropriate standard, the application proceeds to the professional interview stage. The interview panel consists of three members of Engineers Ireland who are chartered engineers and who are considered competent by a board of examiners to make recommendations on the suitability of candidates for the title of chartered engineer.

The members of the interview panel are required to satisfy themselves that the candidate has attained an acceptable level in the competences based on the report and a one hour interview. Unsuccessful candidates are provided with the information regarding where they fall short of the standard. It is worth noting that there are a number of ways by which standards are maintained. All panel members receive training and experienced chairs are utilised who act as mentors for future chairs. In addition, visitors from professional bodies in other jurisdictions occasionally observe proceedings and provide useful feedback. This is an important exercise that underpins the various international agreements by which Irish engineers are recognised in various parts of the world.

Conclusion

Internationally, there has been a convergence of thinking when it comes to expressing engineering programme learning outcomes. The work of EUR-ACE (European Accredited Engineering), ABET (Accreditation Board for Engineering and Technology), and others throughout the world did not occur in isolation and valuable lessons have been learned as to what constitutes the criteria by which an engineering programme can be reviewed and accredited. A further step has been taken to ensure that accreditation processes are robust and reliable. In that regard, Engineers Ireland is one of the organisations that has been granted the accreditation label of EUR-ACE.

Competences four and five, set out in this article, articulate the requirements that an engineer should behave ethically and be effective in communicating with those inside and outside the profession. Referring to the learning outcomes, it is clear that the educational groundwork is specified to prepare for competences four and five. A fundamental question to be asked of all accreditation bodies is the extent to which due attention is given in the curriculum to these areas of learning. Bearing in mind the impact that engineering makes on our world, the formation of engineers has never been more important and Engineers Ireland are happy to contribute to the debate on the subject and to learn from the experiences of others.

William Grimson, Engineers Ireland, Dublin, Ireland
www.engineersireland.ie

At the 25th German Day of Engineers, the VDI conferred the Grashof Medal, the highest award of the VDI, on Prof. Hans-Jörg Bullinger (second from right), President of the Fraunhofer Society, and Dr. Bernard Krone (middle), owner and managing partner of Bernard Krone Holding. Bullinger and Krone were awarded for their many years of outstanding work and accomplishments in the field of engineering. In addition, Prof. Michael Pohl (second from left) was appointed honorary member for his remarkable service to the VDI. On the left, VDI Director Mr Willi Fuchs, on the right, VDI President Mr Bruno O. Braun.

25th German Day of Engineers a great success

"Made INGermany" was the motto for the 25th German Day of Engineers held on 24 May 2011 in Düsseldorf. Renowned speakers argued in favour of Germany as a technology location.

More than 1,200 guests attended an interesting panel discussion: TV personality Tom Buhrow was the moderator of the discussion, in which Professor Bruno O. Braun, President of the Association of German Engineers (VDI) made a clear case for a future-oriented Germany as a technology location, but also stressed that such a goal could be successfully pursued only through the interaction of businesses, society as a whole and politics. In light of the new German energy policy, Professor Michael Hüther, Director at the Cologne Institute for Economic Research, warned of a possible exodus of energy-intensive industries. Professor Klaus Dieter Maubach, Member of the Board of Management of E.ON AG, talked about Germany's chances as a technology location. He argued that changing parameters provide an international competitive opportunity for Germany to achieve a clear leading position in the world market.

Transferring knowledge from science to industry

Professor Regina Palkovits, winner of the Innovation Prize of North Rhine-Westphalia, gave Germany as a technology location a positive rating. She stressed, though, that Germany's leading position must be striven for constantly. According to Palkovits, this could be facilitated by young people dealing with technical topics in school or even as early as in kindergarten. Dr. Kurt Bettenhausen, Chairman of the VDI/VDE Society for Measurement and Automation Technology, also called for stronger support of the transfer of knowledge from science to industry. This approach was welcomed by Dr. Bernhard Rami from the Federal Ministry of Education and Research, BMBF. Said Rami: "The promotion of research plays a significant role in achieving success as a technology location."

Call for a change of views

In the evening, during the festive plenary assembly, Professor Bruno O. Braun pointed out in his keynote speech that one of the biggest challenges for the technology location in 2020 is winning the trust of the public regarding future technological developments and increasing the acceptance of technology in general. In his opinion, it is possible to achieve this in the long term only through a uniform federal education strategy.

In his ceremonial speech, Federal Environment Minister Norbert Röttgen made it clear that economic growth can not be stopped in the coming years, especially in view of the increasing global population. He called for a change of view for businesses, politics and society as a whole, and a concentration on development and deployment of resource-saving technologies and processes. In this field, Germany has a great chance to expand its leading position and to become a market leader and trend setter.

Association of German Engineers/Verein Deutscher Ingenieure (VDI), Düsseldorf, Germany
www.vdi.de

From left: VDI President Mr Bruno O. Braun, German Federal Environment Minister Mr Norbert Röttgen and VDI Director Mr Willi Fuchs.

24th Polish Technicians' and Engineers' Congress

The participants of the 24th Polish Technicians' and Engineers' Congress, held on 24–25 May 2011 in Lodz, have expressed their satisfaction that this event, ending a year of debates and actions towards consolidation of the Polish technical community and scientific environments, has been held in the time preceding the inauguration of the Polish presidency of the EU.

Polish Technicians' and Engineers' Congress, 25 May 2011

Engineers, technicians, scientists and businessmen participating in the 24th congress judged that actions leading to economic growth in Poland are a priority. Noting with satisfaction developmental changes, the technical community also discerns negative phenomena in the economy, especially those that do not seek to reduce considerably unemployment and the discontent of many social and professional groups. It is assumed that the technical and social development of Poland during the next years depends greatly on working out and enforcing system solutions, first of all in innovation, energy security, safe transport and infrastructure.

Most important tasks

1. Innovation: unambiguous definition of pro-innovative policy purposes; wide international cooperation; elite higher education; supporting innovation of enterprises; wider participation of national universities, institutes and economic institutions in international research and development programmes; creating effective monitoring systems; wider cooperation of non-governmental environments and organisations in both direct and indirect actions leading to common standpoints and procedures for development of Polish innovation; participation in large international research programmes; establishing a governmental body submitted directly to the prime minister to coordinate pro-innovative policy

Mrs Ewa Mankiewicz-Cudny, President (right) and Prof. Jozef Suchy, Vice-President of the Polish Federation of Engineering Associations (middle) meeting FEANI Secretary General Mr Dirk Bochar in preparation of the Polish EU Presidency

2. Energy security: development and wide implementation of modern, economically effective technologies in mining, coal and biomaterial processing to ensure energy security; rationalisation of shale gas mining technological processes; rationalisation of energy and heat consumption; energy transmission, distribution and effective use by ultimate industrial and municipal consumers; building nuclear power stations as one of most important ways of ensuring energy security in Poland
3. Transport sector: maximum use of EU funds for optimisation of exploitation of weakly invested transport infrastructure; minimisation of carbon dioxide and particulates emission and creation and use of alternative energy sources; strengthening of the role of governmental and local administration in transport development through minimisation of negative effects of motor use and minimisation of transport costs; creation of integrated transport system and strengthening actions aimed at the north-south transport system; development of urban and inter-urban transport and intelligent transport systems; ensuring traffic safety; minimisation of pollution of the environment and implementation of high-speed railways

Polish leadership of the EU offers perfect conditions

The participants of the 24th Polish Technicians' and Engineers' Congress are convinced that Polish leadership of the EU offers perfect conditions for greater integration and adjustment of social, legal, economical and technical relations in Poland to those of the united Europe. In order to put into practice the outcomes of the congress, it is necessary to create and implement periodic monitoring by means of conferences to be held annually by the Polish Federation of Engineering Associations with the participation of interested branch associations.

Moreover, the participants of the congress are convinced that a priority for the next time should be science investment, technical development and the implementation of new technologies. Proper realisation of these postulates and conclusions requires engagement of scientific environments such as universities and research institutes, as well as the Academy of Engineering in Poland and the members of the Polish Federation of Engineering Associations.

The congress also submits to the ministers of economy, science and regional development the proposal to take patronage over a large group of small and medium enterprises by technical environment. The results of those projects will be presented during the international fair "Innovation, Technology, Machines".

Polish Federation of Engineering Associations
Warsaw, Poland
www.not.org.pl

Mr Jerzy Buzek, President of the European Parliament and former Prime Minister of the Republic of Poland, in his opening video-address

From left: Director Sasha Hadji Jordanov, Prof. Mile Stankovski, Marija Milosevska, Eleonora Angelovska, Marija Smiljanovska, Simona Markovska, Bojan Mitrovski, Trajce Bosevski, Aleksandra Kanevce, Elena Kamceva, President of the Republic of Macedonia Gjorge Ivanovski, Prof. Aleksandar Dimitrov, Sonja Baceva, Strahinja Trpevski, FEANI Secretary General Dirk Bochar, Prof. Anita Grozdanov and Stevce Grozdanov.

