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**NOTE**

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From: Trio Presidency  
To: Working Party on Competitiveness and Growth (High Level)  
Subject: Discussion paper: Skills for EU supply chains' resilience

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Delegations will find in Annex a Trio Presidency discussion paper on Skills for EU supply chains' resilience, in view of the meeting of the Working Party on Competitiveness and Growth (High Level) on 19 May 2022.

**SKILLS FOR EU SUPPLY CHAINS' RESILIENCE****I. Background**

At the Informal meeting held in Versailles on 11 March 2022, the EU Heads of State or Government declared their intention to take more responsibility for our security and take further decisive steps towards building our European sovereignty and reducing our dependencies<sup>1</sup>. Among the three key dimensions addressed (namely bolstering our defence capabilities; reducing our energy dependencies and building a more robust economic base), the one of “building a more robust economic base” aims at building on the strengths of the Single Market, make Europe’s economic base more resilient, competitive, and fit for the green and digital transitions, while leaving no one behind. This means reducing our strategic dependencies across EU industrial ecosystems, particularly in the following sensitive areas:

- Critical raw materials
- Semi-conductors
- Health
- Digital
- Food

The right skills are crucial for the growth and sustainable development of businesses of all sizes and to address strategic dependencies. Companies need skilled people and talents to achieve green and digital transitions. Yet, Europe is not ready. Over 50 million adults have completed only lower secondary education. Many working-age adults have skills (including digital skills) that are no longer fit for purpose in the workplace of the 21st Century.<sup>2</sup>

Moreover, over 70 % of enterprises in Europe report that a lack of skills hampers their investment and one in four SMEs across EU report major difficulties in finding skilled staff. Only 15% of business leaders communicate about upskilling initiatives. This lack of attention to upskilling leads to a disparity between workers and jobs.

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<sup>1</sup> [Versailles Declaration](#)

<sup>2</sup> Using the Digital Competence Framework, 29% of all individuals in the EU in 2019 were identified as having low overall digital skills (Eurostat).

Technological progress has raised exponentially the need for digital skills and competences at all levels across the economy. For most jobs digital skills are essential and without their firm command it is not possible to boost innovation and competitiveness in the economy. The lack of ICT specialists is challenging. 55 % of companies in the EU looking for ICT specialists in 2020 reported hard-to-fill vacancies. Gains from investment in common EU digital infrastructure can only materialise if there are enough people to develop, deploy and use these tools. The Digital Compass sets specific targets to encourage Member States' actions. The EU aims to equip at least 80% of adults with at least basic digital skills and increase the number of ICT specialists to 20 million (around 10% of total employment) with convergence between men and women by 2030.

Following President von der Leyen's SOTEU address and answering to the call from EU Leaders in the October 2021 European Council conclusions, the Commission established a structured dialogue on digital education and skills. The aim of the dialogue is to increase the political visibility and commitments on digital education and skills, so that Europe can deliver on the 2030 targets in this area. The dialogue also aims to bring together the different strands of policy into a strong integrated, coherent and more ambitious approach and make the most of the synergies between the different policy fields – education, digitalization, labour, finances. Against this background, disruptions of production related to public health restrictions and lockdowns had a negative effect on the development of skills amongst the workforce. Skills gaps and mismatches take more time to recover than shortages of materials. Together with the faster pace of change, this leads to skills shortages in turn becoming a strong driver of supply shortages, thus impeding the capacity of industry to restore the pre-crisis levels of production and to move forward in the green and digital transitions.

The 2020 European Industrial Strategy<sup>3</sup> introduced the ecosystem approach<sup>4</sup> to the resilience and competitiveness of the EU economy, which became the framework for in-depth analysis of the capacities, risks and vulnerabilities of EU supply chains.

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<sup>3</sup> COM(2020) 102 final

<sup>4</sup> The 14 ecosystems encompass all players operating in a value chain from the smallest start-ups to the largest companies, from academia to research, service providers to suppliers.

