

**cdefi**

Conférence des Directeurs  
des Écoles Françaises  
d'Ingénieurs

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of the Council of the European Union



REPORT OF THE EUROPEAN CONVENTION

# Being an engineer tomorrow in Europe

24 January 2022

At the maison de l'Océan, Paris

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# 01

# Opening session

**Jacques Fayolle,**  
Dean of Télécom Saint-  
Étienne and President of  
CDEFI

Jacques Fayolle highlights that this bilingual (French-English) conference is taking place both in-person and remotely for the speakers as well as the participants. He thanks CDEFI's team for taking up the challenge of organising the event.

The theme chosen is highly topical and focuses on two main topics. The first one is related to **the French Presidency of the Council of the European Union, which represents a lever of change** that cannot be overlooked. The second one is the opportunity to take an **introspective look at engineers and their training in France and in Europe**. Besides the digital and climate change-related transitions, attitudes toward work are evolving. In response to these multiple factors of change, engineers have to adapt their training and skills, especially given the fact that Europe's position in the world is being questioned.

French engineering schools are involved in various European Universities. Although the initiative is still in its early stages, the schools must seize **the opportunity and aim for the creation of a European engineering degree**.

In addition to the support and collaboration of the CTI, which actively takes part in the ENAEE's projects and is registered in the European register EQAR, **CDEFI is in the process of setting up an International Advisory Board** whose goal is **to address the evolution of the needs of society, businesses and students from a European and international perspective**.

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# 01

CDEFI also put forward nine propositions for the French Presidency of the Council of the European Union, that include:

- ★ Developing engineers' skills to serve reindustrialisation and sovereignty.
- ★ Promoting apprenticeship training.
- ★ Strengthening the role of internships in European training programmes.
- ★ Promoting entrepreneurship, including in its European dimension.
- ★ Taking better account of the diplomatic aspect of European Universities in order to create places for dialogue and to embody European Universities.
- ★ Facing the issue of inclusion, especially by encouraging graduate mobility and establishing a legal framework for academic freedom.

All detailed propositions can be found [here](#).

# 02

## Recent announcement of the European Commission (EC) on the "Higher Education Package": Which opportunities for engineering training?

**Pauline Ravinet,**  
Policy Officer,  
Unit B1 Higher education,  
DGEAC,  
European Commission

Pauline Ravinet explains that she joined the European Commission in the second half of 2021 within the B1 Unit (Higher Education) of the DGEAC in order to prepare the European Strategy for Universities.

On 18th January 2022, the EC adopted the Communication on a European Strategy for Universities (to be understood as higher education institutions), which includes a proposal for a Council Recommendation, together forming a "Higher Education Package". This package aims at **fostering transnational cooperation between higher education institutions within the European Union.**

At a time when the EU is facing major structural challenges and an unprecedented health crisis, making the European Strategy for

Universities a political priority of the EC is a way to **acknowledge the key role higher education has to play in transforming European societies.** Symmetrically, higher education institutions need Europe and the states to help and support them during this transition.

The European Strategy for Universities is closely entwined with several significant European initiatives and priorities, among which **the European Education Area, the EU Global Strategy, the European Skills Agenda** or the **Digital Europe Programme.**

Eighteen months of intensive dialogue following a logic of co-creation with European higher education institutions were necessary to jointly consider the actions to undertake.

Consultations that preceded the development of the European Strategy for Universities brought out **a number of challenges higher education institutions must deal with:**

- ★ Various obstacles (including administrative and legal ones) to transnational cooperation between European institutions.
- ★ Insufficient funding for higher education in respect of its missions.
- ★ The necessity to adjust skills and knowledge to the needs of the job market and of innovation in the academic ecosystem.
- ★ Diversity and inclusion, including social and gender equality issues as well as academic freedom that is being put under pressure in some parts of Europe.
- ★ Competitiveness within the European higher education system, while competition for talents, research and innovation is strongly increasing on an international scale.