Engineering Ring for the best young engineers

The Engineering Institution of Macedonia awards the Engineering Ring to the best graduate students from the faculties that cover engineering disciplines every year. This acknowledgement is awarded under the patronage of the President of the Republic of Macedonia, Gjorge Ivanovski.

The ceremony was held on 16 May 2011 on the plateau of St. Kliment's temple in Ohrid. The Award represents a stimulus for more young people to study engineering sciences and also a contribution to the development of upcoming high quality engineering recruits, who are compatible to the developed countries, which is a prerequisite for the integration of the Republic of Macedonia into the European family.

The Engineering Ring promotes the engineering sciences to future young engineers and motivates them to upgrade their professional competence, with a main goal to form quality engineers from the rising generation that will eventually be the driving force for technological development in our society. The Ring represents a crown made of oak leaves on top of which the symbol of the

The Ring represents a crown made of oak leaves on top of which the symbol of the Engineering Institution is embedded.

Engineering Institution is embedded. In Macedonian intellectual circles, the oak leaves symbolise honour and dignity. The star represents a symbol of knowledge, which in the Engineering Institution of Macedonia is a synergy of all engineering disciplines.

The nine laureates

The honour of being the first ones awarded this prestigious acknowledgement are the following graduate engineers:

- Marija Milosevska, Faculty of Architecture
- Simona Markovska, Faculty of Civil Engineering
- Aleksandra Kanevce, Faculty of Electrical Engineering and Informatics Technology
- Sonja Baceva, Faculty of Agriculture
- Eleonora Angelovska, Faculty of Mechanical Engineering
- Elena Kamceva, Faculty of Technology and Metallurgy
- Bojan Mitrovski, Technical Faculty
- Marija Smiljanovska, Faculty of Forestry
- Trajce Bosevski, Faculty of Natural and Technical science

Engineering Institution of Macedonia
www.engineer.org.mk/eng

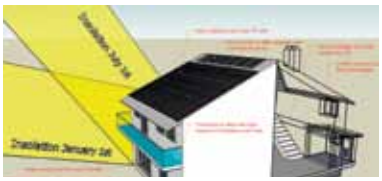
CIBIC meets FEANI

From left: Mr André Toye, Mr Dirk Bochar and Mr Noël Lagast

On 2 March 2011 FEANI received its Belgian Member CIBIC (Comité des Ingénieurs Belges – Belgisch Ingenieurscomité) and its new President André Toye. The idea was to strengthen the cooperation and to evaluate which role CIBIC could possibly play within the FEANI Board of Directors and within the European Monitoring Committee (EMC) in the future. Noël Lagast contributed a long article concerning the relationship with FEANI and the Professional Card in the May 2011 issue of magazine I-MAG of the Belgian Engineers' Federation.

Rectification

Unfortunately, in FEANI News N°8 January 2011 we forgot to mention the name of the illustrator of the passive house on page 21. It was created by Andreas Hanning, Chalmers University of Technology, Gothenburg, Sweden. We would like to apologise for this oblivion.



A bottleneck job but top of the bill

A Randstad survey sought to discover the most attractive profession. Engineers won the argument – streets ahead of architects and veterinarians. But a job's attraction does not explain why some of the most attractive are actually bottleneck jobs.

Engineering, architecture and IT engineering may well be attractive jobs, but their shortage on the labour market is no less acute.

What job would you recommend the people you know? With this question a Randstad survey in Belgium sought to discover the most attractive profession. It listed 112 jobs, which 3000 respondents assessed in terms of appeal. It also assessed factors like pay, the balance of work against private life and professional challenge. Engineers won the argument, streets ahead of architects and veterinarians: three quarters of respondents would happily recommend this job to their family and friends. Good pay, challenging, comfortable conditions – this is how the profession comes across to the Belgian employee. Doctors and university professors also come in the top five.

This makes the job of engineer a notable winner, because, for years now, industrial federations like Agoria have been citing the profession's negative image as the reason for the on-going shortage in engineers. Now it appears that this study is saying something different: the profession's lack of attractiveness is not the reason why many engineering vacancies remain unfilled. For that matter, engineering is not the only bottleneck job in the top 10 most attractive jobs. Architect, runner-up, and IT engineer, in 7th place, also fall into this category.

Packer is least attractive

At the other end of the table we have packers: barely 3% of respondents saw this as an attractive job. The porter and fisherman were not seen as particularly attractive either, along with the cleaner and line production worker. Low pay, thankless working conditions and lack of career opportunities quickly send the allure of these jobs into a nosedive. Actually, of the twenty least attractive jobs, about half are bottleneck professions.

Jan Denys, labour market expert for Randstad, assesses the figures: "This study shows that there is no such thing as a prototype of the most attractive job. No job is attractive in all its aspects: the surgeon scores well on pay, but plummets on balance of work and private life; jobs that are less attractive overall score better in this area sometimes. Also, the most attractive jobs are not necessarily the preserve of the better qualified. A blue-collar profession like electrician turns up in the top 20. And for that no higher education diploma is required." What also stands out is the respondents' unanimity over what constitutes an attractive job. "The answers are actually fairly

The 10 most attractive jobs

1. Engineer
2. Architect
3. Veterinary surgeon
4. Doctor
5. University professor
6. Chemist (pharmacist)
7. IT engineer
8. Notary
9. College lecturer
10. Surgeon

The 10 least attractive jobs

1. Packer
2. Porter
3. Fisherman
4. Cleaner
5. Production line worker
6. Cashier
7. Taxi driver
8. Dock worker
9. Postman
10. Kitchen staff

homogenous," says Denys. "The preference for low qualification jobs is certainly greater among people with low qualifications than among high, and vice versa, but then the preferences do not dramatically differ."

Little zest for techno

Denys takes it as read that a job's power of attraction does not necessarily say anything about its bottleneck character. Engineering, architecture and IT engineering may well be attractive jobs, but their shortage on the labour market is no less acute. "A job's attraction does not explain why some of the most attractive are actually bottleneck jobs. In the case of engineers and architects, the heavy studies are usually a stumbling block." This relationship is different among the least attractive jobs. "Here, vacancies are not actually filled because the job often has an unattractive image," says Denys. He is also worried about the lower attractiveness of technical professions, especially among young people. "The even more pronounced negative image that these professions have among young people was an eye-opener for me", he says. "We will have to have a good look at why this is the case. It is not because young people are unaware of what these jobs involve, but it has more to do with a supposed lack of autonomy or career prospects in the company. If we want to make these positions attractive again, this is something we will have to work on." Denys finishes on a positive note, nonetheless: "No one job is completely unattractive, or so the survey shows. Even the job of packer is still recommended by 3% of respondents."

De Standaard – Jobat, 28 May 2011

Eurocodes in Slovak Republic

Prof. Ivan Baláž, Eurocode national correspondent, Slovak Republic

Starting from 1 April 2010 in the Slovak Republic Eurocodes are the valid standard system for design of structures. Education at universities has been based on Eurocodes already since 1994. It seems that in most cases the design of structures according to Eurocodes compared with design according to Slovak national standards leads to heavier structures. Nonetheless, people are satisfied to have common modern European standards.

60 parts of ENV Eurocodes (European pre-Standard), 2 Amendments and 7 Corrigenda were published by the European Committee for Standardization (CEN) in Brussels from 1991 to 1999. The Slovak Standards Institute (SUTN) supported the translation of ENV Eurocodes and the creation of Slovak National Application Documents (NAD) into Slovak by 160,000 euros. Slovak Technical Standards (STN) P ENV Eurocodes were published in Bratislava from 1998 to 2004. 52 STN P ENV are translated into Slovak, 4 parts in Czech and 4 parts are in English. 59 STN P ENV Eurocodes have NAD, one is without NAD. The complete set of ENV Eurocodes (4451 pages) for consulting engineers costs 927 euros.

Moreover, 58 parts of EN Eurocodes (European Standard) were published by CEN from 2002 to 2007. Several Amendments and Corrigenda were published by CEN, too. 46 parts of EN Eurocodes were published as STN EN Eurocodes in Bratislava in Slovak from 2004. The remaining 12 parts of EN Eurocodes are used as STN EN Eurocodes in English and translated from 2010 to 2011. 39 Slovak National Annexes (NA) have been published and 19 NAs are published from 2010 to 2011. Translations of EN Eurocodes into Slovak are financially supported by SUTN. Studies serving as the Basis for the creation of Slovak NAs are financially supported by the Ministry of Building and Regional Development of Slovak Republic.

The first large structure in Slovakia designed according to Slovak national standards and ENV Eurocodes was the bridge Apollo over the river Danube in Bratislava.