Supply chain resilience can be related to inputs such as raw materials or components, know-how, IPR, but also very often skills and expertise. The latter may require considerable time and investment to overcome. In its analysis of strategic dependencies and capacities<sup>5</sup> of each ecosystem, the Commission identified measures to address strategic external trade dependencies, such as developing the skills of the EU workforce in identified areas of strategic importance, including mapping-out the skills needed for the twin transition, and supporting workers in acquiring them. Such efforts would help regain skills that might have been transferred to parts of the value chain located outside the EU, or learn new ones that emerge as the economy transforms. Developing skills can increase EU workers' productivity, ensuring that an increased EU production in certain areas is at the same time also economically efficient. Skills are also considered crucial to the development and uptake of new technologies, to address existing or potential future strategic dependencies. For example, in a number of strategic areas – such as raw materials<sup>6</sup> and batteries<sup>7</sup> – the need to develop available skills in the EU have already been identified as a key element in addressing dependencies, building EU capacities and increasing resilience. In particular for SMEs, a skilled workforce is key for participating in global value chains.

The Industrial Forum<sup>8</sup>, set up by the Industrial Strategy, includes a Task Force on Strategic Dependencies, which supports the Commission in the identification and analysis of strategic dependencies. This Task Force also looks into how these dependencies can be addressed through coordinated European actions.

This note illustrates how skills play a key role in addressing strategic dependencies and what are the current EU initiatives that help the industrial ecosystems to boost the skills dimension in favour of the resilience, green and digital transitions of the EU economy. The purpose of this paper is to start a discussion between Member States on the way forward in addressing the skills gaps and mismatches which could hinder the resilience of EU supply chains.

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<sup>5</sup> SWD(2021) 352 final

<sup>6</sup> See COM(2020) 474 (action 6)

<sup>7</sup> For example, the “ALBATTTS” initiative aims to establish a framework for the long-term identification of skills gaps in the area of batteries, emerging skill needs and a strategy to meet them

<sup>8</sup> [Industrial Forum \(europa.eu\)](https://europa.eu/industrialforum/)

## **II. Addressing supply chains' vulnerabilities related to skills: state of play**

To support a fair and resilient recovery and deliver on the ambitions of the green and digital transitions, the Commission launched on 10 November 2020 the [EU Pact for Skills Initiative](#), mobilising public and private organisations to join forces and take concrete action to upskill and reskill the workforce in Europe tailored to the needs of each industrial ecosystem.

All members of the Pact sign up to the Charter and its key principles listed below:

- Promoting a culture of lifelong learning for all
- Building strong skills partnerships
- Monitoring skills supply/demand and anticipating skills needs
- Working against discrimination and for gender equality and equal opportunities

Signatories of the Pact translate their engagement into concrete commitments on upskilling and reskilling in the form of large-scale partnerships. They address the specific skills gaps and needs for each ecosystem by pulling together resources and key players, such as companies, workers, national, regional and local authorities, social partners, cross-industry and sectoral organisations, education and training providers, chambers of commerce and employment services. Ten partnerships (with an 11<sup>th</sup> one foreseen on 6 May) in nine of the 14 industrial ecosystems have already been launched and some of them are of particular relevance for the above-mentioned sensitive areas identified to address our strategic dependencies. Skills are also in the focus of the transition pathways for those ecosystems.

### **1. Skills Partnerships**

Hereafter is a presentation of the main existing partnerships linked to food, semi-conductors, construction and aerospace/defence, as they are particularly relevant for strategic dependencies, notably in the areas identified by the Versailles Declaration.