**The European Strategy for Universities is built on four key objectives:**

- ★ Strengthening the European dimension of higher education and enabling an extensive transnational cooperation between higher education institutions within Europe (such a cooperation being a significant factor for innovation and transformation).
- ★ Consolidating the role of universities in developing the European social model, which means at the same time ensuring the quality and relevance of skills provided by the higher education system as well as diversity and inclusion, and strengthening European democratic and academic values.
- ★ Consolidating the role of universities as major change-makers in the ecological and digital transition (by allowing institutions to develop new contents and modules and by encouraging them to evolve so that they increase by themselves their sustainability and connectivity).
- ★ Strengthening the role of higher education institutions as driving forces of Europe's global influence in the world, for instance by supporting their attractiveness.

These objectives rely on **four flagship initiatives**:

- ★ Implementing the European Universities Initiative, so that Europe would count 60 institutions by 2024.
- ★ Working towards the creation of a European status for higher education institutions' alliances.
- ★ Gradually initiating the creation of a European Degree.
- ★ Generalising the European Student Card in order to encourage mobility and to develop a sense of belonging among students.

Pauline Ravinet argues that the European Strategy for Universities is not only based on a shared vision and broad goals: although those are essential elements, there is a **necessity as well to ensure its implementation** and to **establish a monitoring framework in order to evaluate its efficiency**. Such measures are indeed planned.

**In total, 80 billion euros are to be invested** in the EU's 2021-2027 budget planning. **A European Observatory on Higher Education will be created** in order to gather in one place existing statistical data on major transformation issues within the higher education system. Member states and institutions will be able to access these data.

In response to a participant about **the role of European students in this strategy**, Pauline Ravinet attests that this aspect is fully integrated into the EU strategy. Promoting European values such as democracy and inclusion implies a number of prerequisites, which includes allowing students to be actively involved in the governance of higher education institutions. Additionally, student organisations have been closely associated in the consultation process.

**The EU strategy includes 55 actions**, some of which will take shape sooner than others. The EU seeks to quickly move forward by encouraging its member states to commit to these actions in the coming months.

# 03

## From the engineering degree in Europe to the European Engineering Degree?

Hosted by

**Christian Lerminiaux,**  
Dean of Chimie ParisTech  
and Vice President of  
CDEFI

with the interventions of

**Mamadou Aliou Barry**  
Data Engineer consultant  
at Harrington

**Élise Chedal-Anglay,**  
Manufacturing Engineer  
at Airbus Helicopters

**Guillermo Cisneros,**  
Rector of the Technical  
University of Madrid and  
member of the CESAER  
Board of Directors

**Damien Owens,**  
President of ENAEE

**Wolfram Ressel,**  
Rector of the University  
of Stuttgart, President of  
TU9 – German  
Universities of Technology

Christian Lerminiaux opens the round table by arguing that digital transition is essential and that Europe suffers from a lack of skills in this field, which generates **a strong need to increase the number of engineers graduating every year.** Germany for instance is estimated to lack 60,000 engineers. It is therefore necessary to specify **the courses and skills Europe wishes to develop in a coordinated and converging approach.**

European engineers are known for their creative, pragmatic and positive mindset. According to Jens Schneider, the EU does not sufficiently include these dimensions in its strategy, although they should definitely be taken into consideration.

Wolfram Ressel acknowledges the significant challenges Europe has to face in the context of digital and ecological transitions, yet bringing awareness on the fact that these challenges are widely discussed without always being fully understood.

Although engineers could contribute to the discussion, they are not heard because they do not know how to communicate properly. In order to be given the central position they aspire to hold in European societies, engineers will have to **develop their communication skills.**

Europe also needs multilingual talents, Jens Schneider highlights. **From now on, European engineers' basic set of skills must include language proficiency,** so that they will be able to cooperate with ease throughout Europe.

While reaffirming the necessity not to neglect basic engineering skills such as mathematics that are essential for international accreditation, Guillermo Cisneros emphasises **the need to harmonise the regulatory framework for European degrees,** because current disparities contribute to undermine the cooperation between young European engineers as well as their sense of belonging.