Implementation of Eurocodes in Slovakia

In the transition period SUTN published the following guidelines concerning design of structures and use of Eurocodes in Slovakia:

30 March 2006 to 30 November 2008: Three independent standard systems may be used for design of structures: (i) Slovak national standards STN, (ii) STN P ENV Eurocodes with Slovak NAD, (iii) STN EN Eurocodes with Slovak NAs (only when complete required package is available). It is forbidden to mix individual standards or their parts from different standard systems.

1 December 2008 to 31 March 2010: Two independent standard systems may be used for design of structures: (i) Slovak national standards STN, (ii) STN EN Eurocodes with Slovak NAs (only when complete required package is available). It is forbidden to mix individual standards or their parts from different standard systems.

Starting from 1 April 2010: STN EN Eurocodes with Slovak NAs are the valid standard system for design of structures – taking into account all Amendments and Corrigenda. The STN that were in contradiction with Eurocodes were withdrawn. Design of structures in Slovakia according to other standards (e.g. foreign standards) must be supported by an agreement in the contract and cannot have lower levels of reliability as design according to Eurocodes.

The details of above guidelines were created by the Technical committee TK 111 "Application and use of Eurocodes", which was founded at SUTN in 2005.

Implementation of Eurocodes in Slovakia was supported by:

- Publishing of set of 35 informative papers in Slovak journal EUROSTAV (from 2004 till 2010). They are available for free on www.eurostav.sk.
- Publishing papers in other Slovak journals and numerous scientific papers in many national or international proceedings.
- Publishing of several proceedings containing numerical examples, which served as textbooks in courses organised by the Slovak University of Technology, the Ministry of Building and Regional Development, the SUTN, or the Slovak Chamber of Civil Engineers.
- Creation of working publications: Terminology of Structural Eurocodes (SUTN, 2000), English-French-German-Czech-Slovak terminological dictionary (Ministry of Building and Regional Development, 2002) or by publishing of official Slovak national standard: STN 73 001.

Use of Eurocodes

Education at universities is based on Eurocodes starting from 1994 to 1998. Education of foreign students at the Faculty of Civil Engineering of the Slovak University of Technology in Bratislava helps to promote Eurocodes in other countries. Before the separation of the Czech and Slovak republics, common teams of specialists prepared common Czechoslovak standard ČSN 73 1401 Design of Steel Structures, the first half of which was based on its former edition from 1986 and the second half of which was based on parts of ENV Eurocodes. This standard was published later as Czech standard in 1995 and after removing errors and improving again in 1998. A similar, but not identical standard was published also in Slovakia as STN 73 1401 Design of Steel Structures in 1998. Starting from 1998 and thanks to STN 73 1401 a lot of rules of European pre-standard ENV 1993 were used in

Slovakia by consulting engineers. It is necessary to mention that limit states design (LSD) was used in design of steel structures in Czechoslovakia fifty years ago, and therefore consulting engineers had no problems with using new standard STN 73 1401 influenced by ENV Eurocodes.

The verifcation of the possibility to change allowable stress design (ASD) into LSD in the design of steel structures was investigated in the former Soviet Union at the beginning of 1950s. The government of Czechoslovakia decided to verify the possible weight saving when using LSD instead of ASD in official announcement in 1960. The first verifications were done by A. Brebera (1956 and 1957) in Research Institute of Building Production in Prague and by A. Mrázik (1958 to 1960) in Institute of Construction and Architecture, Slovak Academy of Sciences in Bratislava. The first Czechoslovak standard (STN 73 1401, Design of Steel Structures) based on LSD, was approved in 1966, and became valid in 1969. The first realised steel structure in Czechoslovakia designed according to ASD – but recalculated and verified by LSD before 1966 – was the hangar at Prague airport.

Experience with Eurocodes

It seems that in most cases the design of structures according to Eurocodes (STN EN) compared with design according to Slovak national standards (STN) leads to heavier structures. The reason is that the partial factors for action according to former STN have smaller values and are much more differentiated than in STN EN.

For example, unfavourable values of partial factor for permanent actions according to STN $y_{Gj,\ sup}$ are from 1.10 to 1.30 and according to STN EN, we have constant value $y_{Gj,\ sup}$ = 1.35.

Variable actions according to STN $y_{Qj,\ sup}$ are from 1.10 to 1.40 and according to STN EN, we have constant value $y_{Qj,\ sup}$ = 1.50.

The partial factor for material in design of steel structures according to STN y_M has value from 1.10 to 1.20 and according to STN EN, we have y_{M0} = 1.00. It is clear that a comparison of utility factors leads to the un-equality $U_{STN} < U_{STN\ EN}$.

Design of structures according to Eurocodes comparing with design according to former Slovak standards leads in most cases to safer, heavier and more expensive structures.

The above comparison of utility factors is surely a simplification, because it does not take into account older methods in STN and more modern methods given in STN EN. The difference between utility factors U_{STN} and $U_{STN\ EN}$ is even more pronounced in design of concrete structures. This fact was the reason why the technical committee TK 5 “Design of Concrete Structures” at SUTN required not to have in Slovakia two standards systems for design of concrete structures with different levels of reliability, and decided to withdraw STN 73 1201 1986 “Design of Concrete Structures” in 2009.

Some of the methods in design of steel structures given in STN EN 1993 are the same as in STN 73 1401 1998, so using STN EN 1993 by consulting engineers is not a bigger problem. The situation is worse for engineers using Eurocode for actions STN EN 1991, in which there are new methods of calculation of characteristic values, e.g. wind. Characteristic values of actions according to STN EN are greater than values according to STN 73 035 “Loading of Building Structures” or STN 73 6203 “Loading of Bridges”. The first large structure in Slovakia designed according to Slovak national standards and also according to ENV Eurocodes is the bridge Apollo over the river Danube in Bratislava, which was opened in 2005. The bridge holds several awards (2005 ECCS European Steel Design Award, 2006 Winner of the competition Structure of the year in Slovakia), and it has been named one of five finalists (chosen from more than 400 structures) for the 2006 Outstanding Civil Engineering Achievement Award, presented by the American Society of Civil Engineers (ASCE). It is arch bridge with main span 231 metres and with length 514.5 metres of 6 span bridge structures.

The Slovak Standards Institute supported the translation of Eurocodes and the creation of National Application Documents.

People are satisfied having common modern standards

Consulting structural engineers criticise large content and complexity of Eurocodes complemented by several Amendments and Corrigenda, missing scientific backgrounds and inconsistency of some rule which came from various authors. Among the drawbacks of Eurocodes implementation there are big expenses together with paying for hard copy of Eurocodes, courses, new literature and software. On the other hand, people are satisfied having common modern European standards. Guidance paper L gives information on the “Application and use of Eurocodes” and states that one of the aims and benefits of the Eurocode programme is that it allows common design aids and software to be developed in all member states. Several handbooks, design manuals, guides, textbooks and programmes supporting design according to Eurocodes are available currently in various countries. To have an efficient system of Eurocodes it is necessary to solve the problem of availability of all national annexes at least in English language.

Prof. Ivan Baláž, PhD, Eurocode national correspondent, Slovak University of Technology, Bratislava, Slovak Republic
www.stuba.sk

Mr José Manuel Durão Barroso: "We want to bring to workers and employees a better recognition of their qualifications, so that the benefits of the Single Market are open to all those that want to work abroad."

Deepen the Single Market to foster growth and jobs

On 13 April 2011 the President of the European Commission, José Manuel Durão Barroso presented the Single Market Act. It includes 12 priority actions to unlock the Single Market's potential for European growth and to restore the confidence of citizens and businesses in its benefits. The following is an extract from his speech given at the press conference.

"Today we are presenting the Single Market Act. We have identified 12 priority actions to boost the Single Market that should be adopted by 2012. All 12 have one thing in common: creating growth and jobs by better exploiting the potential of the Single Market. Our priority is growth and jobs. That has been at the centre of the Commission action, our Europe 2020 strategy, for instance. And these priorities – growth and jobs, in times of budgetary constraints – can receive a great stimulus from deepening of the Single Market. Indeed, I would say that, probably the best way to foster growth and jobs is to deepen the Single Market, to remove some of the obstacles that exist to this growth. That is why in my political guidelines I have announced this programme for the Single Market as a priority for the mandate of this Commission. Why I asked Mario Monti to start pinning down the missing links to the Single Market at the end of 2009. And why I asked Michel Barnier to pilot this work. And I want to thank him and congratulate him for the very efficient and dynamic way in which he has performed this job. The 12 priority actions identified are an important step towards our goals.

Concrete, decisive measures

Several of the ideas we propose have been around for quite some time, but they were never acted upon. And that is exactly what we insist must happen now. This is a programme of very concrete, decisive measures, with a precise calendar. Individually, many of these initiatives may not seem all that exciting: public procurement, standardisation, access to capital, IPR, alternative dispute settlement, opening up the regulated professions, implementing the Services Directive, and improving the

way the posted workers rules are applied. They may seem not very exciting, but they are decisive for our Single Market for growth and jobs. These are the things that will update the Single Market and make it future-proof. These are the things – services, digital, better regulation – that put together represent much more than the sum of the parts. They are the "Single Market ecosystem". These are the things that can make life easier for our companies – namely, small and medium size companies (SMEs) – and also for our consumers.