## Agri-food<sup>9</sup>

The agri-food ecosystem is facing acute challenges such as globalization and climate change, urbanisation, changing consumer demands, generational renewal and strong competition from third countries, not to mention the impact of the Covid-19 pandemic or the war in Ukraine. Some of these challenges represent opportunities for the ecosystem, such as digitalisation or the transition towards a greener, resilient and higher sustainability-based economy. The partnership aims to set a joint strategy to design and implement a sectoral upskilling and reskilling framework, maximising competitiveness of all the actors involved, enhancing job retention and job attractiveness of the agri-food ecosystem within the frame of the Pact for Skills. To reach this target, the partners jointly commit to:

- Establish a skills partnership for the agri-food ecosystem;
- Establish a culture of life-long learning for all and intensify their efforts to provide opportunities for up- and reskilling;
- Expand European and international scientific cooperation in education and training (double degrees, joint qualifications, EU and national projects);
- Collect data on occupational profiles and related skills changes and needs per sub-sector to obtain quantitative KPIs to further monitor the evolution of the partnership commitments;
- Support European and international mobility aids for students, vocational learners, workers and entrepreneurs;
- Develop partnerships between education and training organisations and innovation actors as well as businesses;
- Update information about the agri-food ecosystem and monitor its development with data on necessary skills and with guidance to education and training suppliers, particularly considering occupational profiles and sub-sector needs;

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<sup>9</sup> [Proposal - The Pact for Skills - Agri-food.pdf](#)

- Set up an EU-wide framework for skills and occupational profiles, building on relevant project outcomes (such as the FIELDS project); and share experience, best practices, and policy recommendations;
- Provide financial or non-financial contributions (depending on the nature of the entities) to the trainings realised under the framework aforementioned, connected to the established support schemes for individual projects in the respective regions or Member States.

The Partnership has already started its meetings. It will design KPIs and will have an operational roadmap by the end of June 2022.

### Microelectronics in the Electronics ecosystem<sup>10</sup>

Electronic components and systems enable Europe’s digital transformation; accelerate its green transition and underpin its technological sovereignty. Against this backdrop, Europe is facing an acute skills challenge in electronics. The number of open positions for engineers and technicians is growing at an alarming rate. The blistering pace of technology calls for rapidly evolving skills in R&D, design, manufacturing, specific applications, AI ethics, cybersecurity and energy-efficiency. The involvement of women in electronics education and employment is low. The ambition of this partnership is to build the most powerful, cutting edge and sustainable microprocessors and advance Europe’s leadership in key areas – quantum computing, Edge AI, 5G, connected, autonomous and electric mobility, smart energy and Industry 4.0 to name a few. Continuous investment in skills and ensuring that Europe has the right talent, both qualitatively and quantitatively, is a prerequisite to realize the ambition. It is estimated that an investment of €400m annually will be needed under the Pact. Representing a new wave of €2billion investment from the public and private sides for the 2021-25 period in total, the proposal will significantly contribute to the current and future workforce in Europe. The activities foreseen under the Pact will reach out to at least 50,000 workers and students each year on average and provide new re/upskilling opportunities in the field of electronic components and systems for more than 250,000 people in five years. The Skills Partnership for Microelectronics counts more than 50 members, from manufacturers to researchers to social partners<sup>11</sup>.

<sup>10</sup> [Microelectronics \(6\).pdf](#)

<sup>11</sup> See examples of concrete commitments here:  
<https://ec.europa.eu/social/main.jsp?catId=1534&langId=en>

## Aerospace and Defence<sup>12</sup>

As mentioned above, one of the dimensions of the Versailles Declaration is bolstering our defence capabilities. The related ecosystem highlighted in its high level Roundtable on skills<sup>13</sup> held in 2020 that the ecosystem faces a series of common challenges and a clear need for upskilling and reskilling to help it undergo the twin green and digital transformation and respond to the impact of the Covid-19 crisis. As a result of this discussion, top leaders of European Aerospace & Defence Industry have confirmed their full engagement to the European Pact for Skills plan to collectively address our unprecedented challenges: COVID crisis; climate neutrality; competitive environment (Fast digitalization, Industry 4.0); demographics (aging staff); low attractiveness to young talents and to women. The ambition of the partnership is to collectively ensure a continuous and sustainable supply of skills with equality and diversity for around 600,000 employees in major actors and their whole supply chain to reach the ecosystem's sustainable growth. The proposal is to develop and run concrete solutions on three main axes:

- The Skills Forecasting with the objective to anticipate all main skills gaps we will need to address on time collectively, considering Industry Skills needs and EU demographic skills forecasts for next five to ten years.
- The Up-Skilling/Re-skilling Programmes set-up with the objective to develop and implement solutions allowing to up-skill and re-skill around 200,000 employees (30% of the current workforce) in the EU during the next 5 years (by 2026) in emerging & transforming jobs.
- The Talents Development and Engagement to elaborate partnerships programmes to boost attraction, development and retention of talents, considering we will need 300,000 people in the next ten years (by 2030) to join the industry.