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# 03

**Jens Schneider,**  
Vice President of Transfer  
and International Affairs at  
the Technical University of  
Darmstadt (TU Darmstadt  
is a coordinator of the  
Unite! European Alliance)

Christian Lermينياux notes that although the Bologna Process endeavoured to initiate a convergence of engineering training systems throughout Europe as part of the wider ambition to create a European Higher Education Area, it was a nightmare for Germany given the difficulties encountered.

Nevertheless, assessment systems have improved over the last fifteen years, Damien Owens observes. Nowadays in many European training institutions that focus on engineering, they include **include requirements such as collaboration, team work, awareness of sustainable development issues and understanding of ethical aspects**, enabling students to significantly increase their proficiency in these fields.

Élise Chedal-Anglay, who graduated from EPF, a French engineering school based near Paris, explains how studying for two years at Munich University of Applied Sciences, Germany allowed her to discover the German business world (through internships) and to enrich both personally and culturally speaking. She argues for **developing study periods abroad with the aim of facilitating intercultural understanding and communication** between students and professionals from different countries.

Mamadou Aliou Barry, who is a Data Engineer Consultant at Harrington, indicates that he did a sandwich engineering training programme in France and in Quebec (distance learning due to the health crisis) and that the experience allowed him to really understand the differences in teaching methods and contents between France and Canada

When asked by Christian Lermينياux on how to define the outline of a **“joint European Degree”** (which is an objective included in one of the 55 actions of the European strategy), Wolfram Ressel observes that in Germany, the Bologna Process resulted in a legislative change that turned out to have a negative impact on German Universities of Technology because they were opposed to the reform. Institutions did not have any choice but to adapt. The new regulatory framework that was implemented about fifteen years ago reduced the extent of fundamental lessons, that are today limited to six semesters. However, there is no question of going back today, unless risking a revolution of Germany’s higher education system! Instead of rushing one way or the other, Wolfram Ressel suggests **establishing equivalences between the content taught in fundamental subjects** (such as mathematics, physics, chemistry, etc.) in European ins-

tutions, which would open the way for students to obtain European academic credits. One of the TU9 - German Universities of Technology alliance proposals would be to have a common base which would last two years, followed by two years of specialisation and one year of focus on the adaptation to market needs.

One requirement will also be to make sure that the European label covers the same quality of education throughout Europe. Instead of adopting a top-down approach with a framework imposed by Europe, **it is better to look for a convergence between institutions following a bottom-up approach**, Jens Schneider argues.

Damien Owens agrees: it is impossible to set a single program for all and it would be a mistake to think all degrees must be identical, even though they could have a common core curriculum. As for harmonisation, it would be easier

to achieve in some fields, such as in aeronautics. **Accreditation agencies must be able to assess degrees and make sure that essential elements regarding traditional engineering subjects** as well as soft skills are included in course programmes.

While discussing with the audience, Marjorie Berthomier highlights how small and medium-sized companies recruiting engineering students value the idea that the degrees of their newly-hired employees are recognised at national level. She asks Élise Chedal-Anglay about her experience on that matter. Although she has a French-German joint degree, Élise Chedal-Anglay thinks that her French school, EPF, and the work experience she gained thanks to her internships were decisive for the company that hired her, even more than the degree itself.

