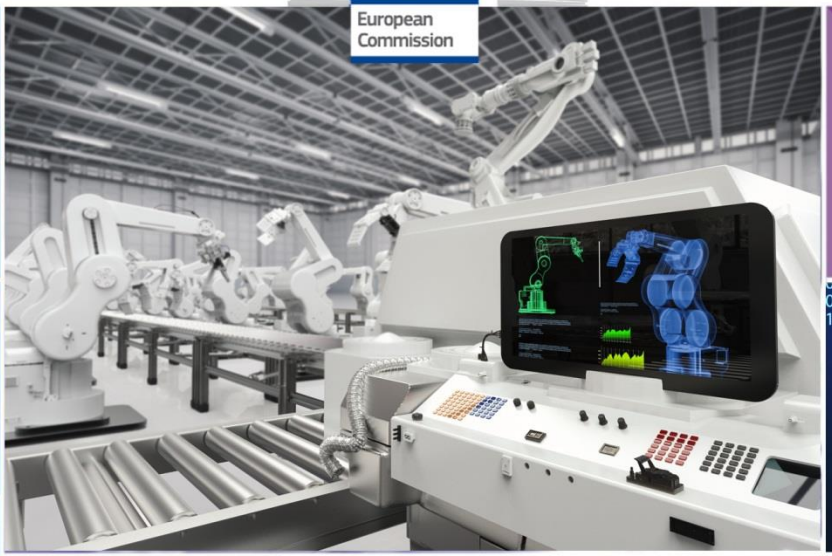


Digitising European Industry

Dr Juha Heikkilä, Head of Unit

Robotics & Artificial Intelligence, DG Connect, European Commission

#DigitiseEU

Technology value chains

Micro-electronics

Autonomous driving

Healthy aging

Rome, 23 March 2017

COMMITMENTS FOR A DIGITAL FUTURE OF EUROPE

8 MSs committed to build and deploy the next generation of computing and data infrastructures in Europe

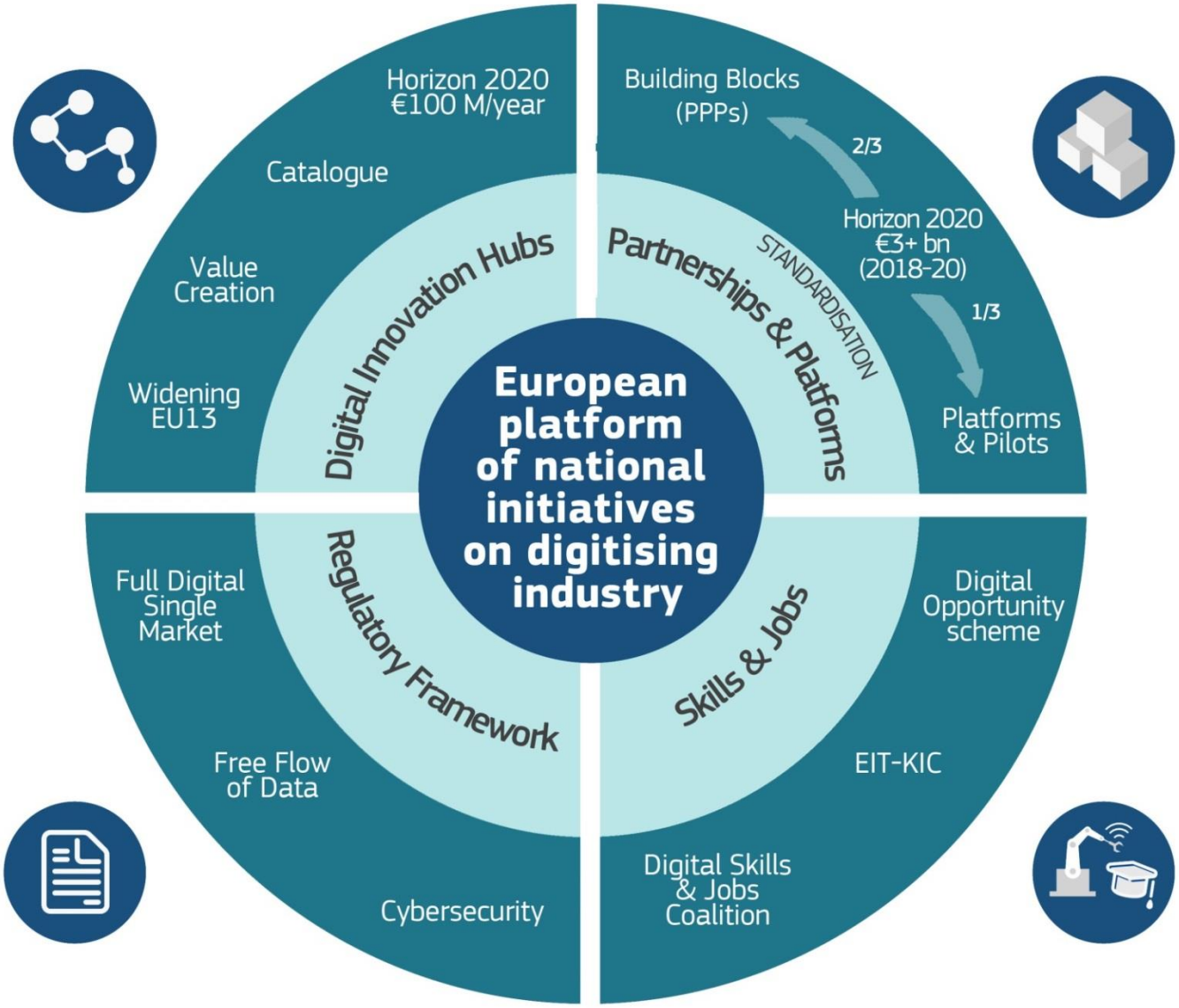
11 Ministers & State Secretaries + industry leaders pledged to collaborate and work jointly within the EU Platform of National Initiatives

29 EU and EEA countries signed up for European cross-border smart mobility corridors

5 Ministers, 2 MEPs & high-level stakeholders participated in the launch of a pilot project to boost cross-border digital work experiences

In addition: Launch of the new European Interoperability Framework

A comprehensive DEI strategy



What platforms?

Online Platforms

Setting the right framework for EU and ensuring innovation, consumer choice, fair commercial practices, … for various platforms (intermediation, market places, search engines, …) (COM(2016) 288)

- B2C aspects
  - Illegal content (COM(2017) 555)
- B2B relations
  - Fair and innovation-friendly platform-to-business trading practice (announced in COM(2017)228, MTR DSM)

Digital Industrial Platforms

- Common specifications, interoperability, standardisation
- Hardware/software environment integrating key technology building blocks
- Development of business ecosystems and large-scale pilots
- €1 billion in Horizon 2020 (2018-2020)

National/European Platforms

- European Platform of National Initiatives on digitising industry
- National Platforms (*eg* Industrie 4.0 Plattform)
- Discussion and coordination forum
- High-level meetings

EuroHPC initiative

EuroHPC declaration 23/03/2017

- Member States engage in a collaborative framework (EuroHPC)

EuroHPC objective:

- Provide European scientists, industry and the public sector with latest HPC and data infrastructure and support the development of its technologies and applications across a wide range of fields

- Provide a ***procurement framework*** for an integrated world-class exascale supercomputing and data infrastructure in Europe
- Support the development of an integrated European HPC and Big Data infrastructure ***ecosystem*** covering all scientific and industrial value chain segments
- foster the European supply industry and provide better access to industrial users
- Provide EU level coordination and adequate financial resources to support the EuroHPC mission and objectives
- **Next Steps**:
  - EuroHPC meeting with the Member States, Brussels, 05 October 2017
  - Ongoing work on a new legal & financial instrument to achieve the EuroHPC objectives.

