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## Audit preview

Information on an upcoming audit



# Digitising European industry

August 2019

The fourth industrial revolution is currently underway, using digital technology to connect things, processes and people in real time. It radically changes manufacturing processes and services, and the way business is done, adding value through increased speed and efficiency. Companies which do not adapt to it will face difficulties under these new conditions.

This is particularly true for small and medium-sized enterprises (SMEs), which often lack the resources to meet the challenge of digitising their operational processes.

The Commission tracks Member States' digital development via the Digital Economy and Society Index (DESI), which has revealed wide disparities in digitisation across EU regions and industrial sectors.

In April 2016, the Commission launched the "Digitising European Industry" (DEI) initiative, which includes the objective of mobilising over €50 billion of investment between 2016 and 2020. This initiative includes support for Digital Innovation Hubs (DIHs), revising the legal framework in line with the digital age, and a European platform of national initiatives to digitise industry.

The aim of this audit is to analyse how effective the DEI initiative has been so far, focusing in particular on DIHs and on the support provided by the Commission to Member States. We will interview representatives of DIHs and other project beneficiaries in various EU countries. We will also meet with other national and international stakeholders to assess the effectiveness of the support provided.

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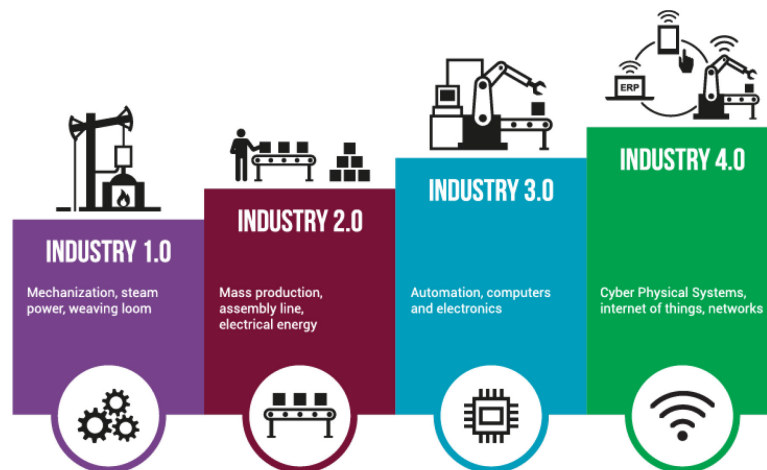
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## Background

### Industrial Revolution 4.0

The fourth wave of global industrial development, as shown in [Figure 1](#) below, is about interconnecting industrial assets through the Internet. It is best understood as a new level of organisation and control over the entire life cycle of products, and is geared towards increasingly individualised customer requirements. This cycle begins at the product idea, and extends through development and manufacturing, all the way to delivery to the end customer, concluding with recycling. This digital transition means that companies worldwide will need to transform, requiring considerable investment<sup>1</sup>.

**Figure 1 – Phases of industrial revolution**



Source: Bluechip Infocorp.

According to a 2015 Boston Consulting Group study<sup>2</sup>, although the full shift toward Industry 4.0 might take 20 years, key advances will be made, and winners and losers will emerge, by 2025. The EU wishes to ensure that the industries in its Member States are among the winners.

As 99 % of the EU's businesses are SMEs, it is particularly important to encourage SMEs to address the challenge of digitisation. Most SMEs are micro-enterprises (i.e. they have fewer than 10 employees) which, due to their size, may not be able to face this challenge on their own.

## The extent of industry digitisation in 2018

The Commission tracks the digital development of Member States in the Digital Economy and Society Index<sup>3</sup> (DESI), across five main dimensions<sup>4</sup>. The most relevant dimension for digitising European industry is “integration of digital technologies”.

Industrial digitisation varies from country to country and from region to region within countries, with disparities between high tech industries and traditional ones. The most digitised sectors are computer programming, consultancy and related activities (63 %), telecommunications (59 %), and publishing (54 %), while the least digitised are construction (4 %), basic metal manufacturing (9 %), and food manufacturing (13 %)<sup>5</sup>. In addition, there are also wide disparities between large companies and SMEs. About 54 % of large enterprises are highly digitised, compared to only 17 % of SMEs.

## Legal and policy framework

### EU policy and initiatives

In 2010, the Europe 2020 flagship initiative “A digital agenda for Europe”<sup>6</sup> was launched. This first EU initiative aimed at delivering sustainable economic and social benefits from a digital single market.

In 2015, in the context of Europe 2020, the Commission launched its strategy to achieve a Digital Single Market (DSM)<sup>7</sup>, including improving industrial digitisation in areas such as the data economy, Internet of things, cloud computing, standards, skills and e-government.

