



# DIGITAL INNOVATION HUBS

Helping companies across  
the economy make the most  
of digital opportunities

*“I Believe Europe can successfully manage the transformation into the digital age, if we build on our strengths and values”*

**Ursula von der Leyen, President-Elect of the European Commission**



@DigitalSingleMarket #Industry40

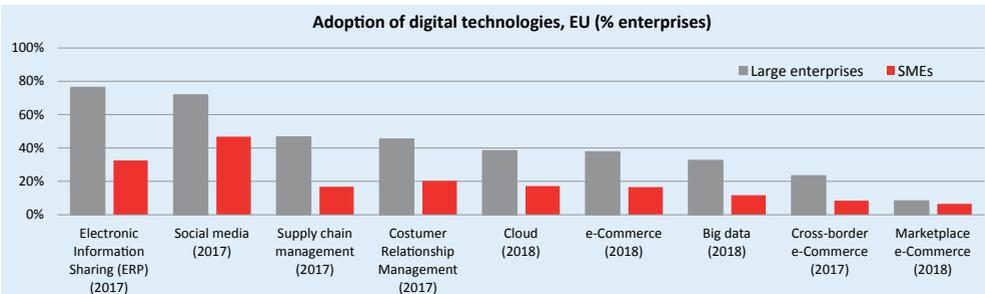
#DigitiseEU

# THE NEED FOR DIGITALISATION

Digital technologies such as **High Performance Computing, Internet of Things, Big Data, Block-Chain, Robotics and Artificial Intelligence** allow businesses to produce higher value products and services, and improve production processes.

However, European companies are not making the most of all the opportunities digital has to offer.

The level of digitalisation in Europe remains uneven. The adoption of digital technologies varies strongly according to company size, sector, and location.



Desi Report 2019 – Integration of Digital Technology (source: Eurostat)

The slow uptake of digital technologies poses a risk to the European Union's ability to compete in the global economy, to grow and create new jobs, and is a source of inequalities.



# THE EU'S REPLY: DIGITISING EUROPEAN INDUSTRY INITIATIVE

The European Commission launched the Digitising European Industry initiative (DEI) in April 2016. As part of the Digital Single Market strategy, the DEI initiative aims to reinforce the EU's competitiveness in digital technologies and ensure that every business in Europe - whichever the sector, wherever the location, whatever the size - can draw the full benefits from digital innovation.

Building on and complementing the various national initiatives for digitising industry, the DEI actions are structured around five main pillars:



# DIGITAL INNOVATION HUBS

## DIGITAL INNOVATION HUBS ARE A KEY PILLAR IN THE EUROPEAN COMMISSION'S DIGITISING EUROPEAN INDUSTRY INITIATIVE

Companies can benefit from Digital Innovation Hubs to better understand how to improve their processes, products and services through digital technologies.

Digital Innovation Hubs are not-for-profit, one-stop-shops that support companies – in particular small and medium-size enterprises (SMEs) – and public organisations in their digital transformation, offering them services such as:



**Test before invest:** Experimentation with new digital technologies – software and hardware – to understand new opportunities and return on investments, also including demonstration facilities and piloting



**Skills and training** to make the most of digital innovations: train-the-trainer programmes, boot-camps, traineeships, exchange of curricula and training material



Support to find **investments:** feasibility studies, develop business plans, incubation & acceleration programmes



An innovation **ecosystem and networking** opportunities through marketplaces and brokerage activities





# JOINING FORCES WITH MEMBER STATES AND REGIONS

The European Union, EU countries and regions work together to make the most of Digital Innovation Hubs:

- ➔ **The EU:** supports the collaboration of Digital Innovation Hubs to create an EU-wide network where companies can access all necessary competences not available in their local hubs.
- ➔ **Member States:** make sure their national strategy supports the creation of Digital Innovation Hubs and secure the necessary financial means.
- ➔ **Regions:** ensure the presence and quality of regional Digital Innovation Hubs by managing financial resources such as regional development funds (European Structural and Investment Funds / European Regional Development Fund), and encourage SMEs to work with them.