# 04

## Training and research in global value chains

**Dimitris Deniozos**, consultant, member of the EURAXESS Advisory Board

Dimitris Deniozos **repositions training for service sector jobs within the changing framework of the labour market.** Service sector jobs, especially in engineering, are more and more European and internationally oriented rather than nationally-oriented, which make it necessary to **reconsider the outlines of training curriculum.** Since they also contribute to value chains of economy and knowledge, universities and higher education institutions must provide new and open knowledge that would be available for economic players. Overall, **higher education institutions are becoming significant stakeholders within techno-economic networks through training and research, and knowledge is now a “raw material” for chain values.**

Regarding European initiatives, the Bologna Process was adopted in 1999 by 48 countries and led to the implementation of the “3+2+3” system as well as the mutual recognition of diplomas. It was followed by the adoption

of the Erasmus (from an academic perspective) and Leonardo (from a professional perspective) programmes, and the implementation of quality assurance for the service sector. Launched in 2003, EURAXESS is another of these initiatives. 600 centres across 42 member states participate in this programme, which is entering its 4th year. It involves nine lines of actions known as Work Practices that cover topics such as project management, career development, social integration initiatives or even connection with the industry.

Dimitris Deniozos then speaks a little about the situation in Greece, that has been part of the Bologna Process from the beginning. Although Greek Universities of Technology have overall withstood the Bologna system (3-5-8), in 2018-2019 a wave of change led to Greece’s technological institutes to disappear, two of them being transformed into universities and the rest being merged into existing universities. For now, these

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# 04

mergers have mainly focused on the administrative side and it is still difficult to know whether they will have an impact on education content and degrees.

**As for the French “Grandes écoles”,** Dimitris Deniozos concludes **by asking if their purpose is to respond to domestic job market needs and to what extent they must address European market needs.**

# 05

## Engineers in Europe: identity challenges for an evolving profession in the 18th and 19th centuries

**Irina Gouzevitch,**  
Researcher,  
Maurice Halbwachs  
Centre,  
École des hautes études  
en sciences sociales  
(School for Advanced  
Studies in the Social  
Sciences)

Irina Gouzevitch reminds the audience that the word “engineer”, which appeared in the 13th or 14th centuries, has a **double meaning**: an engineer is both a **builder** and, based on a more modern definition, **a person who has received a scientific and technical training making them able to lead projects and participate in research.**

Several factors of evolution have combined to give rise to modern engineers. Historically speaking, classical tradition was replaced by the Enlightenment. Enlightened absolutism was overthrown by revolutionary waves for the benefit of more democratic governments. During the Renaissance period, engineers were specialists working for sovereigns and towns. **The 17th century marks the emergence of a hierarchised professional corps** with the creation of a corps of military engineers. In the following century, the grounds

of modern engineers’ identity are set, including a specific training system, a professional credential, a social status and a defined career path. **While the first corps of engineers took shape within the military, it soon extended to the public works sector.**

In the 18th century, a professional corps of State engineers emerged, later overshadowed by civil engineers during the 19th century. **Also, two training methods in engineering developed throughout history**: the first one is on-the-job training (following an apprenticeship / mentorship pattern, a common European tradition that was structured in systems in England); the second one consists in enrolled academic training built on theoretical courses completed by practical work and site visits. This second training model gradually spread across all Continental Europe. In each country, training systems have

been empirically built according to available resources, for instance on the basis of corporations in which future engineers received regulated training on top of off-site practical teaching.

**In France, two training programmes were simultaneously created:** the *École des travaux publics* (Public Work School) in 1794, which became the *École polytechnique* one year later, and the *Conservatoire national des arts et métiers* (CNAM).

Based on two levels of technical training (a core curriculum followed by specialisation in another school), the *École Polytechnique* relies on meritocracy and personal excellence with an egalitarian approach. Irina Gouzevitch notes that this specific model was only successful in France, although in the beginning of the 19th century it inspired other nations such as Russia, Belgium or Spain to create comparable institutions – for instance the *École royale militaire* and the *École des ponts et chaussées* in Belgium. However, these attempts to reproduce the French two-level system were more symbolic claims than actual entire replications. As for CNAM, it first leaned towards the demonstration of machinery for mechanics before gradually becoming a technical training course intended for people who wanted to learn a

trade, in the context of the 1819 introduction of free open courses for all.

More broadly over the 18th century, **engineers have evolved to become project managers dealing with fundamental changes regarding technology and the application of science to industry.** Towards the end of the century, the idea that each European country must picture the engineers' role according to its own social, professional and economical context arises.