In April 2016, the Commission launched the “Digitising European Industry” (DEI) initiative<sup>8</sup> as part of the DSM strategy, with encouragement from the Council<sup>9</sup>. The DEI builds on and complements the various national and regional initiatives for digitising industry that have been launched across Europe in recent years, and is structured around five main pillars (see [Figure 2](#)).

**Figure 2 – Pillars of the DEI initiative**



Source: European Commission.

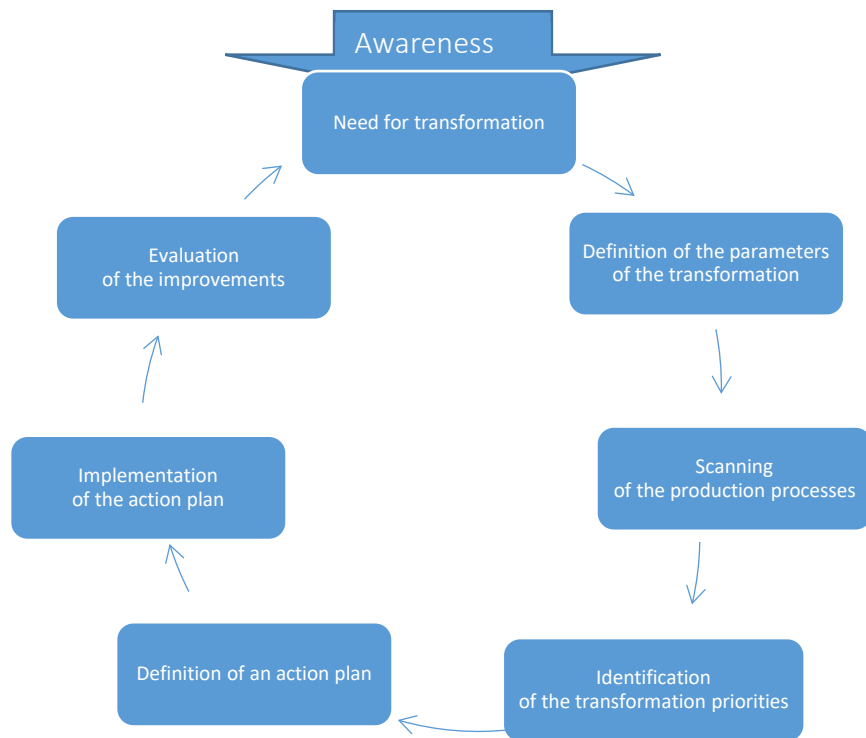
### Digital Innovation Hubs

Digital Innovation Hubs (DIHs) form one pillar of the DEI initiative. DIHs help companies, especially smaller companies and start-ups, to improve their business, production processes, products and services through digital innovation. At the core of a DIH, there is normally a “competence centre”<sup>10</sup>, such as a research and technology centre or an innovation-oriented university department. DIHs offer services across the whole spectrum of the process of the digital transformation.

The services available through a DIH enable businesses to access the latest knowledge, expertise and technology for testing and experimenting with digital innovations relevant to their products, processes or business models. DIHs also connect with investors in order to facilitate access to finance for digital changes. DIHs help connect suppliers of digital innovations with potential users.

**Figure 3** below summarises the different ways that DIHs can help companies.

**Figure 3 – Role of a DIH**



Source: ECA.

## **Roles and responsibilities**

### **The European Commission**

The Commission is active in policy-making, coordinating and financing initiatives. While being responsible for completing the internal market for goods and services, and for establishing and implementing competition policy for the EU, the Commission leads and coordinates the DEI initiative. Furthermore, the Commission supervises the interventions implemented by Member States through the European Structural and Investment funds, such as the European Regional Development Fund (ERDF), and it directly manages the Horizon 2020 Research and Innovation Programme.

### **The EIB group**

On the basis of a mandate from the Commission, the EIB manages the European Fund for Strategic Investment (EFSI). In addition, the European Investment Fund (EIF), which is part of the EIB group, manages InnovFin, an initiative launched by the Commission and the EIB Group under Horizon 2020, to provide guarantees, financing and equity to SMEs.

### **Member States**

Managing authorities and intermediary bodies in the Member States are responsible for the daily management of EU co-funded programmes. This includes appraising, selecting and monitoring projects, and proposing modifications to programmes to align them with changes in needs and/or strategies.

