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Executive Agency for Small and Medium-sized Enterprises (EASME)

Department A - COSME, H2020 SME and EMFF

Unit A1 - COSME

Skills on Smart Industrial Specialisation and Digital Transformation

4th Expert Workshop

Wednesday, 12 December 2018, 10h00-17h00

NH Collection Grand Sablon, Rue Bodenbroek 2, 1000 Brussels

Context and Goal of the 4th Expert Workshop

The 'Skills for Smart Industrial Specialisation and Digital Transformation (SIS&DT)' project came to a stage of developing specific modules under the **Toolbox** to be used by individuals, companies, policy makers at all levels for the operationalisation of the '**EU 2030 Vision on High-tech skills for SIS&DT**'.

This fourth workshop aims to have an in-depth discussion around two key modules of the Toolbox that are linked to one another, namely '**Skills Strategy**' and '**Leadership and Governance**'.

For this reason, key participants representing different stakeholder groups at all levels (i.e. Supra-national, National, Regional, City, Cluster, Industry) have been invited to this workshop to have collective discussions on:

- Defining the '**Skills Strategy**' that is linked to all levels (i.e. individual, company, city, regional, national, EU)
- Defining the '**Leadership and Governance**' structure to be responsible for the implementation of the defined Skills Strategy at a given perimeter.

Key questions to be discussed during the workshop include:

Skills Strategy

- Can we incorporate 'High-tech Skills Strategy' as a **mandatory component under RIS3**?
- How can it be ensured to have link between the 'High-tech Skills Strategy' with other strategies such as RD&Innovation, Education, Industrial, Sustainable Development, Finance?
- How to **best leverage on Clusters** in developing and implementing the high-tech skills strategy, through Clusters?
- How to **best leverage on other EU/National Initiatives** on the implementation of the Skills Strategy such as: Digital Innovation Hubs (DIHs), European Technology Platforms, Joint Initiatives, cPPPs, EIT-Digital and Manufacturing Industry Digital Innovation Hub (MIDIH) under EIT-Digital, ICT Innovation for Manufacturing SMEs (I4MS) Initiative, KETs Excellence Centres and Associations as well as existing Corporate Academies?
- How to create a link between **EU Digital Agenda Toolbox and Skills for SIS&DT Toolbox**?
- How to link the High-tech Skills Strategy with **UN Sustainable Development Goals (SDGs)**?

Leadership and Governance

- How to establish and govern the "**Territorial Skill Council (TSC)**"?
- How to ensure coherence between **TSC and city, national and EU level authorities**?
- Which stakeholder groups should be given which kind of **roles and responsibilities at the Governance**?

Agenda

10:00 Introduction and Objectives of the Meeting

Welcome and opening of the workshop | André Richier, DG GROW
2030 outlook: Aligning technology developments with skills strategy | Laurent Probst, PwC

10:30 National level implementation and governance of skills strategy

“Building Effective National Skills Strategies” Initiative | Andrew Bell, Directorate for Education and Skills, OECD
Implementation of the framework at the National level in Portugal | Pedro Abrantes, Ministry of Education (Portugal)

→ *Discussion: EU skills strategy and OECD frameworks and its implementation at the national level*

11.45 COFFEE BREAK (15 mins)

12.00 Regional level implementation and governance of skills strategy for SIS&DT

Developing skills for smart specialisation, industrial transition and entrepreneurship | Marek Przeor & Isabel Poli, DG REGIO

How to mobilise relevant stakeholders in a pioneering programme: from social partners to business associations and public actors | Nico Binsfeld, Luxembourg Digital Skills Bridge Coordinator - ADEM

→ *Discussion: Involvement of all regional stakeholders in defining RIS3 including ‘Skills Strategy’ and multi-stakeholder governance model*

13.15 LUNCH BREAK (45 mins)

14.00 PPPs and Industry-lead initiatives in the making of SIS & DT

Role of Industry-lead Initiatives on Job-2-Job transitions under the skills strategy | Fredrik Sjögren, IBM
Cluster of Clusters: Silicon Europe Alliance on Micro&Nano Electronics | Frank Bösenberg, Silicon Europe

→ *Discussion: How to leverage on existing EU, National and Industry-lead Initiatives*