Removing obstacles

What is more: these proposals, at least most of them, have no price tag. They can be done without huge public investments. It is about removing obstacles. And their benefits are real: cross-border e-commerce could bring economies worth 2.5 billion euros, or 0.2% of GDP. An effective services sector generates an extra 2% of jobs per year. Improving transport and energy infrastructure could create 775,000 jobs and increase GDP by 19 billion euros by 2020, according to our estimates. These are indeed proposals for citizens and proposals for companies that open up opportunities.

We will give consumers better protection when shopping cross-border. We are creating the preconditions for a new boost to the European services market; in particular, e-commerce and digital services. We want to ensure pan-European electronic identification and signatures. We will present an Intellectual Property Strategy that updates the way rights are managed to take account of the digital world and all key measures to give citizens and businesses the confidence to operate online in the Single Market.

We have today a Single Market at least for goods. But the market of the future will be more and more digital. That is why we have to create the conditions for consumers to operate in the digital market as they can operate in the "material" market.

European unified patent protection

We want to bring to workers and employees a better recognition of their qualifications so that the benefits of the Single Market are open to all those that want to work abroad. We will be looking closely at the hundreds of regulated services sectors to see if restrictions are justified. Michel Barnier has already started this work in a very decisive way, looking concretely at all the sectors in our different member states. And through the strengthening of the posted workers directive, we will ensure that the Single Market guarantees the social rights, and protection of workers and employees. It is extremely important that the Single Market is indeed done in full respect of all the social rights including full workers' rights.

Our proposals also include all we can to help companies, especially SMEs. We propose to give a passport to venture capital funds so they can invest in SMEs in other member states. We propose to simplify the business environment with an overhaul of the public procurement rules and by lifting the accounting burden from 7 million small and micro enterprises, with potential savings of 7.4 billion euros. And with the legislative proposals we are adopting today, we take another significant step towards finally achieving a European unified patent protection covering as many member states as possible.

Tackle the taxation issues

Let me add a word on taxation. Tax remains the biggest variable that affects consumer prices and cross-border business. I believe there is a new opportunity to tackle the taxation issues that have a direct impact on the Single Market. It can make a major contribution to growth and jobs. As you know, we lately proposed the common consolidated corporate tax base to establish a single set of rules that companies operating within the EU could choose to use to calculate their taxable profits. Today, we are adopting proposals on energy tax to ensure energy products are taxed on their CO_2 emissions and their energy content, rather than on the basis of some arbitrary historical figure. We have also launched preparatory work to overhaul our Value Added Tax (VAT) rules, to see how these can generate further growth.

The powerhouse of Europe's economy

I want to underline that the Single Market is not just another policy area. It is what makes Europe real for our citizens and businesses. It is the basis of our growth. It allows us all to reach beyond our national borders. The global world is moving quicker than any of us could have expected. Our job is to keep pace. Let's not forget that with the world's biggest home market of 500 million people and a GDP per capita of almost 25,000 euros on average, this growth will not only come from our exports, it must and it can be driven by Europe itself, by our common market. The Single Market is the powerhouse of Europe's economy. It has been a driver for growth since 1992 and if we reignite its engine, it will bring a major boost to tomorrow's growth as well.

We are more inter-dependent than ever before

Times of economic crisis provide sometimes a strong temptation to roll back the Single Market. And we have seen that coming from some member states recently. In these times many like to question competition rules, exploit the missing links and seek refuge in economic nationalism. That is exactly the wrong approach. If we have learned one thing from this economic crisis, it is that we are more inter-dependent than ever before – the actions of one member state can solve a problem or try to export it to another member state. That is not the way to deal with it. That is why we need a stronger, not a weaker, Single Market.

The Commission will do everything necessary to drive this agenda and to be the implacable defender of the Single Market. We believe it can be one of the most important tools to deliver a new kind of growth – growth and jobs for European citizens."

European Commission, Brussels, Belgium
www.ec.europa.eu

Access to finance is a crucial issue for over 20 million small and medium-sized European enterprises, which often have difficulty in launching new products or building up their infrastructure.

12 projects for the 2012 Single Market

The Single Market is still the nucleus and the core economic driving force of the European Union. But its growth potential has not yet been fully exploited, despite the progress made since it was created in 1992. It must therefore open the doors to new, greener and more inclusive growth.

The Single Market remains our most effective means of responding to the current economic crisis. The Single Market Act adopted by the European Commission aims to deliver 12 projects on which to relaunch the Single Market for 2012. These 12 instruments of growth, competitiveness and social progress range from worker mobility to SME finance and consumer protection – via digital content, taxation and trans-European networks. Their aim is to make life easier for everyone on the Single Market: businesses, citizens, consumers and workers.

The President of the European Commission, José Manuel Barroso, has declared: "The Single Market has always been the driving force behind our economic development and prosperity and, now more than ever, it remains our best asset in facing the crisis. The 12 projects will make it possible to give it new momentum which will significantly benefit businesses, workers and consumers. Our objective is a stronger Single Market in 2012!" The Commissioner for Internal Market and Services, Michel Barnier, added: "Today's proposal is a coherent response to the shortcomings of the internal market and aims at a sustainable and inclusive growth model. The Commission calls on all concerned, first and foremost the member states and the European Parliament, to make this action plan their own by quickly adopting the 12 key measures by 2012, so as to give the initiatives of Single Market players a greater chance to benefit fully from the opportunities on offer".

What are these 12 instruments?

The more than 850 contributions received throughout the four months of public debate and the opinions and conclusions of the European institutions enabled the Commission to identify 12 instruments for stimulating growth and boosting citizens' confidence. Each instrument is accompanied by a flagship initiative on which the Commission undertakes to make proposals during the coming months, the aim being to gain final approval from the European Parliament and the Council before the end of 2012. Each instrument also contains other, equally important proposals which should benefit from the momentum generated by the flagship initiative in order to make progress – sometimes in parallel and sometimes at a slightly slower rate.

1. Access to finance for SMEs

This is a crucial measure for over 20 million small and medium-sized European enterprises which, lacking finance, often have difficulty in recruiting staff, launching new products or building up their infrastructure. The aim is therefore to put in place common rules for venture-capital funds, enabling those established in one member state to invest in any other member state and thus to provide innovative SMEs with funding combined with the necessary expertise and at an attractive price.

2. Worker mobility

In 2009 5.8 million Europeans, equivalent to 2.5% of the active population of the European Union, worked in a member state other than that of their nationality. Enhanced mobility for qualified workers would help the European economy to be more competitive. The fact that many posts for highly-qualified personnel remain vacant makes this all the more urgent. To remove the legal obstacles still preventing Europeans from working where they wish to work, we intend to modernise the rules for recognising professional qualifications so as to simplify procedures, review the scope of the regulated professions, and strengthen confidence and cooperation between the member states, first and foremost by issuing a European professional card.

3. Intellectual property rights

Intellectual property is every bit as important as raw materials or the industrial base: between 44% and 75% of the resources of European businesses are linked to it. It is a strong comparative advantage of the European Union. It is thus crucial for European competitiveness to provide unitary patent protection for inventions for as many member states as possible, the aim being to grant the first unitary patents in 2013. We are putting forward proposals to this end today.

Mr Michel Barnier, Commissioner for Internal Market and Services: "The Commission calls on all concerned to make this action plan their own".

4. Consumers: Single Market players

To boost the confidence of consumers in the Single Market we must guarantee their rights. This means above all developing alternative approaches to dispute settlement and putting in place non-judicial means of redress. Consumers will then have access to easier, quicker and cheaper procedures. This is essential to online trading, in which increased consumer confidence in cross-border electronic commerce would yield an economic gain estimated at 2.5 billion euros.

5. Services: strengthening standardisation

Services are the driving force behind job creation in Europe: while EU growth averaged 2.1% per year from 1998 to 2008, the services sector grew by an average of 2.8% per year. Employment in the sector grew by 2% per year, compared with 1% for the economy as a whole. To make the most of this asset, the Commission proposes to revise the legislation on the European standardisation system to extend it to services and make standardisation procedures more effective, efficient and inclusive.

“Our objective is a stronger Single Market in 2012!”

José Manuel Barroso, President of the European Comission

6. Stronger European networks

Transport, energy and electronic communications networks are the backbone of the Single Market. High-performance infrastructures are the means to fast and reasonably priced free movement of persons, goods, energy sources and data. The Commission will adopt legislation on energy and transport infrastructures in order to identify strategic projects of European interest.

7. Digital Single Market

Boosting confidence in electronic transactions is a sine qua non for the development of a Digital Single Market that will fully benefit citizens, businesses and authorities. Europe needs legislation to guarantee mutual recognition of electronic identification and authentication across its territory, and a revision of the e-Signature Directive to permit safe and unobstructed electronic interaction.

