

Meeting review: Converging ambitions

Europe still faces a challenge in meeting the demand for future engineers. However, thanks to FEANI and its efforts to establish the Engineers Europe Advisory Group (EEAG), the cornerstones are in place to find the solutions.

Despite the disparity between the engineering skills that Europe's industry needs and those emerging from education institutes, a strategy for closing the gap is emerging. Thanks to the efforts of the Engineers Europe Advisory Group over the last 12 months, the elements needed are falling into place. This was the key message to a large audience at the a recent FEANI hearing entitled “*The future engineer: wishes and facts*” that marked the first anniversary of the launch of the Group.

Engineers need to show leadership



Mr Jacek KRAWCZYK, President of the Employers' Group at the European Economic and Social Committee, opened the event

FEANI's President, Prof José VIEIRA, was pleased to announce that since the inauguration of the EEAG exactly one year ago, 15 more organisations had added their names to the FEANI consortium, which now totals 27 signatories. Society faces major new challenges, particularly in environment and energy; engineers need to show leadership in solving these problems. Doing this means having young engineers with the correct skills and enthusiasm to make a difference. The existing skills gap needs to be overcome; this is what FEANI is actively trying to address. Education was part of the answer, but education in its broadest sense; not solely academia, learning by doing, apprenticeships and work placement are also of vital importance.

Skills and innovation are key to future business success

During the first of two round table discussions, stakeholders explored the challenges they faced in attracting talent. Mr Markus BEYRER, Director-General of Business Europe said their members were increasingly concerned by the skills gap; skills and innovation are key to future business success. The Business Europe Reform barometer, which benchmarks Europe against other economic areas, showed the gap at its greatest in 20 years. He noted that too often, academic choices were disconnected from market needs. The need for Science, Technology, Engineering and Mathematics (STEM) skills will only increase; there was a clear need to adapt training and education accordingly. In addition, skills – particularly digital skills - can quickly become obsolete. The key, he felt, was to start early, exposing primary schools to the potential of STEM subjects. However, this needs to be ‘hands on;’ not textbook learning. He agreed that a ‘working by doing’ approach was important; Business Europe actively supports apprenticeships.

Europe needs to address its current excessive risk aversion

In addressing this, it was important to raise the profile of the prestige of engineering as a career. Europe also needs to address its current excessive risk aversion – it blocks progress. Failure, if properly analysed and solved, can be positive. Gender balance was also an issue, with twice as many males as females studying maths; in ICT, the gap is even higher.



Mr Dirk BOCHAR, FEANI Secretary General; Mr Markus J. BEYRER, BUSINESSEUROPE Director General, Mr Ralph APPEL, FEANI Vice-President

Engineering graduates should be a key target for outreach

Speaking for the European Young Engineers (EYE) organisation, Ms Milda PLADAITE explained that her organisation represents some 250,000 young engineers in Europe. In her public policy role, two issues stood out; the first was professional mobility. Mutual recognition of qualifications was key, and EYE was undertaking a survey to inform a future position paper on this issue. The second issue was mentoring; encouraging people to pursue studies in engineering and supporting them as they progressed. In her case, her father had proved the inspiration, but that was not always the case. Engineering graduates should be a key target for outreach.

It is important to find a ‘European Way’ for developing new talent

Speaking for CEFIC, the European Chemicals Industry Council, Executive Director Mr William GARCIA said that the chemical industry was facing a talent crunch. He believed it is important to find a ‘European Way’ for identifying and developing new talent needed; an approach that European Commission President-elect Ursula von der Leyen was eager to see. He too felt that the skills required were not being reflected. The industry will also become less siloed; environmental concerns will see much stronger interconnections with other industries as they seek to deal with the full lifecycle of their products. Molecule management, i.e. knowing how to construct - and deconstruct molecules - will be vital in future.