**During the 19th century, a new type of engineers appears: the civil engineers, who work for the civil society and private industry,** breaking with the 18th century Enlightenment to initiate an extensive process of industrialisation that led to major political and social upheavals throughout Europe. Civil engineering as a notion developed to differentiate this emerging professional corps from the military engineers, but it also sets apart engineers who work for the private sector as opposed to those working in public administration. Industrial engineers' training model broadens from 1850 and new schools and courses on applied sciences emerged after 1880, creating or prefiguring the "grandes écoles" and other engineering education institutions we know nowadays.

# 06

## Economic recovery, sovereignty and major societal challenges in Europe: what engineers do companies need today and tomorrow?

*Hosted by  
**Sarah Piovezan,**  
journalist at AEF Info  
– Higher Education &  
Research*

with the interventions of

**Bruno Debatisse,**  
Vice President, Human  
Resources – France  
at Legrand Group

**Hervé Humbert,**  
Site Supervisor  
at Butachimie

**Dale A. Martin,**  
former President and  
CEO of Siemens Zrt. in  
Hungary, President of  
the European Alliance  
EELISA

**Olivier Schiller,**  
Vice President of METI –  
the French federation for  
medium-sized  
companies,

The Legrand company recruits every year several hundred engineers all over the world, of which a few dozen in France. The main difficulties that the company faces are the low recruitment rate of women and the human resources shortfalls in some specific areas of expertise such as computer security, Bruno Debatisse says. The company, that takes on young graduates and apprentices, recruits more junior employees and gives priority to internal promotion and career development. If France represents only 15% of Legrand revenues, 40% of its research and development is based in France, Bruno Debatisse underlines. This clearly indicates **the competitiveness of R&D carried out in France and the quality of French engineering training**. The growing complexity of technical systems developed and used by Legrand should lead to an increased level of skills needed by the manufac-

turer of electrical equipment over the years to come. This should result in an increase in the number of engineers in sales related positions. In general, Legrand is looking for engineers who stand out from the others in their ability to interact with those from other areas of expertise: **it is becoming increasingly important to be able to discuss with the production support teams, as well as with future managers and their peers**, because R&D, for a long time was very much self-focused, and is now interacting with external departments.

The Septodont company has a turnover of more than 300 million euros, 90 % of which is generated outside France, Olivier Schiller mentions, even though its production remains mostly in France. The group employs about fifty engineers in the different departments of its Parisian office,

ETI ambassador,  
CEO of Septodont Group

but it has some difficulties in recruiting young engineers who tend to prefer to work in start-ups or major companies. However medium-sized companies offer great international careers and faster opportunities for career development. **Today's engineers are more global than European: beyond the cultural differences, the skills that companies need are the same in Brazil, Canada and France.**

The Butachimie company operates in a niche and strategic segment of petrochemicals and therefore it must be demanding in terms of skills, **particularly excellence in basic engineering skills**, Hervé Humbert says. The company meets this requirement through apprenticeship training programs that gives an opportunity to understand each other better. As companies must be agile, Butachimie pays **special attention to behavioural skills** because it needs employees who are able to manage change and question what they do. It is particularly difficult, in the current period to recruit young graduates for project management functions.

In the light of his experience at Siemens Group in different countries, Dale A. Martin speaks about the human resources strategy of the company and considers that businesses need highly technical expertise and committed

employees. **Flexibility, adaptability, empathy, willingness to learn and engage in dialogue with stakeholders** from different cultures and areas are among the most required qualities. The **inter-disciplinarity approach** is also mandatory to face climate change and digital transition issues. Dale A. Martin underlines as well that French engineers are trained to assume leadership positions and thus are able to adapt to changing trends in business needs.

Asked about the objectives of the European alliance EELISA (European Engineering Learning Innovation Science Alliance) and the characteristics of the European engineer in comparison to its Chinese and American counterpart, Dale A. Martin truly believes that, **in terms of personal and cultural enrichment, it is very important for students to complete part of their studies in another country.** This kind of experience is of great value and exchange programmes will become increasingly more important in the post-Covid period.