8. Social entrepreneurship

As well as legitimately seeking financial profit, certain businesses also choose to pursue the general-interest objectives of social, ethical or environmental development. This sector generates growth and employment. To encourage this, we need to take full advantage of the formidable financial tool which is the European asset management industry. We will propose a European framework for mutual investment funds, so as to amplify the effect of the existing national initiatives by offering these funds the opportunities provided by the Single Market.

9. Taxation

EU tax legislation no longer meets the needs of the Single Market of the 21st century or the challenges of sustainable development. It does not give sufficient encouragement to the most energy-saving or environmentally friendly practices. We are therefore putting forward today a revision of the Energy Tax Directive, aiming to guarantee consistent treatment of the various energy sources and thus take better account of the energy content of products and their CO_2 emissions.

10. More social cohesion

To boost social cohesion in Europe, the Commission intends to make a legislative proposal for strengthening the application of the Posting of Workers Directive, so as to prevent and penalise any abuse or circumvention of the rules. It will also clarify the exercise of fundamental social rights as part of the exercise of economic freedoms.

11. Regulatory environment for business

Businesses still too often view the Single Market as an area of constraints, not of opportunities. Their lives must be simplified by reducing regulatory and administrative constraints. To achieve this, the Commission is therefore proposing a simplification of the accounting Directives as regards financial reporting obligations, and a reduction of the administrative burden, especially for SMEs.

12. Public procurement

The public authorities spend some 18% of the EU’s GDP on goods, services and public works. This public expenditure is an essential tool for growth. European and national legislation has opened up public contracts to fair competition, giving citizens better quality at the best price. The Commission proposes to modernise this legislative framework in order to arrive at a balanced policy sustaining the demand for environmentally friendly, socially responsible and innovative goods and services, provide contracting authorities with simpler and more flexible procedures, and give SMEs easier access.

What are the next steps?

At the end of 2012 the Commission will take stock of the progress of this action plan and present its programme for the next stage. Its considerations will be fed by a large-scale economic study, the results of which should help to identify any areas with still unexploited growth potential and, where appropriate, pinpoint new drivers of growth.

European Commission, Brussels, Belgium
www.ec.europa.eu

Session 9, from left: Mr Dirk Bochar, FEANI Secretary General, Mr Bruno Strigini, President Europe and Canada Merck MSD, Mr Antonio Tajani, EU Commission's Vice-President and Commissioner for Industry and Entrepreneurship, Mr Fernand Dimidschstein, Managing Director Accenture Management Consulting France and Benelux, Mr Martin Schoeller, President of Europe's 500 Entrepreneurs for Growth, and hidden: Mr Philippe de Buck, Director General of BUSINESSEUROPE.

Europe in the world: leading or lagging?

The 9th European Business Summit focused on Europe's place in the global economy, today and tomorrow. In which areas is the EU lagging behind and what are the opportunities where it can regain the lead?

The 9th European Business Summit (EBS), a key meeting place and networking platform for the EU's business and political elite, concluded on a note of optimism in Brussels. The summit, held on 18–19 May, discussed the internal and external challenges that lie ahead for Europe in maintaining its position in the global economy.

European way of living

Under the theme "Europe in the world, leading or lagging?" the summit united over 1500 prominent participants from the EU and its main global trading partners. "Creating growth and jobs, protecting the environment and social inclusion are key elements of our European model," stressed Herman Van Rompuy, President of the European Council. "We want to maintain the European way of living in our globalised world, but other major economies are racing ahead. Our businesses and workforce are facing major challenges in competitiveness, innovation and labour participation. Only together we will be able to ride new waves of growth."

Speed up structural reforms

In a keynote speech, European Commission President José Manuel Barroso complemented a programme which included over 100 high profile speakers, including European Commissioner for Economic and Monetary Affairs Olli Rehn, Hungarian Prime Minister Viktor Orbán and Hitachi European Group Chairman Sir Stephen Gomersall. Pierre De Smedt, Federation of Enterprises in Belgium President, said: "Business leaders are convinced of the EU's growth potential but they believe that a major effort is still required in order to remove remaining obstacles from trade and mobility within the EU." Alluding

to the European Commission's forthcoming agenda, De Smedt explained: "As part of the collective effort to reinforce economic governance, the European Commission needs to carry out an objective analysis of national reform programmes. On that basis, it should exert sufficient pressure on governments to speed up essential structural reforms that will boost competitiveness." "European companies are still plenty of opportunities and talent that entrepreneurs can and want to develop. EU and national governments on their side must aim at structural reforms and secure budget discipline," concluded BUSINESSEUROPE President Jürgen R. Thumann.

European Business Summit, Brussels, Belgium
www.ebsummit.eu

Commissioner Mr Antonio Tajani on a new model for European industry, amplifying innovation and green energy

Mr Philippe de Buck on climate policy which must still allow European businesses to compete globally

FEANI emphasizing European industry's requirement to rely on easy professional mobility within the internal market

Session 9: Industry – a future for Europe in the global economy?

The session opened with the moderator, Fernand Dimidschstein, Managing Director of Accenture Management Consulting, posing the question: "What is the future for European industry in the global economy?" First to take on the question was Antonio Tajani, Vice-President and Commissioner for Industry and Entrepreneurship who stated simply that Europe has no future without an industrial sector. He therefore proposed a new model for industry that would marry industry and SMEs with financial services providers in, for example, the quest for green technology. The Commissioner was then followed by Philippe de Buck, Director General of BUSINESSEUROPE who saw the future of European industry as facing a certain number of challenges. He explained that Europe finds itself in a global market where although European industry can export its products across the world, it must also compete at a global level.

Bruno Strigini, President Europe & Canada of Merck Sharp & Dohme, explained that there is real dynamism in European industry, but that it must not become complacent as other economies are developing just as fast. He continued that Europe has many strengths, but that the initiatives and targets set by government must be followed up by real action.

On behalf of engineers in Europe, FEANI Secretary General Dirk Bochar called for greater transparency in qualifications for engineers, as some diplomas from certain member states are not recognised in other parts of the EU. This lack of transparency in qualifications was cited as one of the chief barriers to effective mobility of engineers in Europe. Martin Schoeller, President of Europe's 500-Entrepreneurs for Growth, opened by stating that "what gets financed gets done". He called for more funding of green technology development, as he explained that the greening of the economy is something that runs through every aspect of the economy. In this vein, he looked forward to the prospect of having a "green valley" in Europe, similar to Silicon Valley in the US, that would be the world leader in green technology development.

Mrs Androulla Vassiliou: “To stay competitive we must invest in our young people.”

A strategic partnership to deliver Europe 2020

Androulla Vassiliou, a member of the European Commission (EC), Education and Culture Commissioner, gave the opening speech of the fourth edition of the European University-Business Forum, during the meeting of high-level representatives from business, higher education and politics, held in Brussels on 22 and 23 March. The following is an extract from her speech.

“Europe is slowly emerging from the most serious economic crisis in its history. The last two years have wiped out a decade of economic and social progress and exposed many weaknesses in economies. We are struggling with the long-term challenges of globalisation and limited financial resources. Competition from other regions of the world is rising. The young generation has been – and still is – the most hit by this situation with a youth unemployment rate above 20% in the EU. To stay competitive in a fast-changing world and to prepare the society of tomorrow, we must invest especially in our young people – in their skills, in their ability to adapt to change and to innovate. Universities have a pivotal role in shaping the talent landscape. Universities can foster the skills of creativity, innovation and entrepreneurship that help people thrive in a changing world. But this calls for a real mindset change towards new, creative approaches of teaching and learning as well as new relationships with the outside world.

Turn knowledge into employability

In order to prepare individuals to adapt to changing, to take the initiative, to be creative, we must ensure that our systems of education become more responsive and relevant to the fast-evolving society. If we are to turn our store of knowledge into employability and innovation, and develop a true knowledge economy, higher education must continue to evolve in order to bridge the gap between the worlds of education and work. In that perspective, I am convinced that we need to develop stronger partnerships between education systems and businesses. The two worlds need to work better hand in hand. But this requires a strong commitment also from the business community itself. Companies must be ready to invest in

education and they must be willing to cooperate with higher education institutions on a long-term basis by helping the development of new curricula or offering more places for internships for instance.

A space for cooperation

Dialogue and cooperation are the keys to changing the relationship at local, national and European level. The University-Business Forum continues to provide a space for this cooperation. Be assured of my personal commitment to take this policy action one step further. It is a clear priority of mine and I intend to strongly support this changing relationship on a number of fronts and political initiatives. I will issue, later this year, a new communication on modernising higher education, through which my clear intention is to address some of the key issues that will enable European universities to play their role in the knowledge society to the full: How to adapt education programmes, so graduates are equipped for the highly skilled jobs of the future in close cooperation with the business world. How to open up university education to a much greater range of students, including people from disadvantaged and minority backgrounds and disabled people. How to bring more transparency into higher education, through a multi-dimensional, global ranking system, providing better information about university profiles and performance, so that students can make more informed choices and universities can build on their own strengths. And how to position Europe's universities on the global stage.