15.15 COFFEE BREAK (15 mins)

15.30 Role of Cities and Clusters on implementation and governance of skills strategy for SIS & DT

EU framework in support of Cities for the implementation of SIS&DT | Iordana Eleftheriadou, DG GROW
EU support for EU SMEs: Manufacturing Industry Digital Innovation Hub (MIDIH) under EIT-Digital (MIDIH) | Willem Jonker, EIT-Digital

→ *Discussion: Alignment of local strategies with the regional, national and EU strategies and implementation of ecosystems in support of SIS&DT at the local level*

16.45 Wrap-up

Final comments and remarks on how to develop and implement ‘High-tech Skills Strategy’ that will be aligned at all levels with the involvement of all relevant stakeholder groups and how it should be governed by the allocation of certain role and responsibilities to different stakeholder groups.

Minutes

Introduction and Objectives of the Meeting

Welcome and opening of the workshop | André Richier, DG GROW

- **André Richier** recalled the aim of the initiative and thanked all participants for joining the 4th Expert Workshop and PwC for their excellent work. He highlighted that the objective of the workshop was to help the European Commission strengthen the EU skills agenda and to develop an ambitious common vision to foster high-tech skills towards 2030 with concrete actions and solutions that will be included in an accompanying Toolbox. He highlighted the importance of T-shaped skills. The European Commission services have been actively working on a state-of-play analysis, prepared by PwC, assessing skills strategies related to smart industrial specialisation and digital transformation status in Europe as well as the uptake of high-tech skills across its Member States. An interim report will be disseminated early January 2019.

Setting the Scene for the EU 2030 Vision on High-Tech Skills

2030 outlook: Aligning technology developments with skills strategy | Laurent Probst, PwC

- **Laurent Probst** highlighted the increasing awareness surrounding the need for the development of skills strategies across the international community. Referring to the information collected at a Gartner event recently attended, the increasing maturity level of technologies such as blockchain and artificial intelligence pushes businesses to review the skills and competences of their employees. The importance of future skills has been further strengthened by a recent study of the UNDP, which observed that 'future skills' is a key topic of debate across the 20 countries assessed.

Laurent continued his presentation by explaining that one can observe two different trends when discussing digital transformation across the business world: digital optimisation vs. digital transformation. Nowadays, most companies are moving towards the entire digital transformation of their businesses resulting in the need for new skills. Interestingly, both employees and employers feel responsible to upskill/reskill and remain competitive. This shared responsibility highlights the need for skill strategies at all levels and for the EU 2030 High-tech T-shaped Skills Vision to produce bold and inspiring recommendations. The EU requires a world-class workforce that will enable its industries to retain their leading positions in the global market.

Laurent concluded by explaining that the modules open for discussion during the 4th Expert Workshop remain open to change and that participants should freely communicate any feedback or comments they might have. One point not mentioned in the background document disseminated in advance of the workshop but that will be further developed in the coming weeks regards the implication of gender to skills development as well as the increased implication of the 'three generations' concept.

Brief Introduction / Jan Sturesson, RESTING – Advise from the Future

- **Jan Sturesson** briefly addressed the agenda of the workshop and explained that he will be keeping track of the timing of the speakers. Jan encouraged the participants to actively share their ideas and comments and underlined that all the participants have come together to energise a new skills agenda for the EU that will inform the future development of Europe's workforce.

National level implementation and governance of skills strategy

“Building Effective National Skills Strategies” Initiative | Andrew Bell, OECD Centre for Skills