Engage the imagination of the potential engineers of tomorrow



General view of the Engineers Europe Advisory Group Meeting, 11 September 2019

Mr Antoine FERAL, vice president for EU affairs at Rolls-Royce Aviation, explained that the company relied on engineers across all its product ranges. For this reason, it invested heavily in professional development; people, he said, “are our power”. The company routinely looked for ways to engage the imagination of the potential engineers of tomorrow. Each Friday, the company receives a report detailing how many schools and universities Rolls-Royce has visited to talk about the company and the opportunities engineering can offer. This doesn’t stop at schools; they also seek local community partnerships as a way of engaging with those young people outside of school or even employment.

‘On-the-job training’ should enjoy wider recognition

The panellists agreed there was a significant gap between education and the real world. Discussing potential measures, Ms PLADAITE stressed the importance of lifelong professional development, while Mr FERAL believed that creating and defining core technologies to help young people choose would be a step forward. Mr GARCIA added that the value of ‘on-the-job training’ should enjoy wider recognition.

Skills have little value without their formal recognition

Opening the second round table, Ms Katarina ANANIADOU, a Programme Specialist with UNESCO–UNEVOC, highlighted the importance of cross-border skill recognition. More than a quarter of a billion people currently live in countries outside the one where they were born, and in so doing bring skills and qualifications with them. However, these skills have little value without their formal recognition. UNESCO–UNEVOC is developing tools to make qualifications and skills more portable. The introduction of “*World Reference Levels*” can help translate outcomes-based qualifications into forms that are comparable between countries.

Quantify the value and the impact of mentoring

Prof Heidrun STÖGER, Chair Professor at the University of Regensburg in Bavaria, addressed the issue of mentoring, particularly those students with the greatest potential. The *Global Talent Management Hub* would mentor outstanding students from around the world from the age of around 16 upwards, supporting them for up to 10 years and giving them access to a global network of peers. The programme, which was due to start in 2020, would try to quantify the value and the impact of mentoring.

Everyone should be equipped with core scientific knowledge

Mr Mikkel BOHM, Director of Astra, the Danish National Centre for Learning in Science, Technology and Health, described the success of their work in promoting STEM subjects in Denmark. He explained that it was important to recognise that “not everyone should become an engineer”; however, everyone should be equipped with core scientific knowledge to understand the world around them, effectively. By starting at an early age, children would gain the right insights, encouraging more of them to pursue STEM subjects. Denmark, with its FEANI national partner in Denmark, IDA, had put in place an ambitious long-term approach for putting engineering on the curriculum. It was clear he said that students remember discussions in engineering courses better than those in traditional teaching. It did a better job in motivating and engaging people.

The importance of seamless life-long learning and the value of apprenticeship

The last speaker, Mr Iskren KIRILOV, Policy Officer at EURASHE, the European Association of Institutions in Higher Education, believed that FEANI and his organisation shared both a common vision of the future and the best way to bridge the skills gap. He echoed many of the points that had already been stressed; the importance of seamless life-long learning and the value of apprenticeship and work-based learning as part of the future ‘European Way’. He foresaw a future for education that encouraged increasingly flexible skillsets; professionals would acquire elements of knowledge and skill when they needed it, increasingly crossing over professional boundaries. This adaptability will be key to success.

Solid achievements to be proud of

Closing the meeting, FEANI Vice-President Ralph APPEL noted that there were solid achievements to be proud of during the last year. Not only had it enlarged the consortium membership significantly, members now had a more complete overview of the skills landscape. This provided a platform where they could leave their comfort zones and advance discussions collectively. Looking to the future, there was sufficient critical mass to move away from plenary discussions; it was time to create working groups to advance the ambitious work programme for the coming year. He looked forward to future hearings, on a biannual basis, reporting back on achievements to help accelerate progress. Given the predicted shortfall engineers throughout Europe, rapid progress was not only desirable but essential.



Mr Herman DE LEEUW of the Groningen Declaration Network and Prof. José VIEIRA, FEANI President, signing the Letter of Intent

Colin Mackay

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