



Key Aspects of the EU 2030 High-Tech T-shaped Skills Vision for Smart Industrial Specialisation and Digital Transformation

The Goal

Our goal is to collectively design the **European 2030 Vision for High-Tech T-shaped Skills** by leveraging on the success stories. Such 2030 common vision aims to define the high level framework in designing and implementing relevant up/re-skilling strategies, policies and initiatives at all levels (i.e. cluster, city, regional, national) in order to boost **Smart Industrial Specialisation (SIS)** and **Digital Transformation (DT)** across the EU.

Key Enabling Technologies (KET) will be placed in the centre of this vision on designing high-tech skills development strategies, since the importance of KETs (i.e. Advanced manufacturing technologies, Advanced materials, Life Sciences technologies, Micro and Nanoelectronics, Nanotechnology, Photonics, Artificial Intelligence, Cybersecurity) in advancing on SIS&DT has been well recognised. This goal is in line with the new **Digital Europe Programme** being proposed by the Commission under the **European Multiannual Financial Framework for 2021-2027¹**, and its five focus areas:



Key features of the Common Vision

We suggest to structure the common vision around the following key characteristics:

- **Anticipatory:** Forward looking based on foresights on emerging technologies and corresponding skill needs;
- **World class excellence:** Provision of specific support measures to already well-performing Cities and Regions to make them EU & Global Champions;
- **Inclusive:** provision of basic and advanced digital skills for a majority of EU citizens
- **Realistic:** leveraging on already tested solutions and success stories;
- **Feasible:** in terms of funding, timing (i.e. short, medium and long term actions), incentives etc.;
- **Participatory:** Consensus driven between all players of public & private and collective actions to be taken across all stages including design, implementation and monitoring;
- **Inspiring:** to be taken by citizens, industry, education and training providers to reach to world-class excellence and championship;
- **Socially and culturally responsive:** for being able to tackle societal challenges.

¹ https://ec.europa.eu/commission/sites/beta-political/files/budget-june2018-digital-transformation_en.pdf.

Conclusions from the First Expert Workshop on 24 April 2018

In preparation of the first expert workshop, two State of Play analyses highlighted multiple strategies, policies and initiatives and the concept of “T-Shaped-Skills”, which all together aim to tackle the rising social, economic and educational challenges. During the workshop, these insights were re-formulated and validated under the thorough scrutiny of 25 Experts and key insights from public and private institutions. This resulted in a range of principles as foundation for a common EU Vision on Smart Industrial Specialisation and Digital Transformation to drive the EU world leadership for the industrial acquisition for the development of global high tech skills. These principles shall guide the common EU vision.

Key Trends

- **Digital transformation** is not the end goal but a meaning and paradigm shift that happens at 3 layers:
 1. Culture and organisation;
 2. People and skills;
 3. Technology and infrastructure.
- **Data-driven decision making** and **customer centricity**;
- **Transition in employment patterns** from life-long employee at one company towards working at multiple companies and projects at a time;
- **Collaborative work across disciplines** being the new norm.

Key Challenges

- Continuous up/re-skilling of the workforce for **different segments of the population**:
 1. Already employed professionals to stay up-to-date with the technology;
 2. Unemployed youth people to get a job;
 3. Workforce older than 50 years; etc.
- Provision of **personalised education & training** at large scale;
- **Lack of transversal skills** under the current education curricula (i.e. Collaborative skills, Digital Literacy, Cognitive Skills, Learn to Learn, Problem solving, Critical Thinking, Design Thinking, Emotional Intelligence, Empathy, Business Thinking, Communication Skills (e.g. Pitching and Selling ideas), and Ethics as a cross cutting skill across all disciplines);
- **Lack of certification schemes** for the trainings being provided;
- Major **disparities between Member States**.

Key Needs

- **Digital Transformation** in parallel to the **Cultural Transformation**;
- Transformation of Universities towards **University 4.0** using novel teaching tools and methods (i.e. Flipped Classroom Concept, Peer Learning Concept, User Experience Laboratory) based on **open science models** to support industrial modernisation according to the skill needs of the industry (**Education-as-a-Service**) as well as establishing collaboration structures in between Universities;
- Shift from **mass towards personalised education**;
- **Flexible contracts** for certain profiles rather than permanent ones (e.g. for 3D designers, experts etc. to meet punctual needs for a certain period of time);
- **Validation and Recognition of acquired skills** via trainings across entire labour market;
- Setting up **tailored training programs specific to start-ups, SMEs and big corporates**;
- **Monitoring mechanism** to measure the success over training & education programs;
- Setting up labour **mobility schemes** across EU, not only bringing talent to work but also bringing work to where talents are in order to keep talents in place;
- Changing the way of funding for the education, training, upskilling.

Key Recommendations based on good practices

- **Dual-track system** as being implemented in Germany;
- **Blended education** coupled with **Artificial Intelligence**;
- Focusing on **Group & Social learning** being more effective compared to individual learning;
- **Transforming existing workforce** via upskilling at corporate level (e.g. turning engineers into data scientists and acting as change agents for roll-out: AIRBUS);
- **Driving digital transformation at the regional level via public funding** to convince industry for DT (i.e. Grand-Est Region: 'Industry of the Future' Initiative);
- **Turning cybersecurity challenges into opportunities** (Competency Centre for Cybersecurity - C3 in LU);
- Talent retention by giving more **autonomy**, respect and purpose to the passionate ones being hired (NEXUS).