- **Andrew Bell** presented the OECD’s efforts to build effective national skills strategies. At present, the OECD has worked with 13 countries on 18 skills strategy projects. Based on their experience in the sector, the OECD identified the following success factors as crucial to the successful definition and implementation of national skills strategies:
 - *Adopting a skills centred approach*
 - The OECD includes a wide definition of skills that focuses on: (1) cognitive & metacognitive skills; (2) technical, professional, sector-specific skills; and (3) social & emotional skills. A skills centred analytical framework is crucial to ensure that countries not only develop the right skills, but also use those skills fully and effectively in the economy and society. People continuously develop new skills and use them regularly thus acquiring new skills in the process. To ensure success in both developing and using skills, effective governance is required. This includes strong collaboration across government, engagement with stakeholders, effective information systems, and aligned and coordinated financing.
 - *A shared sense of purpose*
 - A number of trends are reinforcing the importance of skills be it globalisation, technological change, demographical change, the migration of talent (garnering or losing talent) or climate change. These pressures have important implications for how governments perceive their roles and responsibilities as well as those of stakeholders. This results in a shift in paradigm. In the old paradigm governments focused on front-end loading skills development in primary, secondary and tertiary education and then on activating skills in the adult years by supporting individual’s entry onto the labour market. In the new paradigm, governments are increasingly interested in investing in the early years to ensure youth get a good start in leaning and develop the skills, attitudes and behaviours of lifelong learners, and then continuing to encourage and support learning in adulthood. In the new paradigm, governments are not only interested in activating skills but also in ensuring that firms use the skills of workers effectively.
 - *An understanding of the need for policy coordination*
 - Isolated sectoral policies often leading to underperforming efforts. National efforts need to be coordinated, aligned and sequenced to ensure the introduction of impactful policies. Policies need to be coherent and mutually reinforcing to allow for the successful implementation of national skill strategies.
 - *A whole of government approach*
 - A whole government approach needs to be adopted with various ministries working together and breaking traditional policy silos. In every project a minimum of three ministries need to work together. On average, most countries include five ministries to develop and exercise their national skills strategy.

- *Stakeholder engagement*
 - The collaboration effort should not be limited to the governmental level but should include all stakeholders. Stakeholder engagement is crucial for the development of comprehensive skills strategies and directly affects the implementation of skills policies. Sustained cross-sectoral dialogue helps to build understanding and shared commitment to act across the country.
- *A strong evidence base*
 - To develop evidence-based recommendations, available data needs to be used to assess the status of skills development and use in the country. Strengths and weaknesses of the existing system and workforce need to be assessed and areas of priority defined. The skills strategies developed need to be tailored to the specific needs of each country.
- *Leadership*
 - Leadership of the national skills strategy development and implementation is crucial. An inclusive national project team needs to be set-up to ensure the continuous progression of the strategy. A project champion at senior level (e.g. minister or higher) is important to secure high-level buy-in across all participating portfolios as well as support from the centre of government. An effective project coordinator needs to be selected and champions from outside the government included to build commitment to act jointly and help sustain momentum across electoral cycles. Finally, the skills strategy development and implementation process needs to be a transparent and as open as possible to ensure buy-in across the board.

Andrew concluded by highlighting the centrality of leadership to the successful development and implementation of a national skills strategy. In each government, someone needs to be willing to take the first step and lead the efforts to be made. This move is often associated with a certain risk on the political level and the motivation of the leadership selected thus needs to be high.

Comments:

- The OECD's methodology and programme could potentially be adapted to the EU-level.
- Poorer countries that invest heavily into the education of their people but then struggle with brain drain should be supported in creating an environment that encourages the retention of talent within the country of origin.
- Remaining mismatches between the talents developed through the existing educational system and the skills/knowledge expectations of employers need to be resolved.
- Employers should be encouraged to recruit a diverse talent pool. Preconceptions concerning the ability of the elder workforce to learn new skills and drive innovation should be refuted.
- Information on market developments, skills needs and trainings offered should be freely available and easy to access to encourage the development of a lifelong learning culture.
- The development of a skills strategy should be aligned with a higher purpose. The focus should be on society as a whole and not the individual.

Implementation of the framework at the National level in Portugal | Pedro Abrantes, Ministry of Education (Portugal)

- **Pedro Abrantes** provided the participants with a concrete example of the OECDs efforts in relation to the development of national skills strategies. Portugal adopted a two-phase approach including an initial diagnostic phase that resulted in the *OECD Skills Strategy Diagnostic Report* for Portugal in 2015 and an action phase, which led to the *OECD Skills Strategy Implementation Guidance* for Portugal in 2018. During the action phase, Portugal specifically focused on lifelong learning initiatives. The findings of both reports were presented at big national events, which gathered stakeholders and policy makers to discuss Portugal's skills strategy and its successful implementation. Besides, the second OECD Skills Summit was held, in Porto in June 2018, in order to discuss the national efforts in the skills agenda within more than 20 other countries. During his speech, Pedro highlighted the importance of including all stakeholders into the process. Collaboration between ministries and stakeholders is key to ensure the development of a comprehensive strategy and the definition of concrete implementation actions. To facilitate exchange and communication among all actors, big workshops were organised to bring all actors around a single table. Pedro explained that the government was pleasantly surprised by the engagement shown by trade unions and industry/businesses. Universities, on the other hand, were not so available and active in their participation as expected. The benefits of involving all stakeholders in the development of a national skills strategy are numerous and range from allowing a better diagnosis of the current skills situation, to facilitating the dissemination of feedback on policy proposals, raising awareness of the value of skills and the creation of partnerships. Pedro further explained that Portugal launched a number of concrete actionable programmes between 2014 and 2018, which resulted in the reduction of school dropouts in basic and early education and an increase in adult qualification programmes. Overall, Pedro concluded that he feels confident that Portugal is moving in the right direction and that the definition of clear targets will facilitate the continued development of its national skills strategy.