### **Industry stakeholders**

The global economy is on the brink of a technological revolution. In a very short time, the way we do business will be fundamentally affected by exponential development and the application of new technologies. Companies, in particular SMEs, are in the forefront of the change. They need to understand the challenges they face and prepare to adapt their traditional business models to the digital revolution.



## Funding

### Up to 2020

The Commission estimates that the DEI initiative will have mobilised over €50 billion in investment between 2016 and 2020. This includes EU support and national, public and private funding. The main sources of EU funding are Horizon 2020 and the ERDF. The DEI initiative will benefit from about €6.5 billion in support from Horizon 2020 and from about €5 billion of national and regional investment in DIHs. The Commission expects that these EU investments will stimulate additional public and private investments of almost €40 billion.

For the 2014-2020 period, the ERDF has made available €57.2 billion<sup>11</sup> that can be used, among other things, to finance the digitisation of EU industry.

### 2021-2027

The Commission's proposal for the new multiannual financial framework plans to continue supporting digital innovation through the ERDF and Horizon Europe, the research and innovation programme that will succeed Horizon 2020. One of the main policy objectives of the ERDF regulation proposal is to make Europe smarter by promoting innovation, and by reaping the benefits of digitisation. Within this objective are proposals to support ICT take up in SMEs, including digital innovation hubs.

In addition, the Commission has proposed the creation of the Digital Europe Programme<sup>12</sup>, with a dedicated budget of €9.2 billion.

## Focus of the audit

Our audit aims to analyse how effective the EU has been in supporting national strategies for digitising industry and the Digital Innovation Hubs. We will focus on:

- the support provided to Member States to develop, implement and follow up on effective digitisation strategies;
- the effectiveness of the EU funds in supporting the digitisation of European industry;
- the Digital Innovation Hubs and the support provided to them to boost digital innovation;

- the Commission's action to ensure a suitable legal framework and appropriate connectivity for digitising European industry.

In our assessment, we will examine a number of ERDF co-funded projects and selected Digital Innovation Hubs in a number of Member States. We will also engage with the EIB, EIF, national authorities, a panel of experts drawn from the worlds of research and academia, and other industry stakeholders to obtain relevant complementary data and information.

In the course of our audit, we will analyse key issues identified during the preparatory phase. Since these issues have been identified before the audit work commences, they should not be regarded as audit observations, conclusions or recommendations.

### **ABOUT ECA SPECIAL REPORTS AND AUDIT PREVIEWS**

The ECA's special reports set out the results of its audits of EU policies and programmes or management topics related to specific budgetary areas.

Audit previews provide information in relation to an ongoing audit task. They are based on preparatory work undertaken before the start of the audit and are intended as a source of information for those interested in the policy and/or programme being audited.

If you wish to contact the team in charge of this audit, please do so through the following e-mail address:

**[ECA-digitising-industry-audit@eca.europa.eu](mailto:ECA-digitising-industry-audit@eca.europa.eu)**

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- <sup>1</sup> PWC (2014), Industry 4.0 – Opportunities and Challenges of the Industrial Internet.
  - <sup>2</sup> Boston Consulting Group (2015), Industry 4.0, “The future of productivity and growth in manufacturing industries”.
  - <sup>3</sup> The Digital Economy and Society Index is a composite index that summarises relevant indicators on Europe’s digital performance and tracks the digital competitiveness of EU Member States.
  - <sup>4</sup> These five dimensions are: (i) Connectivity; (ii) Human Capital; (iii) Use of Internet; (iv) Integration of Digital Technology, and (v) Digital Public Services.
  - <sup>5</sup> European Commission (2017), Round table on Digitising European Industry: Working Group 1 – Digital Innovation Hubs.
  - <sup>6</sup> European Commission (2010), COM(2010) 245 final/2 of 26.08.2010, A Digital Agenda for Europe, Brussels.
  - <sup>7</sup> European Commission (2015), COM(2015) 192 final of 6.5.2015, A Digital Single Market Strategy for Europe, Brussels.
  - <sup>8</sup> European Commission (2016), COM(2016) 180 final of 19.4.2016, Digitising European Industry; Reaping the full benefits of a Digital Single Market, Brussels.
  - <sup>9</sup> Council of the European Union (2015), 9340/15, Conclusions on the digital transformation of European industry, 29.5.2015.
  - <sup>10</sup> Competence Centres are collaborative entities staffed with highly qualified researchers. They provide focused strategic research for the benefit of industry.
  - <sup>11</sup> The amount represents the ERDF funding that could be used to finance DEI related projects.
  - <sup>12</sup> Proposal for a Regulation of the European Parliament and of the Council establishing the Digital Europe programme for the period 2021-2027, COM(2018) 434 final.

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