Support Knowledge Alliances

Furthermore, I am currently preparing the next generation of EU funding programmes from 2014 onwards. I intend to support more directly actions which would strengthen the interaction between universities and the world of work. For instance, we know that mobility pays off in terms of new skills and broader job horizons. I want to expand these mobility opportunities for students in order to help young people to reap their benefits, through work and study placements.

Moreover, I wish to make the cooperation between the university and the business more concrete and to make the walls between them more permeable, allowing people to forge careers that move in and out of the two worlds. The European Parliament has adopted a pilot action to support Knowledge Alliances that will be structured co-operation ventures which will bring together businesses and education institutions. Their objective will be to deliver new curricula and develop new courses in order for the education systems to better match the skills sought after by employers. Their ultimate aim is that students emerge not only with in-depth knowledge of their subject, but also with high levels of "transversal" skills that boost their employability. Additionally, a European Industrial Doctorate scheme is planned, in order to help young researchers to enhance both their research and their business-related skills.

Higher education missing

My third priority relates to one of our key initiatives to drive Europe's innovation agenda forward: The European Institute of Innovation and Technology (EIT). Higher education is often the missing partner of more traditional innovation partnerships between businesses and research. With the EIT we integrate fully higher education as a constitutive element of a single innovation chain alongside research and businesses. Established in March 2008, the EIT operates today through the Knowledge and Innovation Communities (KICs). These bring together into structured public-private partnerships and legal entities, Europe's most creative partners from industry, higher education, and research, in areas that are crucial for our common future, like climate change, sustainable energy and the information and communication society. After ten months, the three KICs – Inno Energy KIC, Climate KIC and EIT ICT Labs – are now set to deliver first results.

Mrs Androulla Vassiliou, Education and Culture Commissioner of the EC, with Mr Mario Monti in the background

Pull together for Europe's future

In today's world, cooperation has to be our watchword. We must all pull together, if Europe is to make the climb back to growth. This forum helps to break down the walls that keep the worlds of education, research and business apart, and to build new connections between the public and private sectors. Your ideas and proposals will strengthen these connections."

Androulla Vassiliou, Member of the European Commission, in charge of Education, Culture, Multilingualism and Youth, Brussels, Belgium
www.ec.europa.eu/dgs/education_culture

The University-Business Forum

The University-Business Forum provides a platform at the European level for exchanging good practices, sharing experiences and fostering mutual learning amongst the relevant stakeholders. Better cooperation between universities and businesses is considered a cornerstone for the modernisation of higher education in Europe. Both higher education institutions and business benefit from working together; it stimulates the transfer and sharing of knowledge, and helps create long-term partnerships, profitable opportunities as well as boosting students' future employment prospects. For any comments or questions on the platform's work, please contact university-business-cooperation@ec.europe.eu

Youth on the Move undermined by deficient recognition of qualifications?

The following question concerning Commission Rule 117, asked by Marco Scurria, European People's Party, has been aswered by Commissioner Michel Barnier.

On 3 March 2010 the European Commission launched the Europe 2020 strategy, one of the key pillars of which is the Youth on the Move programme. The aim of this Commission measure is to offer significant support to mobility for young people in terms of both education and employment, with a view to providing jobs for Europe's younger citizens and furthering their integration into society. Youth mobility may be expected to show a considerable increase over the next few years. A horizontal educational mobility experience (i.e. within a study cycle) can be followed by a vertical mobility experience (i.e. spending an entire cycle in another country). The obstacles now existing to the recognition of qualifications in the member states tend to undermine both equal opportunities and the basic principles underlying Youth on the Move.

Questions

1. Will the Commission undertake a comparative study in order to determine the forms in which member states recognise each other's qualifications, comparing procedures, time-periods and fees paid for recognition?
2. Can the Commission provide information on the "Mobility Scoreboard", the evaluation criteria and the targets over time up to 2020?
3. How does the Commission propose tackling the existing variations in the recognition of second-cycle qualifications in member states, which, under the Bologna process, have implemented cycles of varying length and intensity in terms of ECTS credits?

Answer given by Michel Barnier on behalf of the European Commission

1. A distinction should be made between recognition of professional qualifications for carrying out a professional activity and academic recognition for educational purposes. Concerning the recognition of professional qualifications, the rules are defined in Directive 2005/36/EC. A set of guidelines concerning the recognition procedures (Code of Conduct) has been defined by the Commission in order to promote a coherent implementation of the Directive by competent authorities.

The Commission is currently conducting a major evaluation of Directive 2005/36/EC. In this context, the length and complexity of recognition procedures are being examined. In particular, through a survey of National Contact Points and Citizens Signpost services (Your Europe Advice), the Commission gathered valuable information on the problems encountered by citizens in the recognition procedures. The experience reports produced by competent authorities and national coordinators in the context of the evaluation also contain interesting evidence on the current functioning of the recognition systems. In addition, the reactions to the public consultation on the modernisation of the Professional Qualifications Directive highlight the need to simplify recognition procedures and improve access to information.

In the field of academic recognition, for which responsibility lies with the member states, statistical data does not exist on the forms in which member states recognise each other's qualifications, comparing procedures, time periods and fees paid for recognition. By Recommendation 2001/613/CE, the European Parliament and the Council recommend that member states take appropriate measures so that the decisions of the authorities responsible for academic recognition are adopted within reasonable timescales, are justified and can be subject to administrative and/or legal appeal.

Furthermore, a Commission staff working document published in September 2010, "A guide to the rights of mobile students in the European Union", devotes an entire chapter to academic recognition in which the relevant case-law of the Court of Justice is set out and the possibility of action by the Commission mentioned. Indeed, despite the fact that academic recognition is the responsibility of member states, the promotion of student mobility (including academic recognition) is an important

objective of the Union, which member states may not hinder. As an example, an infringement procedure has already been opened for excessive fees paid for recognition.

2. The Youth on the Move flagship initiative proposes the creation of a "Mobility Scoreboard" as a tool to monitor progress in implementing the provisions of the Council Recommendation on promoting the learning mobility of young people. The intention is to examine a range of qualitative variables related to promoting, or removing obstacles to, learning mobility. A study, led by Eurydice and involving member state representatives, will be launched later in 2011 to examine the feasibility of monitoring different variables and to propose a possible methodological framework for the Mobility Scoreboard.

The aim of the Youth on the Move programme is to offer significant support to mobility for young people in terms of both education and employment.

3. The Bologna process establishes that the second cycle (Master) should include between 60 and 120 ECTS, but there is no standard duration. EU member states have full responsibility for the content and organisation of their education systems and have opted for different solutions in the implementation of the Bologna Master.
The Commission services (Directorate-General Internal Market) has launched a study in order to assess the impact of the recent educational reforms (in particular, the three-cycle structure and the use of ECTS) on the recognition of professional qualifications. The study is on-going. National competent authorities are involved in the study. Possible problems in the recognition procedures linked to different durations of the second cycle may be identified in this context.

Michel Barnier, European Commission, Internal Market and Services, Brussels, Belgium
www.ec.europa.eu/dgs/internal_market

Commission warns Bulgaria on diploma recognition

Bulgarian students spend many months and pay considerable amounts of money to secure recognition of university diplomas obtained in other countries of the EU. Such heavy procedure and unjustified proceedings have fallen under EU scrutiny and the European Commission might seek legal action.

Bulgaria has a well-developed education system and over 30 universities for a country of 7,350,000 inhabitants. The EU newcomer has lost 1.5 million of its population since 1985, a record in depopulation not just for the EU, but by global standards too. However, after the fall of the Berlin Wall, many young Bulgarians opted for studies abroad. More than 80,000 people have obtained university diplomas from Western countries, predominantly from EU countries. Some 7,000 to 8,000 Bulgarians receive diplomas from Western countries each year. The European Commission said it will consider an infringement procedure if it takes the view that member states hampering the recognition of diplomas obtained in other EU countries amounts to preventing students from exercising their freedom of movement. Apparently, this is precisely the case in Bulgaria. EurActiv has received several letters from Bulgarians who graduated from European universities and then had tremendous difficulty having their diplomas legalised. From various documents seen by EurActiv, it appears that thousands of young Bulgarians who have completed their education in EU countries are in fact prevented from joining Bulgaria's civil service, as

employers cannot wait for lengthy legalisation procedures to be completed. According to letters, Bulgarian graduates from abroad often spend as long as a year getting their qualification recognised in their home country.