Comments:

- The development of a collective awareness surrounding the value of skills should be encouraged. The development of skills for individual wellbeing as well as for the collective good should be underlined.
- Regions should be encouraged to develop their own skills strategies in line with their specific needs. The sense of community that often exists at regional level facilitates the implementation of concrete measures decided.
- The traditional educational system, and especially higher education, need to be included in the design process of the skills vision and strategy at the city, regional, national and EU level. At the same time, the regulatory framework within which the universities act should be reviewed to provide them with greater flexibility and freedom to react to the changing demands of the labour market.
- The cost of a loss of knowledge and/or skills needs to be underlined. By focusing on the development of new skills, one should not disregard the importance of maintaining and advancing the existing knowledge/skills pool.

- SMEs need to be actively included in the development of the EU 2030 High-tech T-shaped Skills Vision to ensure the development of actionable and realistic recommendations.
- To encourage the active implementation of the recommendations developed in the EU 2030 High-tech T-shaped Skills Vision and the accompanying Toolbox, clear KPIs and markers should be defined to allow for the comparison of advancements made at all levels.
- The aim of the Vision should be to allow for the creation of a pervasive excellence of skills across the EU and not the development of pools of excellence that are geographically limited. On the other hand, the creation of 'knowledge pots' could be considered to encourage the development of a European pool of talent/excellence.
- In case of a lack of leadership, financial incentives should be considered to encourage universities, companies, regions to move into the right direction and to develop their own skills strategies.
- While a lot of attention will be paid to the leaders of this 'skills movement', followers should not be disregarded. The existing gap between leaders and a significant base of youth with great potential and enormous untapped learning potential needs to be eliminated.
- The introduction of chief skills officers across industries, sectors, regions, cities and/or nations might be considered to facilitate the implementation of the EU 2030 high-tech t-shaped skills vision.

Regional level implementation and governance of skills strategy for SIS&DT

Developing skills for smart specialisation, industrial transition and entrepreneurship | Marek Przeor & Isabel Poli, DG REGIO

- **Marek Przeor** confirmed that skills development is an extremely important topic for DG REGIO. For years they have been developing smart industrialisation strategies together with regions. DG REGIO's smart specialisation development strategy is place based, bottom-up, inclusive, focused and includes all forms of innovation. Every region has been encouraged to identify its specific areas of focus, valorising existing assets and local specificities. Investments and synergies across different departments and governance levels have been mobilised and collaborations between regions focusing on the same topic encouraged. Marek believes that we are moving from a period in which everyone was learning about smart specialisation to actively using smart specialisation. Of course, some regions develop faster than others meaning that some will continue the learning cycle while others will actively encourage and implement the use of smart specialisation. To support this development, DG REGIO has defined five policy objectives:
 - A smarter Europe (innovative & smart economic transformation);
 - A greener, low-carbon Europe (including energy transition, the circular economy, climate adaptation and risk management);
 - A more connected Europe (mobility and ICT connectivity)
 - A more social Europe (the European Pillar of Social Rights)
 - A Europe closer to citizens (sustainable development of urban, rural and coastal areas and local initiatives)

To achieve the listed objectives, Marek underlined the need to continue encouraging and supporting the technological as well as skill development of regions. According to him, a smarter Europe requires:

- The regional enhancement of R&I capacities and uptake of advanced technologies;
- Increased digitalisation for citizens, companies and government;
- The development of skills for smart specialisation;
- An increase in the competitiveness and growth of SMEs.