Contact: DG Connect C2

European platform of National Initiatives on Digitising Industry *(Rome, 2017)*

To reinforce the EU's competitiveness in digital technologies and to ensure that any industry in Europe – big or small, wherever situated, whatever sector – can fully benefit from digital innovations to upgrade its products, improve its processes and adapt its business models to the digital transition.

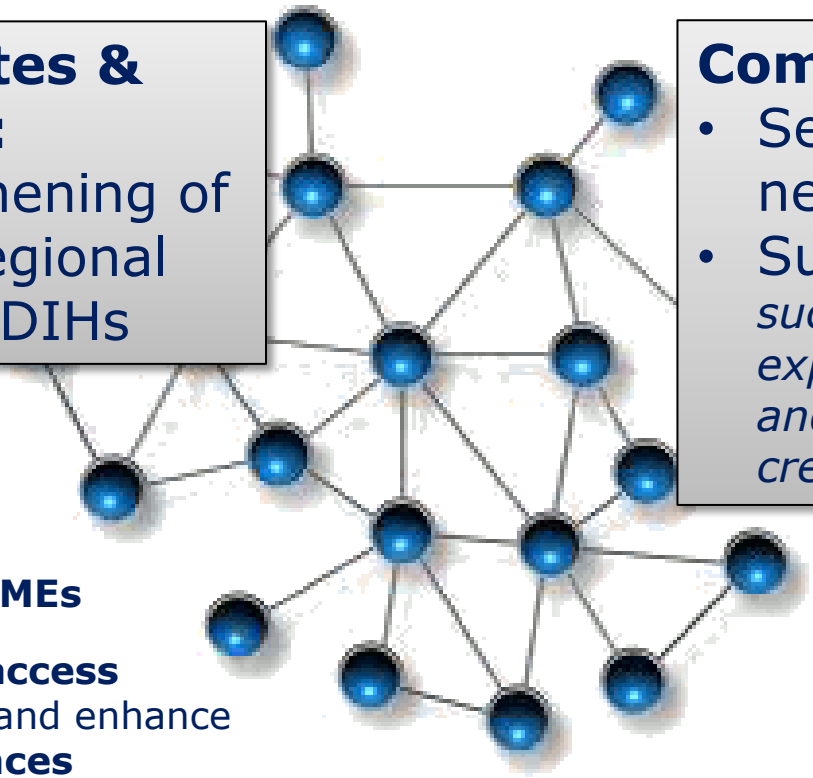
The platform: our added value at EU level

- Coherence, collective steer, co-ordination
- Monitoring actions at all levels: EU, MSs, regional and industrial
- Diffusion of Best Practices
- Pool investments

Digital Innovation Hubs: Towards organic Growth

"Ensure that every business in Europe, whatever its sector of activity, wherever located and whatever its size, can take full advantage of digital innovations and competences"

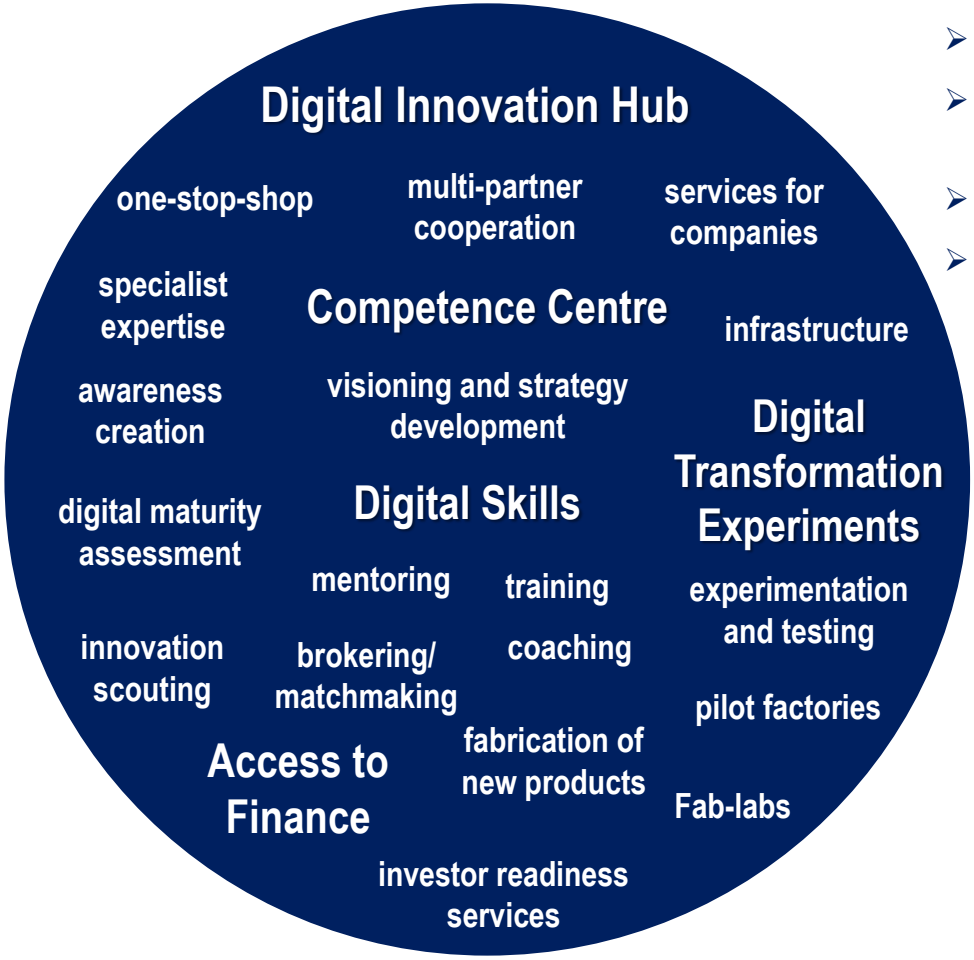
Member States & regions:
build-up/strengthening of national and regional structures of DIHs