## WHAT HAS HORIZON 2020 ACHIEVED?

- ➔ **€500 million EU funding** from Horizon 2020 for Digital Innovation Hubs (2016-2020).
- ➔ **Support to more than 2000 Start-ups, SMEs and mid-caps** to test digital innovations in collaboration with more than 200 **Digital Innovation Hubs networked across the European Union.**
- ➔ **13 EU countries** included Digital Innovation Hubs in their national digitalisation strategies. More are preparing to do so.
- ➔ **Coaching more than 60 potential Digital Innovation Hubs** in regions with slower adoption of digital technologies, with focus on Central and Eastern Europe

# EXAMPLES OF INNOVATIVE EXPERIMENTS



EU-funded success stories from the I4MS (ICT Innovation for Manufacturing SMEs) and the SAE (Smart Anything Everywhere) initiatives:



## A 3D SCANNER TO DESIGN MADE-TO-MEASURE SHOE INSOLES USING HPC

A Spanish and an Italian SME (Podoactiva, Base Protection) teamed up and got help from a Spanish Digital Innovation Hub (Inycom) to design a scanner that processes data using on-demand HPC resources via the cloud.

- ➔ Podoactiva and Inycom have now as clients private clinics that use this technology in Spain, Portugal, Italy and Mexico, selling made-to-measure products to customers worldwide.
- ➔ SME Base Production benefited from a cloud-based solution.
- ➔ Podoactiva and Inycom expect to multiply their turnover by 3 up to €750,000, gain an additional 3% in their market share and reduce their time-to-market by 40%.
- ➔ This innovation opens the door for 3D printing of insoles that could improve production and timely delivery of the product.



The EU made this innovation possible under project CLOUDSME with an initial €321,000 investment.

## SUSTAINABLE AGRICULTURE POWERED BY SMART TECHNOLOGIES

The Spanish SME Encore Lab, with the help of the Digital Innovation Hub CEA Leti, developed a low cost device that monitors the crops directly on the field through sensors.

- ➔ 35% reduction in use of pesticides and 50% reduction in water consumption
- ➔ This innovation has been successfully integrated in Encore Lab's flagship product leading to an expected increase of sales by 10,000 units within five years and doubling of staff to 20 people.

The EU made this innovation possible under project EUROCPs with an initial €52,000 investment.



## 3D PRINTING AND HPC TO IMPROVE GEARBOX PRODUCTION

The collaboration of the Italian manufacturing SME STAM with the technology provider CIMNE and the High-performance Computing Digital Innovation Hub CSUC (both Spanish) has led to a highly sophisticated solution for manufacturing leading edge gearbox technology: producing the parts of the gearbox through 3D printing. This was achieved by the efficient use of HPC resources on-demand.

- STAM saves 30% product costs and can react 30% faster to market needs.
- STAM expects to triple its market share and open new markets.
- It is estimated that revenues will increase by €320,000 and staff by three employees.

This innovation was made possible within project CLOUDFLOW.



## SME IMPROVES DESIGN OF AN AIRCRAFT

HPC DIH ARCTUR and the technology service provider XLAB provided SME PIPISTREL (all Slovenian) with HPC resources and know-how to run simulations of sufficiently high fidelity "online" on a Cloud-based HPC system.

- For PIPISTREL the use of Cloud-based HPC offered the required level of simulation results 10 times cheaper than using a suitable powerful in-house system.
- For ARCTUR this project was one of the first steps towards becoming a successful commercial HPC provider - rather than serving the scientific domain only.
- SME XLAB gained strategic knowledge and extended its service offer.

This innovation was made possible within project FORTISSIMO.





# WHAT'S NEXT?

## IN THE NEW EU PROGRAMMING PERIOD AS OF 2021

Digital Innovation Hubs will play a **key role in the next European Multiannual Financial Framework for 2021-2027**; they will help ensure the wide use and accessibility to digital technologies across the economy and society by businesses and the public sector alike.