Marek criticized that the regional dimension of skills development is often disregarded. DE REGIO aims to support regions in developing the skills for smart specialisation they specifically require and which are necessary to support the continued development/growth of the region.

- **Isabel Poli** presented Sweden's efforts to become an innovation leader and highlighted the region of North-Middle Sweden Värmland as a case study for the implementation of regional skills smart specialisation strategies supported by skills development functions. Sweden has consistently been the EU leader in innovation and ranks high on international innovation scoreboards. At the same time, the share of employees with specialised ICT skills continues to fall and is now below the EU average. According to Isabel, the share of companies training their employees on ICT has decreased and SMEs find it increasingly difficult to recruit the skilled workers they need to ensure the further development and digitalization of their businesses. Despite the heavy investments made in both education and research, trends seem to suggest that the supply of skills/expertise as well as the international competitiveness of the Swedish R&D system as measured in outputs, is stagnating or falling slightly. In particular, the number of graduates in science and technology engineering and mathematics is relatively low: Sweden now ranks 20th among all EU countries when it comes to STEM graduates. Isabel further explained that the Swedish tech community signals difficulties in recruiting ICT-specialists and a need for people with skills in "deep tech", such as cloud computing and artificial intelligence. Overall, skills provision is what most companies indicate as a major barrier to growth. Isabel continued by presenting the case of North-Middle Sweden, a mostly middle-income region, which lags somewhat behind the rest of the country in terms of innovation. She explained that great regional disparities mark the country with poorer regions losing the brainpower they have invested in to bigger cities in Sweden and Europe. North-Middle Sweden is facing two skills challenges. On one hand a certain skills mismatch can be noted, which results from a lack of coordination between the skills required by businesses and the VETs offered. On the other hand, the available workforce is insufficient to meet the needs of local businesses. Manufacturing businesses are finding it difficult to find appropriately skilled people while existing workers are retiring. At the same time, the region is unable to retain its youth or attract new talent from abroad. To address this growing skills gap in the region, Isabel explained that the County of Värmland, one of three counties in North-Middle Sweden, has created the Värmland Academy of Smart Specialisation to oversee the implementation of Värmland's RIS3 and rework the region's skills strategy. Additionally, North-Middle Sweden joined DG REGIO's pilot on Industrial Transition, which assists the region in developing a plan of action for its industrial transition. Jobs and skills of the Future of course being an integral part of the pilot.

How to mobilise relevant stakeholders in a pioneering programme: from social partners to business associations and public actors | Nico Binsfeld, Luxembourg Digital Skills Bridge Coordinator – ADEM

- **Nico Binsfeld** presented the Luxembourg Digital Skills Bridge programme and gave the participants a short update on the progress made during the pilot. Nico started by underlining that while Luxembourg does not yet have a national skills policy, the government has launched a number of initiatives to support skills development across the country. He continued by explaining that businesses from all sectors and varying sizes joined the programme and introduced their initial candidature. From those 20 companies, 11 were selected to participate to the pilot due to the advancement of their digital strategy and their objectives being in line with the programme's philosophy. Nico recalled that the aim of the programme is to upskill the workforce while on the job and encourage as much as possible the internal mobility of employees. Of the 11 companies currently going through the upskilling process, 9 businesses will upskill their employees for internal mobility exclusively, demonstrating their need for skilled talent as well as the value of retaining the knowledge these employees already have of the business within the company. The participating employees will be upskilled for up to 6 months and benefit from the support of a personal advisor throughout the programme to ensure that they fully understand the philosophy of the programme and to encourage a shift in mind-set in line with the upskilling process. Nico then briefly went over the Skills Bridge process, from the company's general application, to the strategic workforce planning exercise, the employee's skills assessment as well as the mobility options offered. One of the crucial points to highlight during the process is the need for the staff delegation's support of the company's participation to the pilot. The support of the staff delegation is crucial to garnering the support of the employees to go through the upskilling process and to be open to change. To encourage the participating of businesses to the pilot, the government introduced strong financial incentives, including the co-funding of employees' trainings as well as covering up to 90% of their salaries while in training. Nico further highlighted the importance of a strong governance of the programme to ensure the successful implementation of the pilot and clear leadership of the programme. Multiple ministries are working in cooperation with business owners, trade unions and employer representations. Nico noted that, in general, the programme has been well received in Luxembourg and has garnered the support of industry as well as trade unions. It became clear throughout the pilot that significant differences in businesses preparedness for digital transformation could be observed and that many companies are unaware of the skills their employees currently possess making it impossible for them to assess their skill needs without the analytical tools offered by the programme. He concluded by addressing the next steps of the programme which include the launch of a second pilot phase, a shift from the unemployment agency to the agency for skills and competences, and an extension of cooperation with the Ministry of Education and Higher Learning to ensure the inclusion of academia into the process.