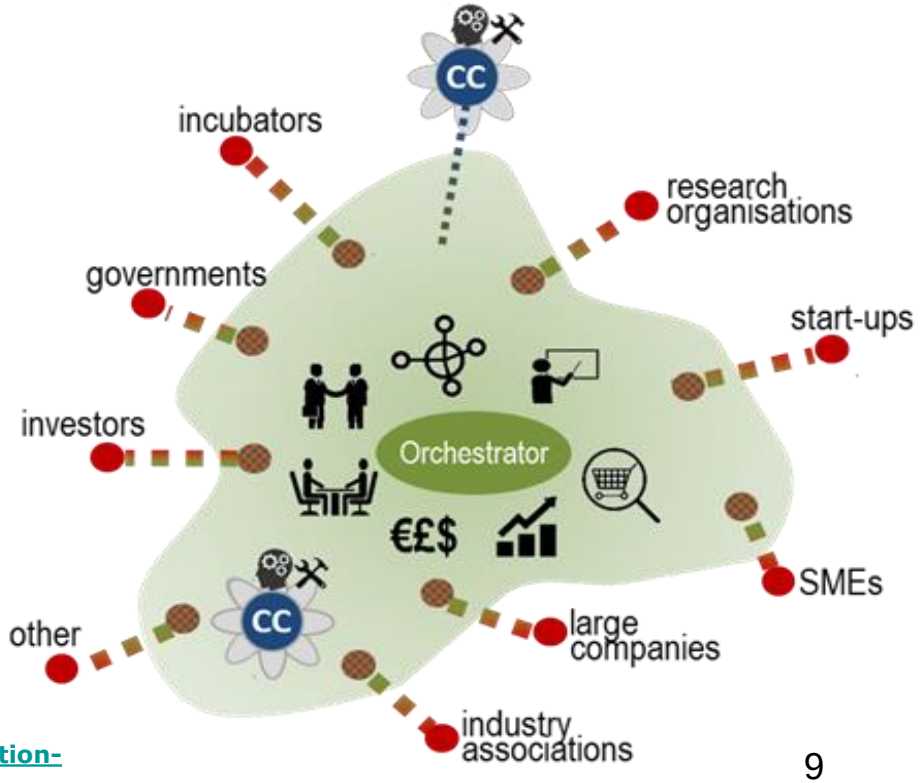
Commission:
- Set up a pan-EU network of DIHs
- Support activities *such as cross-border experiments, catalogue and assistance in the creation of hubs*

- particular attention to **SMEs**
- Ensure companies can **access** advanced technologies and enhance their **digital competences**
- **€100 million per year (EU)** of support to the hubs and **10 times more from the Member States and regions**

What is a Digital Innovation Hub?



- Provide support to **start-ups**, **SMEs**, **mid-caps** in managing their **digital transformation**
- **Competence Centres** are at the **core of DIHs**
- **Variable geometries**: technology applications, sector, SME focus etc.
- Different **service portfolios** offers
- **Single organisations** to **multi-partner cooperation**

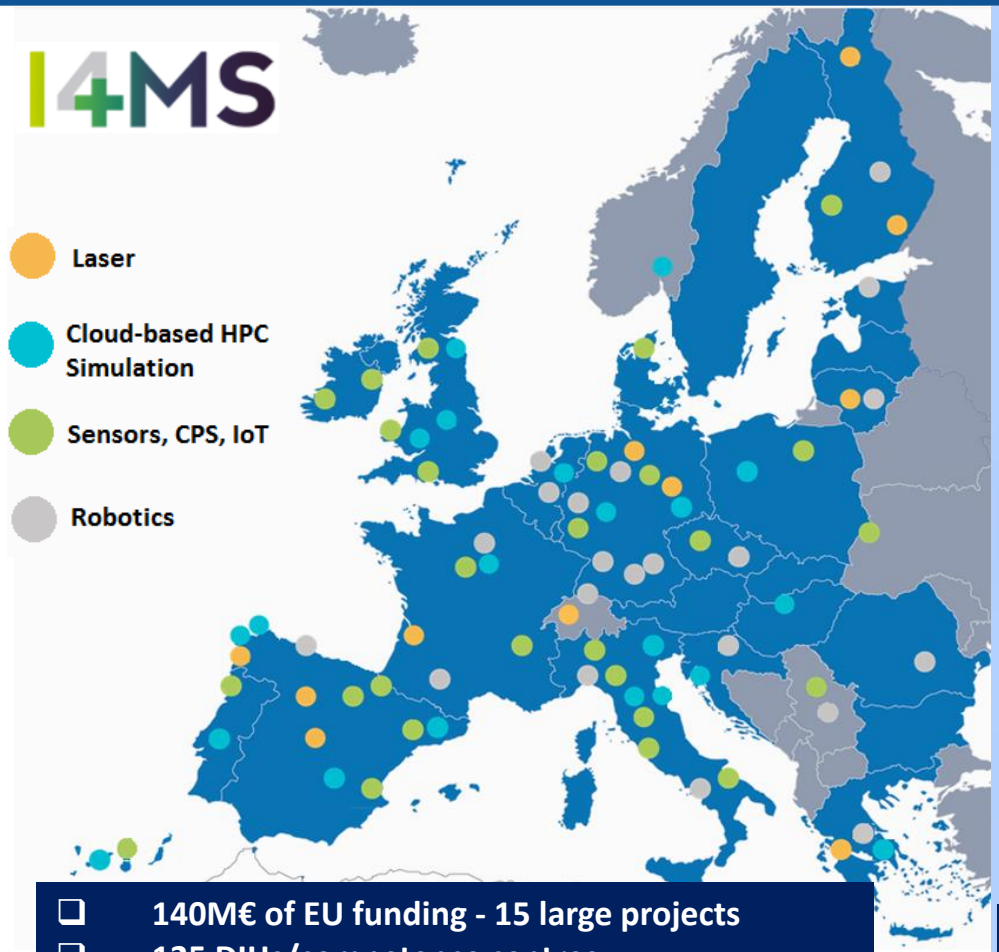


Working Group report on DIHs:

https://ec.europa.eu/futurium/en/content/report-wg1-digital-innovation-hubs-mainstreaming-digital-innovation-across-all-sectors-final