Some ongoing examples of Partnership actions are the Assets+ project focusing on training and related activities on emerging technologies (AI, robotics, unmanned systems, C4ISTAR and cybersecurity), led by the University of Pisa<sup>14</sup>.

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<sup>12</sup> [ASD \(3\).pdf](#)

<sup>13</sup> [Report ADS for the webpage.pdf](#)

<sup>14</sup> [Assets+ project](#)



The Commission aims to have at least one skills partnership in each ecosystem in place by the second anniversary of the Pact for Skills on 10 November 2022. Work is ongoing on the other two ecosystems that are identified as strategic areas in the Versailles Declaration, notably in the areas of health and digital.

### Construction<sup>15</sup>

The construction ecosystem is the second most important of the 14 identified ecosystems, regarding employment and value added, and it relies, as much as the others, on well-trained people. New technologies and climate goals mean that workers have to learn and acquire new skills or update them. While the construction ecosystem remains very labour intensive, its talent pool is shrinking due to an ageing workforce and reluctance of youth to consider a career in construction. Addressing the current skills gap and anticipating future skills needs in the construction ecosystem means providing more, better and safer jobs. Professionals need to be equipped with adequate building skills, digital and green competences for the ecosystem to contribute to achieving the 2050 EU climate targets. The Commission is in the process of co-creating transition pathways for the construction ecosystem to support the sector in its green and digital transitions, while increasing its resilience. The transition process is supported by additional Commission-initiated activities like the Pact for skills construction partnership launched on 8 February 2022. The partnership will help ensure that the construction sector keeps up with the green and digital transition and achieves the objectives set out in the EU Renovation Wave. Although the situation varies significantly from one country to the other, the ambition is to upskill and reskill overall at least 25% of the workforce of the construction industry in the next 5 years, to reach the target of 3 million workers. The training provided differs from country to country and it can comprise short-time and long-time courses. Taking into account their structure and role, whether at European, national, regional and/or local level, the signatories will choose amongst different sets of specific commitments those which are the most appropriate to match their own needs in terms of upskilling and reskilling. Additionally, the Blueprint for Sectoral Cooperation on Skills initiative addresses short and medium-term skills needs, with digital skills emerging as a transversal element.

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<sup>15</sup> [2022-02-08 - Pact for Skills in Construction - FINAL.pdf](#)

## 2. Transition Pathways

The Commission's May 2021 Industrial Strategy Update<sup>16</sup> calls for the co-creation of transition pathways for the EU's 14 industrial ecosystems.<sup>17</sup> A transition pathway is an actionable plan for all stakeholders of a given industrial ecosystem to follow to successfully achieve the green (environmental and climate) and digital transition, eventually leading to economic, environmental and social sustainability. Transition pathways also analyse whether any critical dependencies exist within that ecosystem which industry actors and policy-makers may want to address in order to improve the ecosystem's resilience. Many ecosystems are also linked along value chains, especially between energy-intensive industries and the 'end use' ecosystems of mobility, construction, electronics, digital and renewables. This means that vulnerabilities in one ecosystem may have knock on effects on other ecosystems.