Comments:

- The concept 'curiosity of failure' should be added to the skills dimension. Curiosity and creativity have been shown to significantly influence the skills development of individuals. At the same time, ethical skills should be underlined as their continuous development is inevitable due to the effects of new technologies on everyday life. Individuals should be given the right skills and tools to 'learn to learn' and to continuously self-improve.

- The effect of skills policies on social disparities in Europe should be taken into consideration while designing the common EU skills vision.
- A shift in paradigm from 'smart specialisation' to 'brainpower' should be considered and the value chain concept refuted as skills development is not linear. Simultaneously, the traditional 'human resources' paradigm could evolve into the 'human reskilling' concept. The traditional HR department's tasks need to be changed and reviewed to fit the 'skills of the future' paradigm.
- When discussing AI, one needs to be careful not to address the bottleneck lack of employees in AI with badly skilled talent, which will be unable to note the ways in which the AI system fails and solve them.

PPPs and Industry-lead initiatives in the making of SIS & DT

Role of Industry-lead Initiatives on Job-2-Job transitions under the skills strategy | Fredrik Sjögren, IBM

- **Fredrik Sjögren** presented IBM's skills strategy and supporting AI-fuelled tools, as well as the company's Job-2-Job transitions programme. IBM has a long history of reinventing itself due to technological developments but also due to fierce competition in the sector. In more recent times, IBM moved from making PCs and laptops to offering cognitive solutions and cloud platforms. As Fredrik explained, half of the company's revenue today comes from sectors they were not active in five years ago. Change has thus defined IBM and transformed its skills management and development strategy. To remain competitive, IBM realised that it needed to invest in the skills and talent of its workforce. The company thus decided to train all employees no matter their skill level and adopted the same data driven approach to skills investment as to their business decisions. In practice, this means that every employee has to complete a minimum of 40hrs of training a year (with a current average of 59hrs of training per employee). This investment in the skills of its employees cost IBM around \$425m annually and is believed to have improved employee engagement and hence business results. Fredrik further underlined that IBM believes that the skills required for all jobs will necessarily change as technological developments influence the way we work. This continuous change requires a high level of adaptability from employees and demands the spread of a culture of continuous learning within businesses. At IBM this change is being advanced by a technology driven strategy. To drive improvement of employee skills, the AI-powered YourLearning platform was created which provides every employee with an individually tailored training plan with learning recommendations based on structured and unstructured data. The system learns and adapts to changing technical and business needs, and is supported by a digital badge credentialing system. IBM's skills strategy allows the company to monitor the shortage and surplus of skills, to quantify the time required to better inform reskilling plans, and to make better-informed decisions concerning employees' trainings. Increasingly employees will move to new jobs within IBM or outside the company due to changing market developments and investment priorities. The potential for business restructuring cannot be eliminated. As Fredrik explained, the Job-2-Job programme aims to facilitate employees' navigation of these changing times. IBM continuously informs its employees about market changes, hot jobs and skill needs, thus increasing the level of transparency throughout the company and allowing employees to take charge of their skills development. Fredrik continued by explaining that the Job-2-Job programme has been introduced in six countries and offers employees 3 solutions: (1) redeployment within IBM with appropriate re/up-skill actions (2) placement in the IBM ecosystem (3) placement into external solutions with new forms of support and assistance. To date, over 2000 employees have passed through the supporting mechanisms introduced. Fredrik highlighted the profound cultural change this programme required

from the employees, their staff delegations but also management level. He believes that skills strategies are crucial for the success of businesses and represent a tremendous opportunity for all stakeholders.

Comment:

- The IBM methodology and system could potentially be adapted to the needs of the EU with regards to the development of a skills strategy at the city, regional, national and EU level. An important point to address would be how the Commission could support companies upskilling/reskilling their employees for external positions as this represents a loss of investment for said businesses.