Questioned as well on this issue by Sarah Piovezan, Bruno Debattise agrees with the point of view of the previous roundtable that engineers "do not communicate well" and have to develop this skill: **they need to understand that they have to interact with their immediate environment**



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# 06

**and the entire world.** But, as they say themselves, they haven't been trained to do that.

**If the chemical industry sector** has long had a bad reputation concerning the challenges of sustainable development, times have changed, Hervé Humbert says.

The industry has a role to play and it has also become compulsory to meet these challenges. **Engineers will naturally be at the forefront of these transformations** as there will be an increased importance of the development of production processes using less energy and raw materials.

# 07

## Students' expectations for a responsible and sustainable Europe: between awareness and commitment

**Antonio Bikas,**  
President of BEST – Board  
of European Students of  
Technology

**Simon Buoro,**  
student at INSA Toulouse  
and co-founder of Ilya

Simon Buoro graduated in mechanical engineering in 2018 from the French school of engineering INSA Toulouse. He said he was involved in various ways in student organisations such as Green'INSA which mostly aims to raise students' awareness of sustainable development. When he graduated, he cofounded Ilya in 2018 with the aim to offer solutions that would reduce the environmental impact of daily actions, and especially the reduction of water and energy consumption of showers. The engineer has to find solutions to problems and Simon Buoro thinks **that it is very important for students to be aware of the environmental, political, social and economic issues of the problems they have to solve. The environmental issues need to be placed at the heart of engineering education** whereas Simon Buoro said he only attended a 4-hour course on eco-design during his five years of engineering studies.

Antonio Bikas agrees with Simon Buoro's point of view: students want to find a job but they expect a more sustainable way of life and **they are concerned about the protection of the living world.** They have a longer term perspective: **they want to have an impact on the world** and strive to implement more sustainable practices in their area. The impact of engineers on the world has also a greater importance today than thirty or forty years ago. **The understanding of the various dimensions of their role and their integration into society is now part of the requirements of engineering education.**

# 08

## Adapting engineering education in Europe to the labour market and students' expectations: overview and challenges

*Hosted by*

**Jacques Fayolle,**

*Dean of Télécom Saint-Étienne and President of CDEFI*

with the interventions of

**Marjorie Berthomier,**

*Secretary-General of the Franco-German University*

**Hannu-Matti Jarvinen,**

*President of SEFI*

**Klara Kövesi,**

*coordinator of the A-STEP 2030, project, ENSTA Bretagne*

**Benoît Raucent,**

*professor, École polytechnique de Louvain (Louvain School of Engineering)*

Over the last two years, engineering schools have relied a lot more on digital solutions, Jacques Fayolle observes before asking in an intentionally provocative way whether European engineering schools in the future will be off-campus institutions that would teach courses remotely and whether Covid-19 has just held a catalytic role on that regard.

Marjorie Berthomier is convinced that, if introduced today, such a proposal would raise a general outcry within the student community. **Students want to see each other, meet their peers and be able to study abroad.** It is indeed the mission of the Franco-German University, a network of 208 universities spread across France, Germany and other countries. It unites 190 integrated Franco-German courses including 25 % of engineering curriculum, representing 6,400 students. Each curriculum theoretically leads to a double

degree of the same level and includes an exchange programme in the other country (France or Germany, depending on where the course has been followed).

Benoît Raucent also observes that **we are not all equal when it comes to digital access**, confirming that there is a strong need for socialisation. If some teaching practices are fully adapted to distance learning, others require face-to-face interaction. In any case, it is necessary **to adapt teaching methods to desired goals.** Hannu-Matti Jarvinen, university professor in Finland and President of SEFI (European Society for Engineering Education), which consists of over 200 members across Europe, notes that **learning is a social process.** Not everything can rely on technology. We cannot return to the pre-crisis situation either: we must **find a new balance between these tools and more traditional approaches.**

Higher education institutions will always need laboratories and will not be able to virtualise all their courses, especially given the fact that students' feelings of isolation and depression have significantly increased since the beginning of the the health crisis.