A network of Digital Innovation Hubs will ensure the widest geographical coverage across Europe. The EU proposes to scale up its commitment towards Digital Innovation Hubs from 2021 on through the

- **Horizon Europe programme:** Supporting experiments where highly innovative companies work together with Digital Innovation Hubs to develop novel digital solutions to improve their businesses.
- **Digital Europe programme:** Furthering capacities of Digital Innovation Hubs to bring the benefits of strategic digital technologies - such as High Performance Computing, artificial intelligence, cybersecurity – and advanced digital skills to all businesses, in particular SMEs, and the public sector.





# AT A GLANCE: DIGITAL INNOVATION HUBS IN THE DIGITAL EUROPE PROGRAMME

As part of the next long-term EU budget - the Multiannual Financial Framework - the Commission has proposed the Digital Europe programme, the EU's programme focused on building the strategic digital capacities of the EU and on facilitating the wide deployment of digital technologies, to be used by Europe's citizens and businesses.

Among others, the program aims at building up and strengthening the network of European Digital Innovation Hubs as following:



EU support for one Digital Innovation Hub per region



Co-investment with Member States, regions and private sector



Focus on SMEs and public services



Focus on applications that build on HPC, AI & Cybersecurity; and on Digital Skills

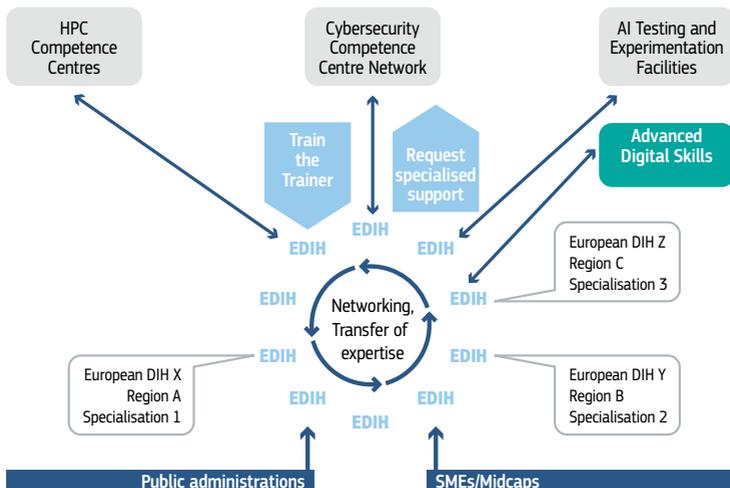


A strong European network of Digital Innovation Hubs



# DIGITAL INNOVATION HUBS IN THE DIGITAL EUROPE PROGRAMME

- ➔ **Focus:** support broad capacity building of hubs in all regions of Europe ensuring appropriate uptake of AI, HPC and Cybersecurity by all industry and public sector organisations in Europe.
- ➔ **Investments:** The EU primarily focuses on experimentation & testing facilities including personnel offering related services. Member States and regions will co-invest - they may use European Regional Development Funds and co-operate with industry.
- ➔ **Selection:** Member States will propose a list of DIH. The EU will select based on a restricted Call for Proposals taking into account quality and balancing regional, technological and application coverage by the network.
- ➔ **Specialisation:** Over time, Digital innovation Hubs develop specialisation in applications and sectors that benefit strongly from the key digital technologies supported by Digital Europe - HPC, AI or cybersecurity:
  - ➔ Specialisation must correspond to the needs of the region and its smart specialisation strategy
  - ➔ Digital innovation hubs normally focus on a portfolio of services related to more than one application, sector, and technology
  - ➔ Networking of DIH will allow specialised hubs to offer their competences and resources to others and, vice versa, to find missing expertise and facilities elsewhere in the network
- ➔ **Co-operation with Digital Europe Facilities and Competence Centres:** DIH will closely collaborate with centres of other pillars of the Digital Europe Programme.
- ➔ **Skills development:** DIH will support skills development in collaboration with the actions under the “Digital Skills” pillar of the Digital Europe Programme, e.g. by rolling out short-term advanced digital skills training courses.



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