Cluster of Clusters: Silicon Europe Alliance on Micro&Nano Electronics | Frank Bösenberg, Silicon Europe

- **Frank Bösenberg** presented the Silicon Europe Alliance, which regroups 12 clusters with in total 2500 innovative members. The Silicon Europe Alliance aims to foster cooperation and innovation across all of Europe by helping its members accelerate their R&D and business connections due to cross-fertilization across ecosystems. As Frank noted, each cluster has detailed knowledge of the needs of their member companies with special attention being paid to the needs of SMEs. The activities of each cluster are regionally oriented meaning interactions on the national level vary on a case-by-case basis. The aim of the Silicon Europe Alliance is to help SMEs grow and survive. Frank pointed out that it is important to understand that some SMEs might want to grow while others might not. Some SMEs simply want to ensure that the future of their employees remains secured. They prefer maintaining the same number of employees and decreasing the risk of having to licence any employees to growing exponentially. Frank continued his presentation by explaining that to meet the needs of SMEs, clusters need to think like SMEs (e.g. how can I immediately solve a problem and whom can I cooperate with on this issue). Furthermore, not all clusters are publicly financed. Private members, for example, finance the Saxony Cluster. To present some concrete examples of how clusters can become involved in skills development, Frank presented the following case studies:
 - o GAIA – which trains the unemployed to give them the skills that match the needs of SMEs currently looking for new talent.
 - o Grenoble’s and Dresden’s joint VET initiative which shows the value of fostering collaboration across cities and sectors.
 - o The organisation of interactive science exhibitions and science labs in Dresden, which aims to teach students what it means to work with technology and intents to awaken their interest for STEM.
 - o The INNOSUP project IoT4Industry, which connects SMEs with those that need the products/services they offer.

To conclude Frank underlined that he believes that clusters can play a pivotal role in reaching SMEs. He also highlighted that skills-related activities remain widely uncommercial at present leading to an increasing demand for PPPs. Lastly, he thinks that RTOs and Universities should be included in the debate as key stakeholders.

Comments:

- The use of human centric AI tools should be encouraged yet the human/individual should not be underestimated. Trust is crucial to the successful implementation of any skills strategy.
- Clusters should be well integrated into the skills strategy development and implementation. A sufficient number of clusters exists yet their implication into the EU 2030 High-tech T-shaped Skills Vision could be intensified.

Role of Cities and Clusters on implementation and governance of skills strategy for SIS & DT

EU support for EU SMEs: Manufacturing Industry Digital Innovation Hub (MIDIH) under EIT-Digital (MIDIH) | Willem Jonker, EIT-Digital

- **Willem Jonker** presented EIT Digital's efforts in the skills development area and the support they offer SMEs. According to Willem, SMEs often struggle adapting to the digital transformation marking their industry and find it difficult to onboard the right talent to face this change. While EIT Digital addresses a number of societal challenges, Willem focused on the innovation and entrepreneurship dimension of the services offered as these are his areas of expertise. The innovation environment includes a comprehensive ecosystem of which EIT Digital addresses the following areas: digital industry, digital wellbeing, digital finance, digital cities and digital infrastructure. To ensure the continued development of an ecosystem, all stakeholders need to be engaged and participate to ensure its proper functioning. At the same time, Willem identified the support of ventures as crucial to the continued development of European SMEs. To date, the EU's digital industry is unfortunately growing slower than the US digital industry. Further efforts are thus necessary to catch-up on the global market. EIT Digital's accelerator, for example, has facilitated over €90m in investments since 2012, supporting over 260 scale-ups. At the same time, EIT Digital also offers entrepreneurial education hand in hand with the investments made. Willem underlined the inclusion of t-shaped skills across the trainings offered and the blended education system adopted. MIDIH's now are innovation hubs that allow different stakeholders to come together and allow SMEs to run pilots on the hub's platforms and to learn by doing. Willem argued that Europe needs to move away from developing technologies that then get used by American or Chinese companies to dominate the market. The EU needs to build a strong digital industry to ensure the retention of knowledge within the EU thus securing the industry's competitiveness. Currently we are fighting for the platforms/data used in cars to which Willem added that the money lies within the data spaces and not in its production. To conclude Willem highlighted the following messages:
 - o Europe needs to build global European businesses to introduce European values to the digital world.
 - o The fragmentation of the European market needs to be further reduced and digital enterprises and entrepreneurs supported.
 - o Europe needs to significantly increase its investments for R&D in digital technologies to compete with the US and China.
 - o Investments into deep tech innovation need to be increased as European research does not systematically result in innovation.
 - o The European education system needs to be adapted to the digital reality. Digital skills gaps need to be reduced.