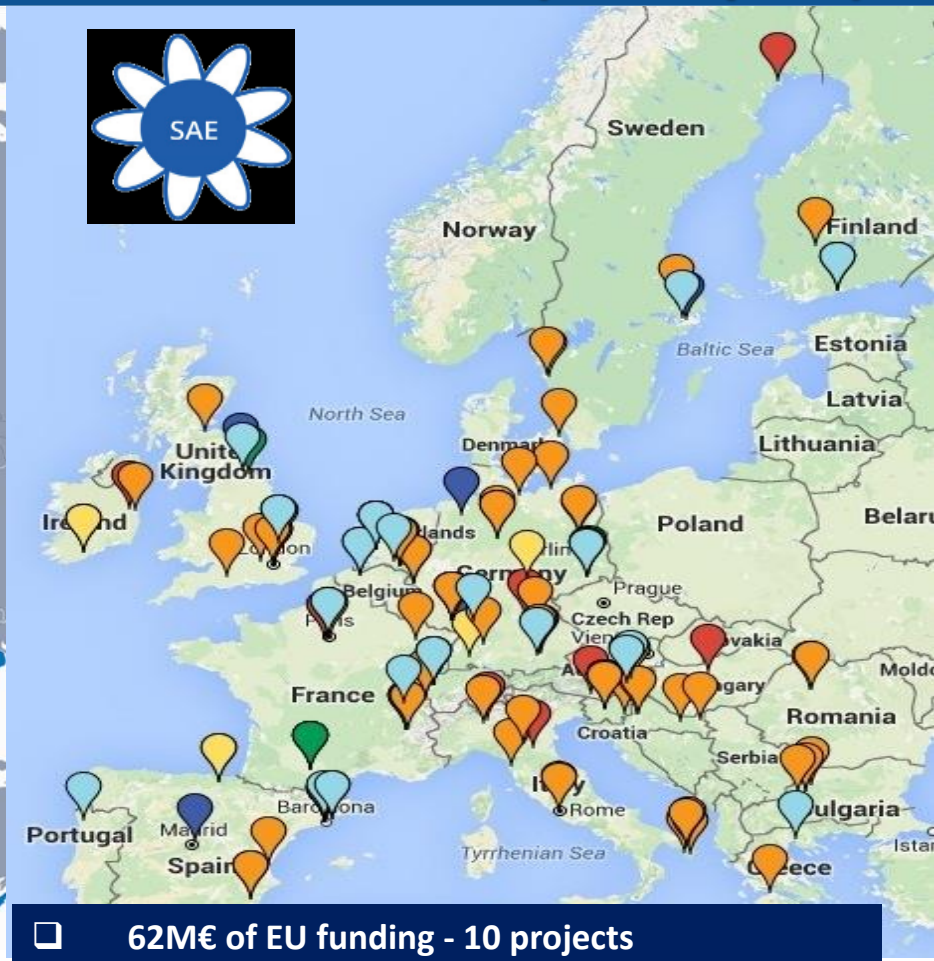
Building on and expanding successful actions (examples)

European Commission



- 140M€ of EU funding - 15 large projects
- 125 DIHs/competence centres
- 450 experiments: 80% cross-border dimension
- 560 contractors. Out of which 406 industrial: 84% SMEs and mid-caps, 50% users, 65% new in EU R&I Programmes
- 29 Members States and Ass. Countries

Interactive map
http://i4ms.eu/regional_hubs/map.php



- 62M€ of EU funding - 10 projects
- 100 DIHs/competence centres
- 285 experiments: 75% cross-border dimension
- 248 contractors. Out of which 203 industrial: 70% SMEs and mid-caps, 40% users, 55% new in EU R&I Programmes
- 19 Members States and Ass. Countries

Digital Innovation Hubs Catalogue

Work in progress

Digital Innovation Hubs

The Alexandra Institute - ICT-based innovation Alexandra Instituttet - it-baseret innovation

Contact Data

Coordinator
The Alexandra Institute

Year Established
1999

Location
Åbogade 34, 8200, Aarhus

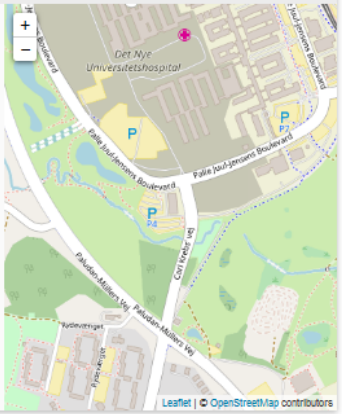
Website
http://alexandra.dk

Social Media

Contact Name
Ole Lehrmann Madsen

Contact Email
olm@alexandra.dk

Contact Phone
+45 20 15 44 51



Description

Description
The mission of Alexandra is to help private and public companies to develop new ICT-based products and services based on the newest ICT-research and technology

Alexandra Instituttets mission er at hjælpe private og offentlige virksomheder med at udvikle nye it-baserede produkter og services baseret på den nyeste it-forskning og teknologi

Link to digitization
Companies get acces to the newest research and technology within ICT. They then get ahead of the competition.

Market and Services

Market sectors
- Electricity, gas and water supply
- Construction
- Wholesale and retail trade
- Transport, storage and communication
- Public administration and defence
- Education
- Health and social work
- Other community, social and personal service activities (media, entertainment, etc.)
- Manufacture of machinery and equipment
- Manufacture of electrical and optical equipment
- Manufacture of transport equipment

Organization

Organizational form
Government agency

Turnover
500.000-1.000.000

Number of employees
50-100

Evolutionary State

Fully operational

Geographical Scope

National

Funding

- Horizon 2020
- National basic research funding
- National specific innovation funding
- Regional funding
- Private funding
- Partner resources

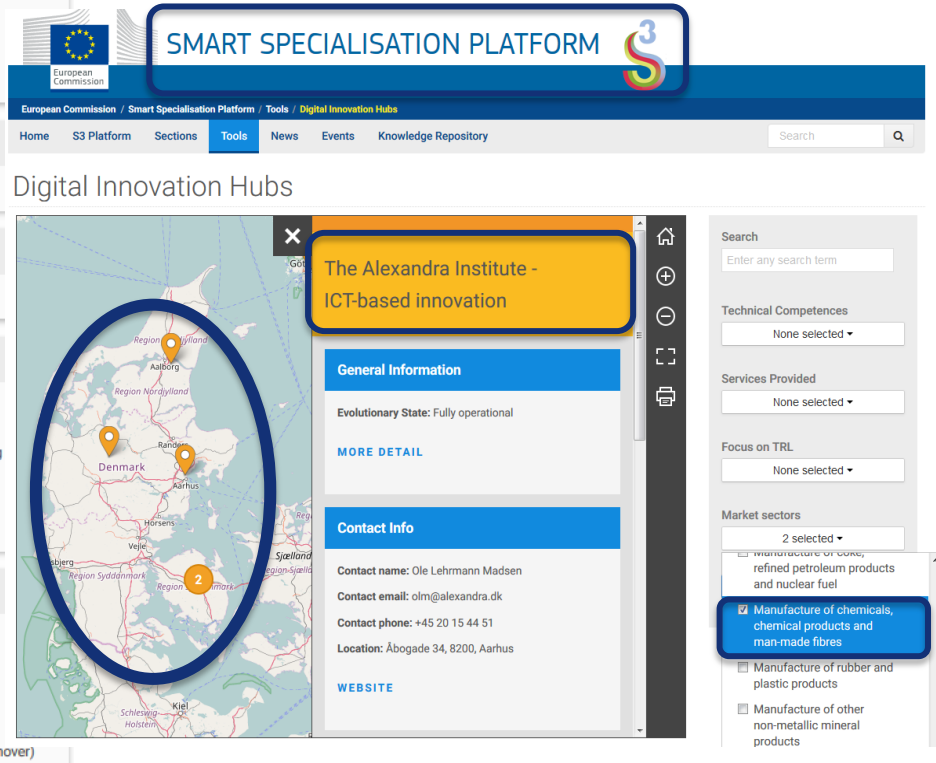
Customers

Number of customers annually
>50

Type of customers
- Start-up companies
- SMEs (<250 employees)
- MidCaps (between €2-10 billion turnover)
- Large companies, multi-nationals

Digitization technological focus

- Internet of Things (e.g. connected devices, sensors and actuators networks)
- Artificial Intelligence and cognitive systems
- Location based technologies (e.g. GPS, GIS,