The Franco-German University experience shows that **digital tools can be of help in preparing contents in the language of the partner institution** (French or German depending on the case), Marjorie Berthomier adds. These tools can therefore be put to good use to better involve students and prepare them to study abroad by enabling a later assimilation of course contents. Based on this observation, the Franco-German University implemented an assistance programme with the aim of providing institutions digital support before, during and after students exchanges between both countries.

Coming back on the two accounts given right before the round table, Jacques Fayolle **witnesses students' strong expectation regarding sustainable development and societal change values**. He wishes to know how the organisations around the table meet these expectations.

According to Hannu-Matti Jarvinen, there is no need to come

up with specific lessons on these topics: they must be cross-cutting subjects of all courses.

Klara Kövesi agrees with him: students know that in the next ten or fifteen years, their jobs will include environmental challenges just like economic goals or the 17 UN Sustainable Development Goals. Engineering training courses must incorporate all these dimensions. A survey carried out in several countries (Ireland, France, Finland, Denmark, etc.) shows that **students express a desire to take sustainable development into account in every course**, for it is now found in every context involving the application of scientific and technical knowledge.

Interestingly, French students' responses to the survey also reveal that **they now tend to attach more importance to collaboration than to competition**, although it has not always been promoted within the French engineering training model, Jacques Fayolle notes.

Nevertheless, much progress remains to be done in order to make engineers speak out before the rest of society, Hannu-Matti Jarvinen thinks, for knowing the issue is not enough anymore: it is necessary to show society that engineering training has taken full account of these aspects. This is

an additional factor that argues for a rebalancing in favour of soft skills.

**According to Benoît Raucent, it is becoming essential to work on adding new requirements to projects in which students take part** (including for instance a criterion of resource availability). For Raucent, it also appears clear that sustainable development issues go hand in hand with co-construction, participatory approaches and exemplary initiatives.

Finally, Jacques Fayolle questions the speakers on the institution they would build if they had free rein and unlimited funds.

Benoît Raucent would rely above all on **autonomy learning**, giving students much more freedom, especially through small-group work.

Klara Kövesi would also emphasise the development of student autonomy **and communication**, and would strive to introduce **much more diversity** in student profiles.

As for Hannu-Matti Jarvinen, he would **to have a sufficient number of teachers compared to the number of students** in European institutions.

If the Franco-German University acts as a great example, Marjorie Berthomier insists on **the importance of being able to speak several languages**. It is also to be hoped that distance learning will provide the same **agility** and **modularity** as in-person classes without impacting the consistency of teaching.

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# Conclusion

**Jacques Fayolle,**  
Dean of Télécom Saint-  
Étienne and President of  
CDEFI

Highlighting the richness and diversity of views that were discussed throughout the day on topics regarding Europe and engineering, Jacques Fayolle notes there are still significant differences between the typically French vision of engineering training and the vision in other European countries. Such a diversity can initiate relevant and interesting initiatives, provided nations are willing to tackle it pragmatically, to trust each other and to respect the values underlying these different approaches.

In the professional environment, French engineers are capable of convincing, even of influencing, an ability that will become highly valuable in the fast-moving world. There is however still room for improvement in this regard. **The European engineer is not a utopia: it is a work in progress involving numerous stakeholders.**



Conférence des Directeurs  
des Écoles Françaises  
d'Ingénieurs

CDEFI (Conference of Deans of French Schools of Engineering) is a non-profit association of Deans of French public and private schools of engineering and universities of technology authorized by the CTI (a French accreditation agency) to deliver the French engineering degree. Created in 1976 by a decree issued by the Ministry of Higher Education and Research, CDEFI is the local, national and international political and public voice of French schools of engineering and universities of technology. ★

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