Documents introduced to a special commission

The first obstacle reportedly is that most Western universities deliver a certificate of completed studies, the actual diploma being provided several months later. In Bulgaria, only the official diploma qualifies for a legalisation procedure. Apart from the diploma, the Bulgarian authorities require an academic curriculum specifying the number of hours spent on any subject studied. Before accepting the documents for legalisation, the Bulgarian authorities require a notary's certification in the country of studies or apostille, a legalised translation certified by the country's foreign ministry. Obtaining all these often takes three months. The cost of the certification services is often estimated at 200 to 250 euros, a sum close to the average monthly salary in the country, estimated at 350 euros. Then the documents are introduced to a 13-member special commission working under a body called NACID (National Centre for Information and Documentation), which takes the decision to validate or invalidate diplomas issues abroad. It holds sessions at varying intervals, and according to graduates the decision can take another three months. The NACID commission has the right to invalidate diplomas, in the case when there is a substantial difference between the curriculum of the foreign university and similar curricula for the same specialty in the country. Also, the NACID Commission can invalidate a diploma if the foreign university is not recognised by the foreign country's authorities.

Is the Sorbonne legal in France?

Bulgarian graduates complain of abuse: One writes that she had been requested to provide certification that the Sorbonne, one of the world's oldest universities, was indeed recognised by the French state. Another one shared his dismay, having been asked to provide a 20-page summary in Bulgarian of the PhD thesis he had obtained from a famous university in the UK, so that the NACID commission could ascertain its scientific value.

Bulgarian MEP Ivailo Kalfin signalled to Commissioner Androulla Vassiliou, responsible for education, what he described as an abnormal situation with diploma recognition in his country. Speaking to EurActiv, Kalfin insisted that the Bulgarian bureaucracy had no right to refuse to recognise diplomas from EU universities. Bulgaria, a country often criticised for insufficient administrative capacity to apply EU law, cannot afford to alienate for bureaucratic reasons those nationals who want to come back to their country after having obtained a qualification abroad, Kalfin said.

However, the fact remains that many diplomas of foreign universities simply remain unrecognised in Bulgaria. Asked to comment, Dennis Abbott, Vassiliou's spokesperson, said that recognition of academic diplomas is a matter for the member countries. However, that the Commission could consider infringement proceedings if it takes the view that the length of the recognition process is not justified and when such practices amount to punishing the students from exercising their freedom of movement.

EurActiv, Brussels, Belgium
www.euractiv.com

Sorbonne University, Paris

Recognition of higher education diplomas

The following reference for a preliminary ruling of the European Court of Justice has been made in proceedings between Christina Ioanni Toki, a holder of certain qualifications in the field of environmental engineering obtained in the UK, and the Greek Minister for National Education, in relation to decisions of the Greek Council for the Recognition of the Equivalence of Higher Education Diplomas refusing to authorise Toki to take up the profession of environmental engineer in Greece.

"Christina Ioanni Toki, a Greek national, holds a Bachelor of Engineering degree and a Master of Science degree in the field of environmental engineering, both obtained in the United Kingdom, in 1997 and 1998. On 1 September 1999 the University of Portsmouth engaged her as a researcher. She worked there in the Department of Civil Engineering until August 2002. Her activities included, in addition to general research work, assisting the work of undergraduate and postgraduate students and assessing the effectiveness of a pioneering method of waste processing. In the UK the activities constituting the engineering profession are regulated by the Engineering Council. Toki applied for interim registration, but she did not subsequently become a full member with the title of Chartered Engineer.

Since the profession of environmental engineer is regulated in Greece, Christina Ioanni Toki applied for recognition of her right to pursue that profession, and based that application on the qualifications and professional experience which she had obtained in the UK. That application was rejected by a decision of 12 April 2005 of the Council for the Recognition of the Equivalence of Higher Education Diplomas, on the ground that since Toki is not the holder of an engineering diploma in the UK, because she is not a full member of the Engineering Council and does not hold the title of Chartered Engineer, she could not rely on the mechanism of recognition provided for in point (a) of the first subparagraph of Article 3 of Council Directive 89/48/EEC of 21 December 1988 on a general system for the recognition of higher education diplomas awarded on completion of professional education and training of at least three years' duration.

Rejection challenged

Christina Ioanni Toki challenged that rejection before the referring court and claimed that her application had been unlawfully rejected on the basis of provisions of

Presidential Decree 165/2000 designed to transpose point (a) of the first subparagraph of Article 3 of Directive 89/48 into Greek law, namely Article 4(1)(a) of Decree 165/2000, whereas her application should have been examined on the basis of those provisions of that decree that transposed point (b) of the first subparagraph of Article 3, namely Article 4(1)(b) of Decree 165/2000, given that, first, the profession of environmental engineer is not regulated in the UK and, second, she held the necessary titles and had three years professional experience.

The referring court states that the rejection of Christina Ioanni Toki's application is in accordance with the rules established by the provisions of Decree 165/2000, which exclude the application of the mechanism of recognition provided for in point (b) of the first subparagraph of Article 3 of Directive 89/48 where, in the member state of origin, the profession concerned is regulated or deemed to be a regulated professional activity within the meaning of the second subparagraph of Article 1(d).

Questions for a preliminary ruling

Faced with difficulties in interpreting Directive 89/48, the Council of State decided to stay the proceedings and to refer the following two questions to the European Court of Justice for a preliminary ruling.

1. Does the mechanism of recognition provided for therein apply to cases in which, in the member state of origin, the profession in question is regulated within the meaning of the second subparagraph of Article 1(d) of Directive 89/48, but the person concerned is not a full member of an association or organisation which fulfils the conditions of that paragraph?

2. Does pursuit of a profession full-time in the member state of origin mean pursuit in a self-employed or employed capacity of the actual profession authorisation to pursue which is being sought in the host member state in reliance on Directive 89/48 or may it also cover employment on research work in a scientific field related to the profession in an establishment that is in principle not for profit?

Mechanisms of recognition

1. The first question concerns the particular situation, covered by the second subparagraph of Article 1(d) of Directive 89/48 and especially common in Ireland and the UK, in which the profession at issue is not regulated, within the meaning of the first subparagraph of that provision, by the member state of origin, but is often pursued in practice by the members of an association or private organisation, which ensures that those members respect a degree of regulation.

In that regard it is clear that it is only the mechanism provided for in point (b) of the first subparagraph of Article 3 which may apply to professions falling under the second subparagraph of Article 1(d). Firstly, the members of an association or an organisation referred to in the second subparagraph of Article 1(d) indisputably do not possess a diploma which is "required in another member state" for the taking up of a profession, as stipulated in point (a) of the first subparagraph of Article 3. Secondly, point (b) expressly excludes from its scope the professions covered by the first subparagraph of Article 1(d), but does not exclude those professions covered by the second subparagraph of that provision.

While it is true that the second subparagraph of Article 1(d) provides that the professions covered by that provision are to be deemed to be regulated professions where they are pursued by a member of the organisation or association concerned, that deemed equivalence is not full equivalence, and those professions do not constitute regulated professions within the meaning of Article 1(c). Consequently, the recognition mechanism provided for in point (a) of the first subparagraph of Article 3 thereof cannot be relied on by members of such professions. Furthermore, it is the mechanism of recognition provided for in point (b) which is applicable to a profession falling under the second subparagraph of Article 1(d).

The Council of State, Athens.

Irrespective of whether Christina Ioanni Toki is or is not a full member of the Engineering Council, it is therefore only the mechanism of recognition provided for in point (b) of the first subparagraph of Article 3 of which is applicable to her situation, given that her situation does not fall under Article 1(c) and the first subparagraph of Article 1(d).

Pursuit of profession

2. By its second question, the referring court seeks to ascertain which criteria should be applied in order to determine whether the professional experience must be taken into account for the purposes of point (b) of the first subparagraph of Article 3.

In that regard, Article 1(e) defines "professional experience" for the purposes of that directive as the "actual and lawful pursuit of the profession concerned in a member state". The purpose of the condition laid down in point (b) of the first subparagraph of Article 3, namely that an applicant for recognition from a member state which does not regulate either the profession which the applicant wants to pursue in another member state or the relevant education and training must provide evidence of a minimum of two years professional experience, is to enable the host member state to have the benefit of safeguards comparable to those in place where either the

Athens, Greece.

profession concerned or the preparatory education and training for the pursuit of that profession are regulated in the member state of origin, and where either point (a) of the first subparagraph or the second subparagraph of Article 3 apply.

The experience relied on must consist of full-time work for at least two years during the previous ten years.

Where a profession is not regulated by the state, the guarantee of a certain level of quality of service in the professional field concerned is usually ensured by market forces, in that only those members of the profession concerned who possess skills and abilities at a level deemed adequate by employers or clients will be capable of pursuing that profession full-time in an employed or self-employed capacity, over the prescribed period of two years. The essence of the requirement of professional experience of that duration is therefore that there is a real possibility that the applicant for recognition can pursue the profession concerned in the member state of origin.
Moreover, while point (b) of the first subparagraph of Article 3 requires that the profession concerned has been pursued "full-time", and while Article 1(c) defines a regulated profession as "the regulated professional activity or range of activities" which constitute that profession, it cannot be deemed necessary, without inordinately restricting the scope of the mechanism of recognition provided for in point (b), that an applicant for recognition has dedicated himself wholly and exclusively to the whole range of activities constituting the profession concerned in order for his or her professional experience to be taken into account.