So far, in Denmark:
- **5+** operational DIHs
- **3+** candidate DIHs

http://s3platform.jrc.ec.europa.eu/digital-innovation-hubs-tool

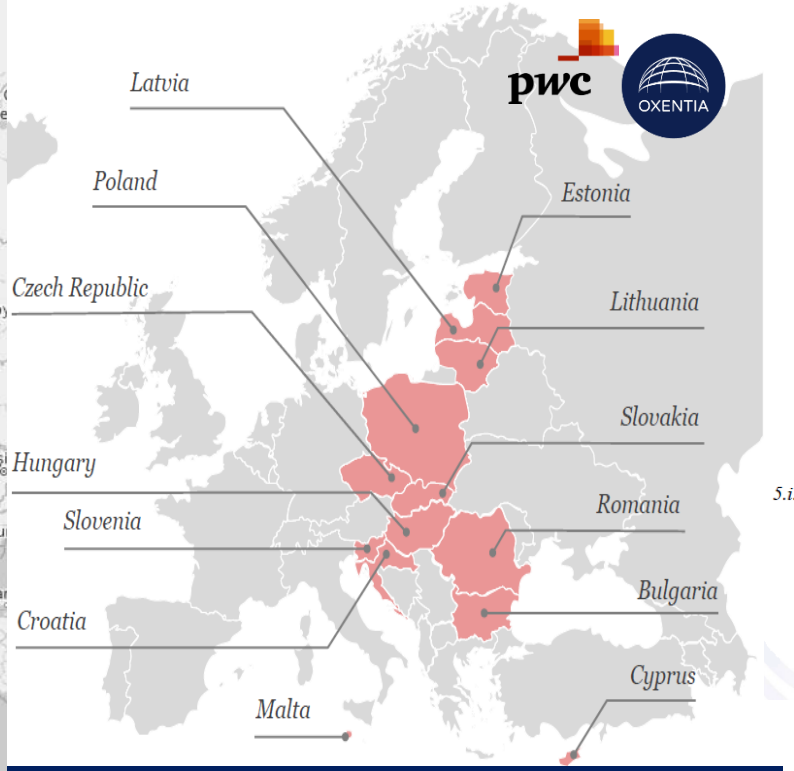
European Network of DIHs- filling the white spots

Finished

- **29 DIHs** coached so far **– 14 EU countries**
- **1.45M€** (up to 50k per participant) in I4MS for most promising regional competence centres for developing their case for becoming a DIH
- Coordination: **I4MS Growth** and **XS2I4MS**
- **18 coached hubs** participated in the latest I4MS call, **8 successfully**

http://dih.i4ms.eu/

Ongoing



- Smart Factories in **Central and Eastern Europe (EU13)**
- **1.8M€** from the **European Parliament** to support the implementation of DIHs in the **selected countries and regions** where the divergence in uptake and adoption of digital technologies has been so far limited
- Call open **until 22 October** – https://ec.europa.eu/eusurvey/runner/ApplicationForm
- Final selection of **30 DIHs by early December**
- Coordination: **PWC** and **Oxford University Innovation**

https://ec.europa.eu/futurium/en/implementing-digitising-european-industry-actions/digital-innovation-hubs-smart-factories-new-eu

Future actions

± 8M€ for widening the SAE and I4MS networks towards industrial regions which are so far underrepresented (WP18-20)

Tentative opening call date: **16 Oct. 2018**
deadline: **2 April 2019**

WP 2018 – 2020 - ICT

Disclaimer: Preliminary information

- Focus area "Digitising and transforming European industry and services" calls for digital innovation hubs (for 300 M€)
  - DT-ICT-01-2019: Smart Anything Everywhere (SAE) Initiative
    - Including: "widening" part for industrial regions that are currently underrepresented in I4MS and SAE
  - DT-ICT-02-2018: Robotics – Digital Innovation Hubs (Healthcare, Infrastructure Inspection and Maintenance, Agri-Food and Agile Production)
  - DT-ICT-03-2020: I4MS (phase 4) - uptake of digital game changers and digital manufacturing platforms
  - DT-ICT-04-2020: Photonics Innovation Hubs
  - DT-ICT-05-2020: Big Data Innovation Hubs
- In SC2: DT-RUR-12-2018: ICT Innovation agriculture – Digital Innovation Hubs for Agriculture