Furthermore, although delivering the European Green Deal policy package is estimated to have an overall positive impact on employment at EU macroeconomic level (up to 1 million additional jobs by 2030 in the EU, and 2 million jobs by 2050), from a distributional perspective, effects on jobs and skills may vary across countries and sectors. For instance, job growth would be concentrated in green sectors, both in industry and services, notably construction, manufacturing of clean tech equipment, renewable energy production, sustainable transport, waste management and sustainable finance, and would notably include middle-skilled, middle-paying jobs, thereby mitigating further job polarisation stemming from automation and digitalisation. However, fossil fuel extraction and mining industries are projected to decline, which will mostly affect the few regions with a high proportion of employment in these sectors (e.g. parts of Poland and Romania), whereas energy intensive industries and automotive manufacturing would see significant transformations. As such, the transition to a climate-neutral economy requires significant labour reallocation and related changes in future skill requirements. People will not only need specific professional skills but also science, technology, engineering, mathematics (STEM) skills and soft and other transferable skills.

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<sup>16</sup> COM(2021) 350 final

<sup>17</sup> COM 2019 640 final

The European workforce will need to build capacity and develop new green and digital skills needed to address the challenges of a more digitalized economy and based on new low-carbon technologies. This is even more evident now that the COVID-19 pandemic has revealed the limitations of our digital preparedness. Therefore, strong emphasis will be needed on upskilling, reskilling and education in the implementation of the transition pathways. The transition pathways identify which unmet skill-related needs exist in the workforce at all levels of the ecosystem to realize the twin transition and strengthen resilience, both in the short and in the middle term, and they propose actions to address those unmet needs.

As part of an effort to make transition pathways more easily implementable and consistent across industrial ecosystems, the Industrial Forum delivered and endorsed a common Blueprint with seven horizontal building blocks, including on skills. As a result, precisely because the different industrial ecosystems will base themselves on this blueprint as a template for the drafting of their transition pathways, we can expect the latter to clearly identify which unmet skill-related needs exist in the workforce at all levels of the ecosystem to realize the twin transition and strengthen resilience, both in the short and in the medium term.

Moreover, the Blueprint makes it clear that transition pathways should propose actions to address those unmet needs. These actions can include rank-related training programmes, learning platforms and mobile applications, life-long learning schemes, introduction of specific courses in relevant educational institutions, job-to-job transition schemes, etc. These actions are to be implemented by all stakeholders in the ecosystems in close coordination with the relevant Pact for Skills. In fact, the EU Pact for Skills for each ecosystem will be a crucial component of its corresponding transition pathway, particularly for the implementation phase, given that it will be a key tool to mobilise and incentivise all relevant stakeholders to make concrete commitments for upskilling and reskilling, and, when relevant, pool efforts in the context of partnerships. Among the stakeholders, Member State governments need to take action in skilling, reskilling and workforce-policy that is tailor-made for the ecosystems most relevant to their national economy. In addition, border regions will be able to identify how skills developed within one ecosystem can cross-fertilise into another and thereby engaging in strategic workforce exchanges.

In their Recovery and Resilience Plans (RRP), Member States identified upskilling and reskilling as a priority. RRP include measures on skills and adult learning, often linked with active labour market policies. Several RRP include incentives for companies for upskilling/reskilling (eg. leave subsidies) as well as measures on individual training entitlements (eg. individual learning accounts or vouchers). All approved RRP invest in digital skills and cover basic and advanced skills acquisition, as well as infrastructure. A number of RRP mention measures related (also) to green skills.

### **3. Boosting the development of advanced digital skills related to key technologies through the DIGITAL programme**

To boost the development of advanced digital skills related to key technologies, the DIGITAL programme devotes almost EUR 600 million over 7 years. It will support the design and development of innovative education and training programmes in key areas, such as microelectronics, cybersecurity and AI. These programmes and courses will be designed by universities, VET providers or training institutions together with businesses and research centres, to respond to the needs of the labour market. Dedicated actions will support the development of short-term training courses to upskill and reskill the workforce with digital skills.

#### **Possible questions for discussion**

- What is being done at Member State level today that could be scaled up at EU level, including within the ecosystems highlighted in this paper?
- What intra-industrial initiatives could be developed and disseminated – either from company to company or through EU initiatives? How do we ensure that the centres of excellence established in various initiatives at EU level are effective?