Accordingly, it is sufficient that the experience relied on has involved, in a framework of full-time work, the continuous and regular pursuit of a range of professional activities which characterise the profession concerned, but it need not cover all those activities. The question of which professional activities are characteristic of a specific profession is principally a question of fact which must be resolved by the competent authorities of the host member state. If, as in the main proceedings, the profession pursued in the member state of origin is not a regulated profession in that state, reference should be made to the professional activities normally pursued by the members of that profession in that member state.

As part of that assessment, the competent authorities of the host member state must determine whether the professional experience for the purposes of point (b) of the first subparagraph of Article 3 consists principally in practical experience linked to the employment market for the profession concerned.

In that regard, the activities pursued by Christina Ioanni Toki, such as general research work or assisting the work of undergraduate and postgraduate students, cannot be considered, by themselves, as actual pursuit of the

profession of environmental engineer and therefore as professional experience which must be taken into account. On the other hand, work carried out in collaboration with a private company which specialised in technology relating to liquid waste processing might constitute such pursuit, provided however that that activity was pursued for at least two years on a continuous and regular basis in the course of full-time work.

If it were to be established that Toki actually pursued the profession of environmental engineer in the UK, it would be necessary to determine whether that profession constitutes the same profession as that which the applicant in the main proceedings has sought authorisation to pursue in Greece. In the context of the mechanism of recognition established by point (b) of the first subparagraph of Article 3, it is for the competent authorities of the host member state to verify whether that is the case.

In that regard, the expression "the profession in question", in point (a) of the first subparagraph of Article 3, is to be construed as covering professions which, in the member state of origin and the host member state, are identical or analogous or, in some cases, simply equivalent in terms of the activities they cover. That interpretation is equally valid in relation to point (b) of the first subparagraph of Article 3, a provision which expressly refers to the pursuit of "the profession in question".

It follows that the answer to the second question is that, before account can be taken of professional experience relied on by a person seeking to obtain authorisation to pursue a regulated profession in the host member state, the following three conditions must be satisfied:
The experience relied on must consist of full-time work for at least two years during the previous ten years. That work must have consisted of the continuous and regular pursuit of a range of professional activities which characterise the profession concerned in the member state of origin, but that work need not have encompassed all those activities.
The profession, as it is normally pursued in the member state of origin, must be equivalent, in respect of the activities which it covers, to the profession which the person has sought authorisation to pursue in the host member state."

European Court of Justice, Luxembourg
www.eur-lex.europa.eu

EFTA: Judgements on the recognition of qualifications

Judgements of the EFTA Court of 10 December 2010 in the cases EFTA Surveillance Authority v The Republic of Iceland (E-8/10), The Principality of Liechtenstein (E-9/10) and The Kingdom of Norway (E-10/10).

(Failure by a contracting party to fulfill its obligations – Directive 2005/36/EC on the recognition of professional qualifications – 2011/C 148/03-04-05)

In each of these 3 cases held on 10 December 2010, the EFTA Court made the following judgement. The Court declared that by failing to adopt within the time limit prescribed and by failure to notify the EFTA surveillance authority of all measures necessary to fully implement the Act Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005, on the recognition of professional qualifications into their respective national legislation Acts, The Republic of Iceland, The Principality of Liechtenstein and The Kingdom of Norway have failed to fulfill the obligations set under the first paragraph of Article 63 of the Directive and under Article 7 of the EEA Agreement, and ordered each to bear the costs of the proceedings.

(E-9/10 and E-10/10: as amended by Commission Regulation (EC) No 1430/2007 of 5 December 2007 amending Annexes II and III to Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications,)

(E-9/10: and by Commission Regulation (EC) No 755/2008 of 31 July 2008 amending Annex II to Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications)

Official Journal of the European Union

A global discussion about our energy future

Christa Rosatzin, Media Relations Officer WEC 2011

From 4-9 September 2011, more than 2000 engineers and researchers, as well as politicians and business representatives from 100 nations, will meet at the World Engineers' Convention (WEC) 2011 to discuss possible solutions for a sustainable energy future. In the run-up, the organisers are initiating a global discussion with their "Call from Geneva".

Can the increasing global energy consumption be met without intensifying global warming? Do the necessary technical solutions exist, and is the switch to a low-carbon energy supply feasible and financially viable? These questions are dealt with by the engineers of the World

Engineers' Convention (WEC) 2011 in the "Call from Geneva". The theses are currently being discussed by international participants on a blog at the website www.wec2011.org. The blog contributions will form part of a declaration that will be adopted at the WEC 2011 in September in Geneva.

The technologies exist

The "Call from Geneva" provides answers to current questions regarding the energy supply. Ruedi Noser, President of WEC 2011 and member of the Swiss National Council, summarises the main idea of the call: "A low-carbon energy supply is feasible and financially viable in regions such as Europe." For example, the amount of energy reaching the earth from the sun on any given day is about 10,000 times greater than the entire global energy consumption. So enough energy is available to meet rising demand. According to the "Call from Geneva", the amount of energy consumed is not the crucial factor leading to sustainability. It is more important to generate and consume energy while producing only the smallest possible amounts of pollutants, especially CO_2. Technologies already exist to harness energy from the sun and wind, to increase the efficiency when producing and consuming energy, and to build a grid to transport and distribute energy generated this way. A number of possibilities also exist for energy storage, such as pumped storage plants and innovative new batteries.

A low-carbon energy supply is financially viable

Ruedi Noser is convinced that in Europe the necessary investments can be made without a significant increase in energy costs. In their "Call from Geneva", the engineers conclude that autonomous regions such as Europe will be able to change their energy supply without losing any competitiveness. How the situation presents itself in other parts of the world is part of the discussion. While Europe wants to decrease CO_2 output by 20% by 2020, the USA will have to increase the price of fossil fuels to achieve the 2-degree target. China, on the other hand, will not be able to cover its energy requirements by fossil fuels alone and thus will be forced to develop renewable energy sources. "Europe, the USA and China will find different approaches to solving the problem of developing a sustainable low-carbon energy supply," summarises Noser.

World Engineers' Convention 2011
www.wec2011.org

Upcoming events

World Conference on Disaster Management
19 to 22 June 2011
Canadian Centre for Disaster Management, Toronto, Canada

8th Asia Pacific Conference on Sustainable Energy and Environmental Technologies (APCSEET 2011)
10 to 13 July 2011
Centre for Energy Technology, University of Adelaide, Australia

5th Cross-strait Conference on Structural and Geotechnical Engineering
13 to 15 July 2011
Polytechnic University, Hong Kong

ICWES 15
19 to 22 July 2011
Engineers Australia, Women in Engineering Committee, Adelaide, Australia

International Conference on Engineering Education (ICEE-2011)
21 to 26 August 2011
University of Ulster, Belfast, Northern Ireland

World Engineers' Convention (WEC) 2011 and WFEO General Assembly
3 to 9 September 2011
Geneva, Switzerland
www.wec2011.org

WEC 2011: WFEO Standing Committee on Women in Engineering
3 September 2011

WEC 2011: Registration, Welcome Cocktail, Full-day meetings of the WFEO STCs
4 September 2011

WEC 2011: Opening Ceremony, Plenary Session, Half-day meetings of WFEO STCs, International Advisory Board WEC 2015, WFEO International Members Roundtable, WFEO Senior Advisory Body, WFEO Special Sessions and Events
5 September 2011

WEC 2011: Keynote Speakers, Young Engineers, WFEO Executive Council
6 September 2011

WEC 2011: Speakers, Closing Ceremony, Dinner
7 September 2011

WEC 2011: WFEO General Assembly
8 and 9 September 2011

WEC 2011: WFEO New Executive Council
9 September 2011

Second World Landslide Forum
19 to 25 September 2011
Global Promotion Committee of the International Programme on Landslides, Rome, Italy

International Conclave on Climate Change (ICCC-1)
12 to 14 October 2011
Centre for Climate Change, Engineering Staff College of India, Hyderabad, India

Surveillance and Safety
15 to 20 October 2011
Canadian Dam Association, Fredericton, New Brunswick, Canada

Escaping Silos
24 to 26 October 2011
Society for Sustainability and Environmental Engineering, Brisbane, Australia

Earthquake Engineering
18 to 20 November 2011
The Australian Earthquake Engineering Society, Barossa Valley, Australia

14th Middle East Corrosion Conference and Exhibition
12 to 15 February 2012
Bahrain Society of Engineers, Kingdom of Bahrain

For details see www.wfeo.org

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