Comment:

- The use and commercialisation of data is expected to represent an important market opportunity for Europe. The talent necessary to develop the sector needs to be secured as early as possible. At the same time, investments in AI should be increased to ensure its public use and property.

EU framework in support of Cities for the implementation of SIS&DT | Iordana Eleftheriadou, DG GROW

- **Dana Eleftheriadou** presented the Commission's Digital Cities Challenge, which aims to encourage cities to drive their own digital transformation ecosystems, mobilising all city actors and facilitating bottom-up urban development. According to Dana, the current skills dilemma remains that companies do not find the skilled people they expect to come out of the academic and training system. Some cities have decided to face this challenge hands-on as Dana demonstrated through the following examples:
 - **Bad Godesberg** is a relatively small wealthy city whose mayor found out that the students coming out of high school had no digital skills, meaning that they would drown in the labor market. To tackle this issue, the city mayor set up a start-up (BG 3000) to provide 3 to 4 day training camps to high-school students. The success of the programme led to the country-wide introduction of SMART CAMPS which have trained more than 16000 students to date.
 - In **Paris**, a private initiative called 'école 42' disrupted the traditional educational system. The school requires no diplomas for students to enter, there are no teachers, no lectures and no fees. The school adopted a project-based learning philosophy based on peer teaching, based on real problems solving and good links with the industry, in an engaging and voluntary environment. Most of the schools graduates directly enter a job after completing the programme.
 - **Pori** is a small city whose industry declined. The mayor decided to revive the city by encouraging local businesses to specialize in automation, robotics and AI. The ROBOCOAST cluster was created with 100 SMEs in the field and to create the sufficient mass to attract talents as well big corporations to the city.
 - **Thessaloniki** is the second largest city in Greece and houses four excellent universities. Unfortunately, the city has been the victim of huge brain drain during the economic recession. To attract talent to the city again, the mayor decided to invest in the start-up ecosystem to create jobs for the talent leaving the universities. The city thus founded iGrowLabs and startup training programmes to encourage the development of new employment opportunities for the graduates leaving academia.
 - **Nice** has shifted from a service-based economy relying on tourism to a diversified digital hub, thus attracting and maintaining ICT talent in the area. The entire city's infrastructure collects and shares real-time open data that is then communicated to local businesses to be used in a meaningful way. Together with the government the city also developed a job protection plan in order to retain laid off employees in case some big corporations would decide to leave the region or change their businesses.

- **Derry – Londonderry** developed a fast track course to train students for the IT industry.

Dana concluded her presentation by highlighting that increasingly cities take over more responsibility and the role to upskill their territories, in an autonomous way. The skills gap has to be reduced as soon as possible and immediate action is required.

Comment:

- The cases presented might serve as inspiration and can be scaled-up depending on the needs of the city, region or nation.

Collection of ideas for the final conference in June 2019:

- The EU 2030 Skills Vision should not become fragmented and stakeholders should be encouraged to share data, know-how and knowledge to collectively secure the future of Europe’s workforce.
- The tone of the conference should remain sufficiently alarming to underline the urgency and importance of the policies developed. The stakeholders invited need to be aware that their support is crucial to strengthening Europe’s position as a centre of excellence for skills and knowledge.
- All three generations need to be present (especially Generation Z) to ensure the comprehensiveness and inclusiveness of the Vision and its implementation.
- Stakeholders should be encouraged to announce concrete commitments and actions to launch the implementation of the Vision. Clear benchmarks and indicators need to be defined to follow the progress made on each level and thus encourage all stakeholders to actively participate.
- Successful initiatives should be scaled-up and highlighted to minimise the efforts required to reinvent existing solutions.

Wrap-up

Final Remarks

- **André** thanked all participants for their active participation to the 4th Expert Workshop and the helpful comments/contributions made. The workshops to follow will serve the continued definition of the toolbox and the development of the precise recommendations to be presented at the final conference.