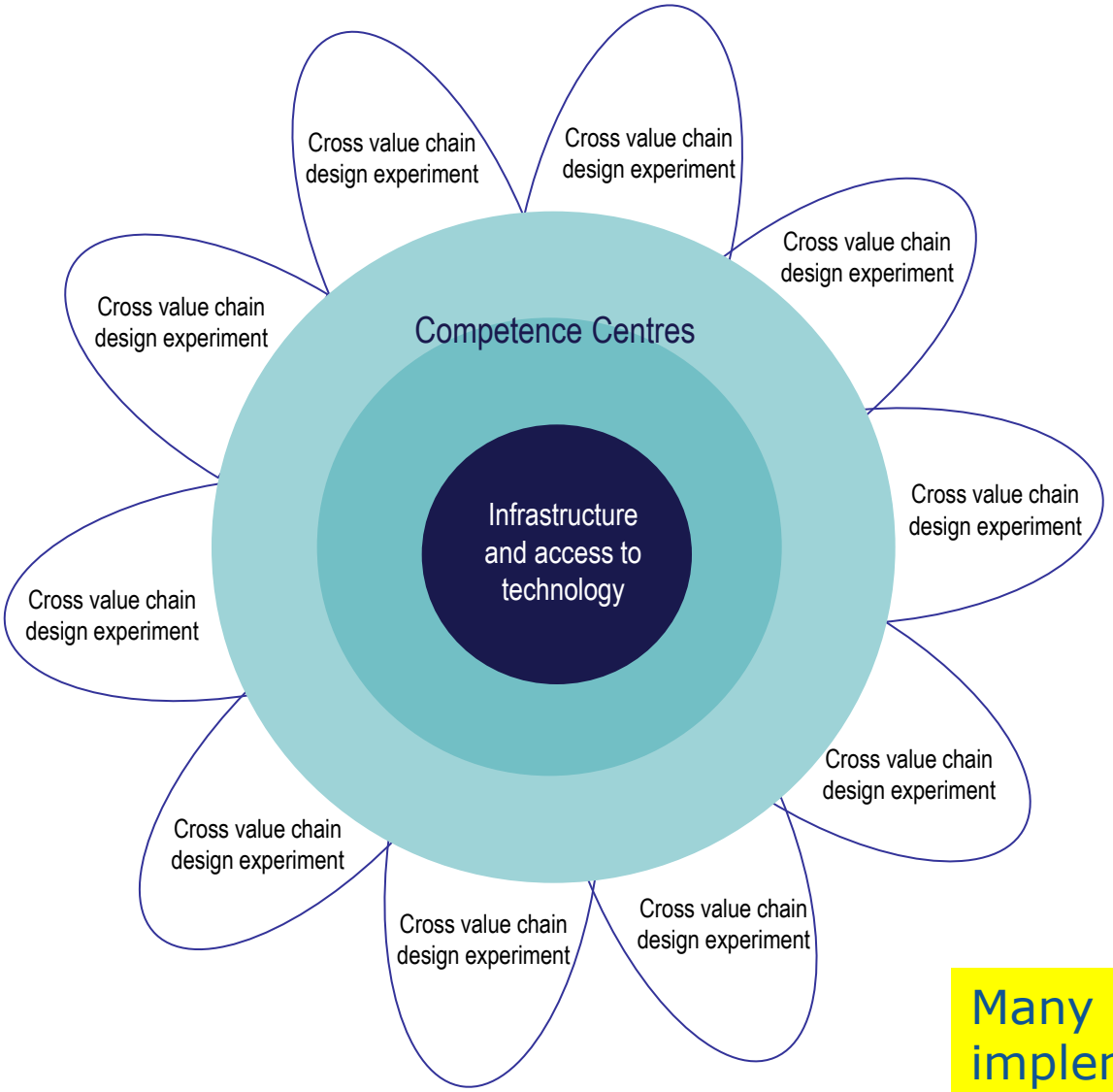
WP 2018 – 2020 - ICT

Disclaimer: Preliminary information

- Focus area calls for innovation actions with the following characteristics:

  - Consortia should be deeply rooted in regional/national DIH
  - Critical mass of highly innovative, cross border experiments. At least 50% of the budget should directly benefit SMEs or slightly bigger companies.
  - Activities should aim at long-term sustainability and include a business plan for the digital innovation hubs, a plan to attract investors, to address training and skills development needs and dissemination. Established networks reaching out to SMEs like the Enterprise Europe Network and the NCP network should be used.
  - Selected projects are expected to collaborate on building a network of Digital Innovation Hubs, covering most regions in Europe.

Critical Mass of Cross-Border Application Experiments



Develop novel products or services with digital technologies.

Bring together actors along value chain.

Suppliers to assist new users in customising and applying digital technologies in their environment.

Financial support to third parties may be used for flexibility

Many projects are using FSTP to implement open calls in H2020

DT-ICT-01-2019: Smart Anything Everywhere Initiative

Stimulate the development of the next wave of products with digital technologies inside

48 M€

A network of Digital Innovation Hubs in the following 4 areas:

- Area 1: Cyber-physical and embedded systems
- Area 2: Customised low energy computing powering CPS and the IoT
- Area 3: Flexible and Wearable Electronics
- Area 4: Widening Digital Innovation Hubs

Innovation Actions up to 8 million €.

SAE

SmartAnythingEverywhere

www.smartanythingeverywhere.eu

Disclaimer: Preliminary information

Examples within Cyber-physical systems – safety critical systems

Autonomous robot that can check lights on airport runways

sterela
ADVANCED SOLUTION MAKER

EZ10: a driverless shuttle to cover short distances on predefined routes
Steery.io/EasyMile

Autonomous weeding robots

naïo Technologies

DT-ICT-02-2018: Robotics – Digital Innovation Hubs

Facilitate and accelerate a broad uptake and integration of robotic technologies

64 M€

A network of Digital Innovation Hubs in the following 4 areas:

- Healthcare
- Infrastructure Inspection and Maintenance
- Agri-Food
- Agile Production

Innovation Actions up to 16 million €.

Disclaimer: Preliminary information

Digital Innovation Hubs in Societal Challenge 2

DT-RUR-12-2018: ICT Innovation agriculture – Digital Innovation Hubs for Agriculture

20M€

- To accelerate the adoption of ICT-based solutions for more productive and sustainable agriculture systems.

Innovation Action up to 10M €

Topic published under the Societal Challenge 2 Work Programme "Food Security, sustainable agriculture and forestry, marine, maritime and inland water research and the bio economy".

Disclaimer: Preliminary information

Related CSA's

DT-ICT-01-2019: Smart Anything Everywhere

- **CSA to support SAE network – 1 M€**

DT-ICT-02-2018: Robotics - Digital Innovation Hubs

- **CSA to support Robotics DIH network – 2 M€**

DT-ICT-06-2018: Coordination and Support Activities for Digital Innovation Hub network

- **CSA to network all DIHs – 1 M€**

Disclaimer: Preliminary information

Upcoming open "cascading funds" calls

Project	Technology Area	Call 1	Call 2	Call 3	Call 4	Call 5
I4MS (Innovation for Manufacturing SMEs) Initiative						
HORSE	Robotics	**Nov.17**	-	-	-	-
ReconCell	Robotics	**Nov.17**	-	-	-	-
L4MS	Logistics for Manufacturing	**Sep.18**	**Sep.19**	-	-	-
CloudiFacturing	HPC cloud-based simulation services	**Jul.18**	**Jul.19**	-	-	-
MIDIH	CPS/IoT for Manufacturing	**Mar.18**	**Mar.19**	-	-	-
AMABLE	Additive Manufacturing	**Mar.18**	**Mar.19**	**Mar.20**	-	-
SAE (Smart Anything Everywhere) Initiative						
FED4SAE	Cyber-Physical and Embedded Systems	**Nov.17**	**May18**	**Nov.18**	-	-
TETRAMAX • Bilateral	Low energy computing powering CPS and IoT	**Nov.17**	**Oct.18**	**Sep.19**	**Apr.20**	-
• Value chain/ interdisciplinary		**Feb.18**	**Dec.18**	**Oct.19**	**Apr.20**	-
• Entrepreneurial		**Aug.18**	**Aug.19**	**Aug.20**	-	-
DIATOMIC	Advanced micro-electronic components and Smart System Integration	**Mar.18**	**Sep.18**	-	-	-
SmarTEES	Organic and large area electronics	**Mar.18**	**Jul.18**	**Nov.18**	**Apr.19**	**Sep.19**
Other projects						
Data Pitch	Data brokerage between public sector organisations and SMEs	**Jul.17–end of Sep.17**	**Autumn 18**	-	-	-

Where to find cascading funds open calls on participant portal?

- http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/other/competitive.html

Digital Industrial Platforms

What do we mean?

✗ *A place or opportunity for public discussion*

e.g. European Platform of National Initiatives

✓ *An operating system that integrates different technologies and various applications and services*

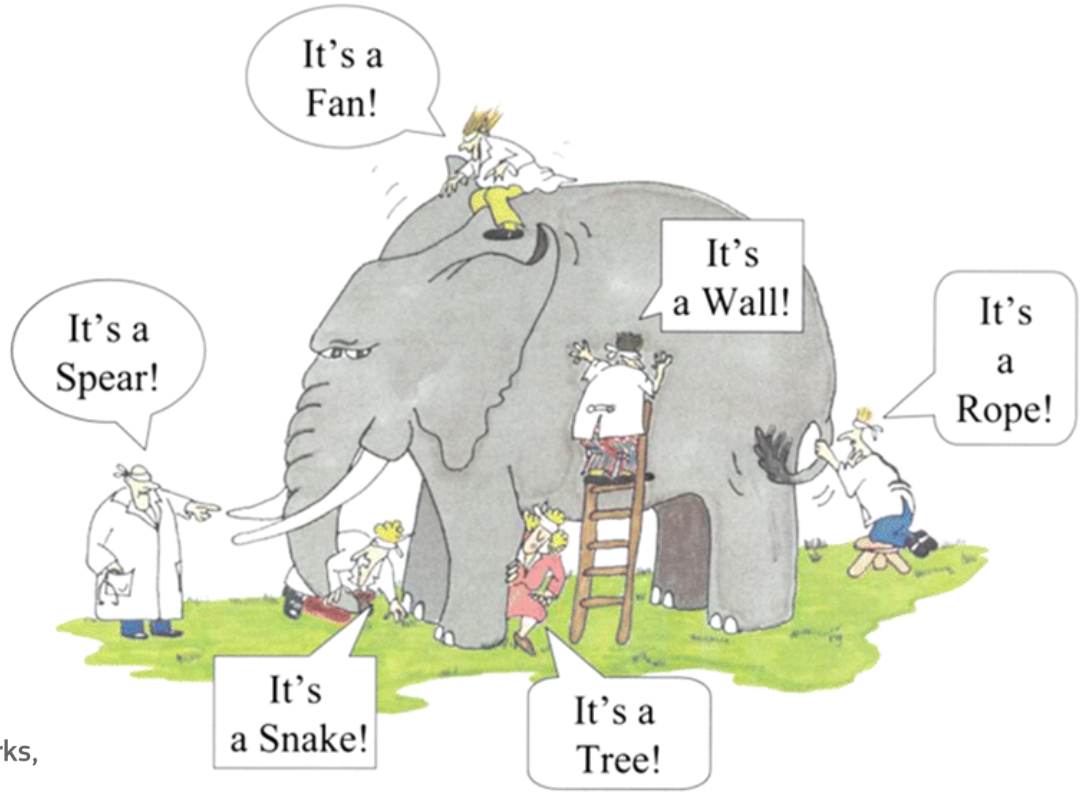
✗ *Online platforms in the consumer world*

e.g. Facebook, Nest, Android

✓ *Industrial platforms in the business world*

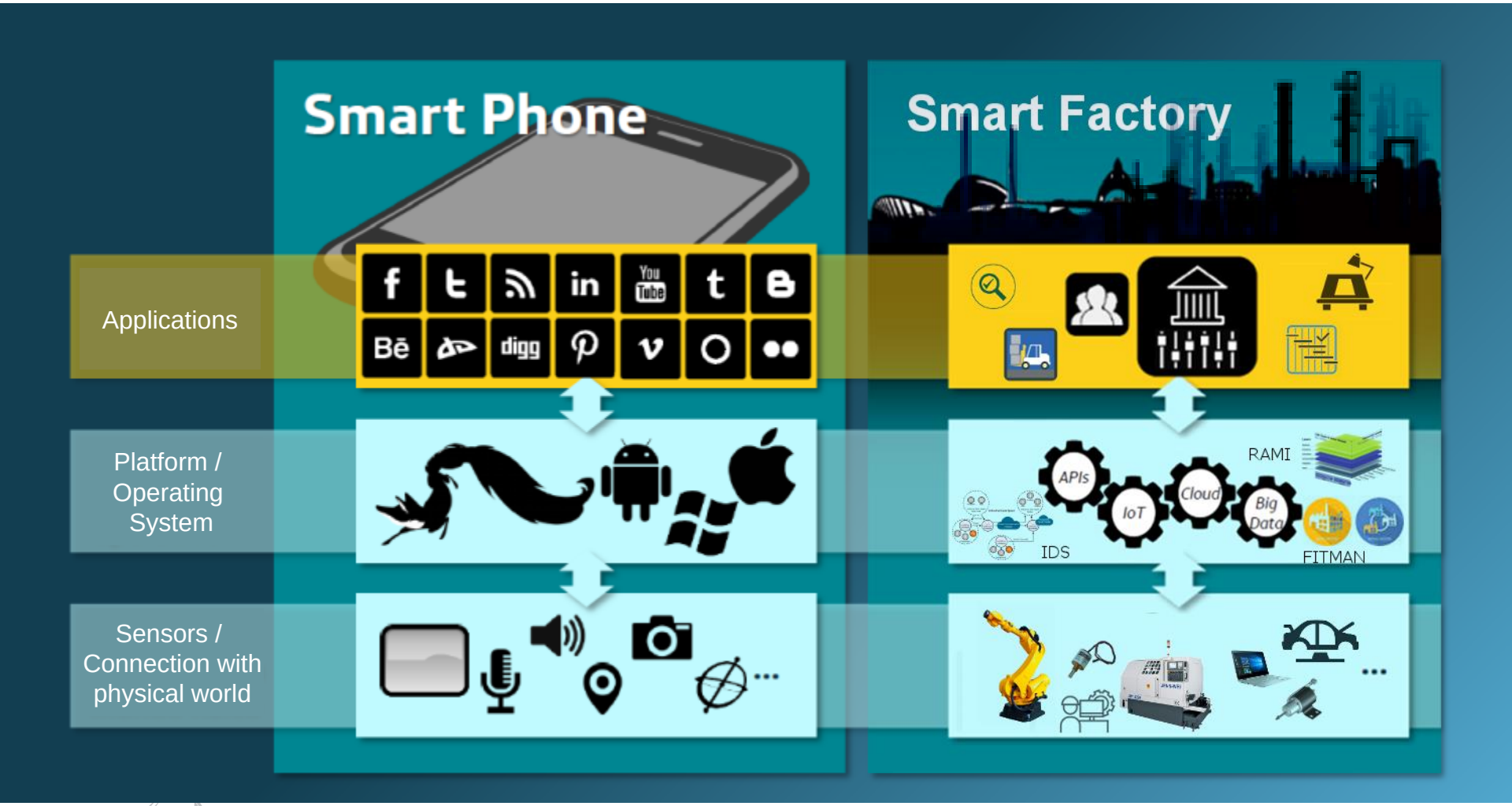
In different ways and to varying degrees they may take in:

1) a community role
2) an infrastructure role
3) a data role



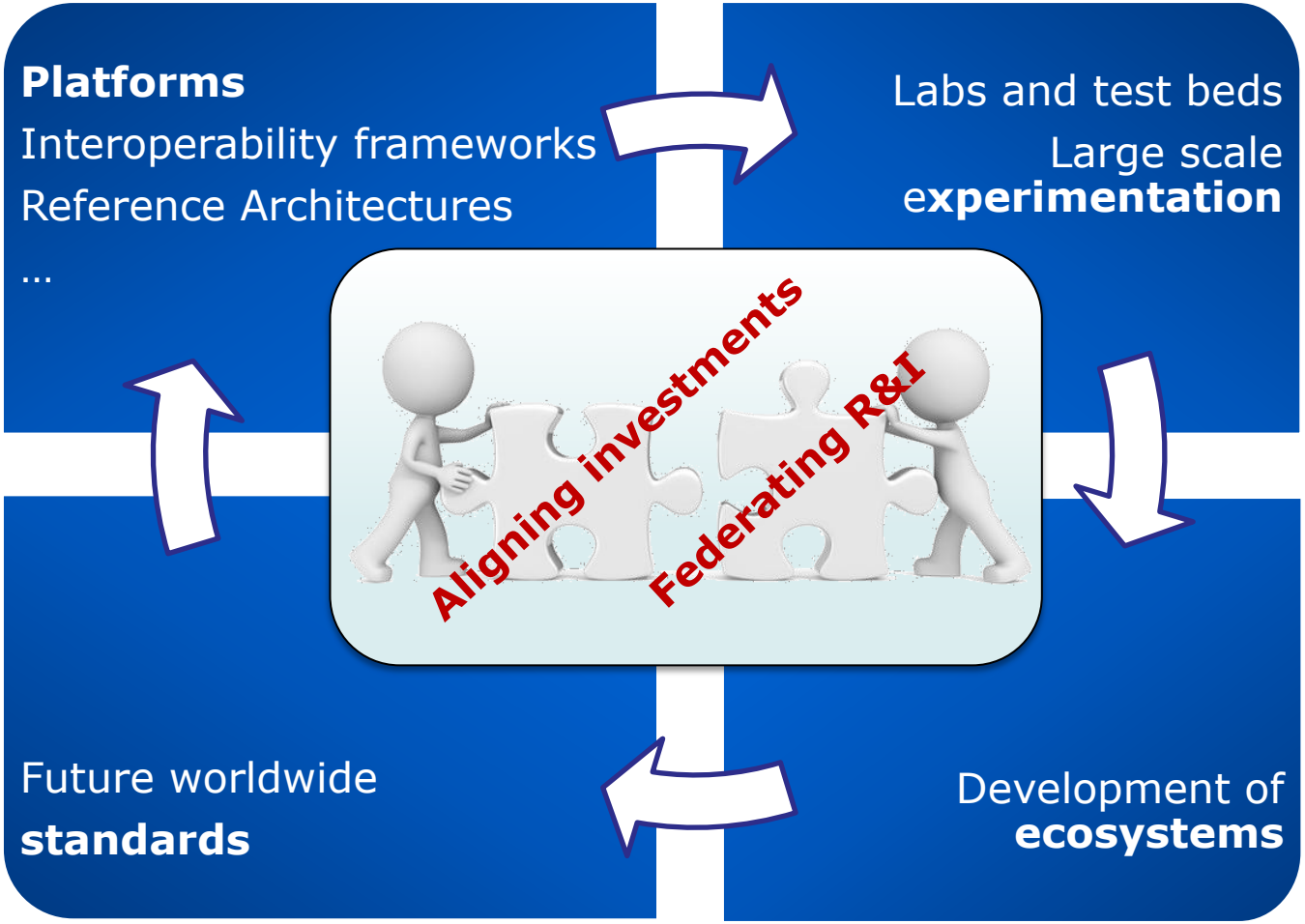
Digital Industrial Platforms

Smartphone analogy



Leadership in digital industrial value chains

Aligning investments and federating R&I efforts from all players (industry, national initiatives and EU) on common interests around the platform economy based on European interests and values



WP 2018-2020

Topics pan-European platform-building and piloting

Digital Manufacturing Platforms

- Agile Value Networks: Lot-size One
- Zero-defect Processes and Products
- Machines & Human Competences
- Sustainable Value Networks

A digital 'plug and produce' online equipment platform for manufacturing

...

Agricultural Digital Integration Platforms

- Optimize farm operations
- High-precision farming

Digital Service Platforms for Rural Economies

...

Smart Hospital of the Future

Smart and Healthy Living at Home

- Healthy & independent living
- Early risk detection and intervention

...

Interoperable and Smart Homes and Grids

Big Data Solutions for Energy

...

Cross-cutting issues, IoT, Big Data, Security…

Draft

WP 2018-2020
Focus Area

Focus Area 'Digitising and transforming European industry and services':

Platforms and Pilots

LEIT-ICT

- **DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories 95 M€**
- **DT-ICT-08-2019: Agricultural digital integration platforms 30 M€**
- **DT-ICT-09-2020: Digital service platforms for rural economies 30 M€**
- **DT-ICT-10-2018-2019: Interoperable and smart homes and grids 30 M€**
- **DT-ICT-11-2019: Big data solutions for energy 30 M€**
- **DT-ICT-12-2020: The smart hospital of the future 25 M€**
- **DT-ICT-13-2019: Digital Platforms/Pilots Horizontal Activities 4 M€**

SC1

- **DT-TDS-01-2019: Smart and healthy living at home 60 M€**

(LEIT-NMBP:

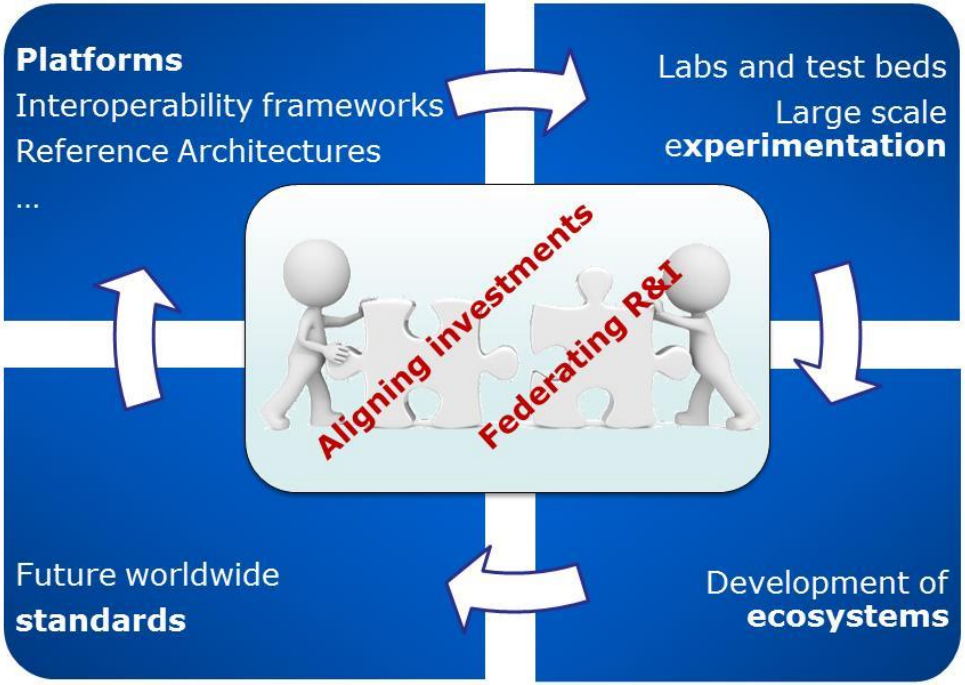
- **DT-NMBP-20-2018: A digital 'plug and produce' online equipment platform for manufacturing 20 M€)**

Leadership in digital industrial value chains

Aligning investments and federating R&I efforts from all players (industry, national initiatives and EU) on common interests around the platform economy based on European interests and values

Digital Manufacturing Platforms:

- total funding 95M€ over 2 years
- proposals up to 16 M€ considered appropriate



2018:

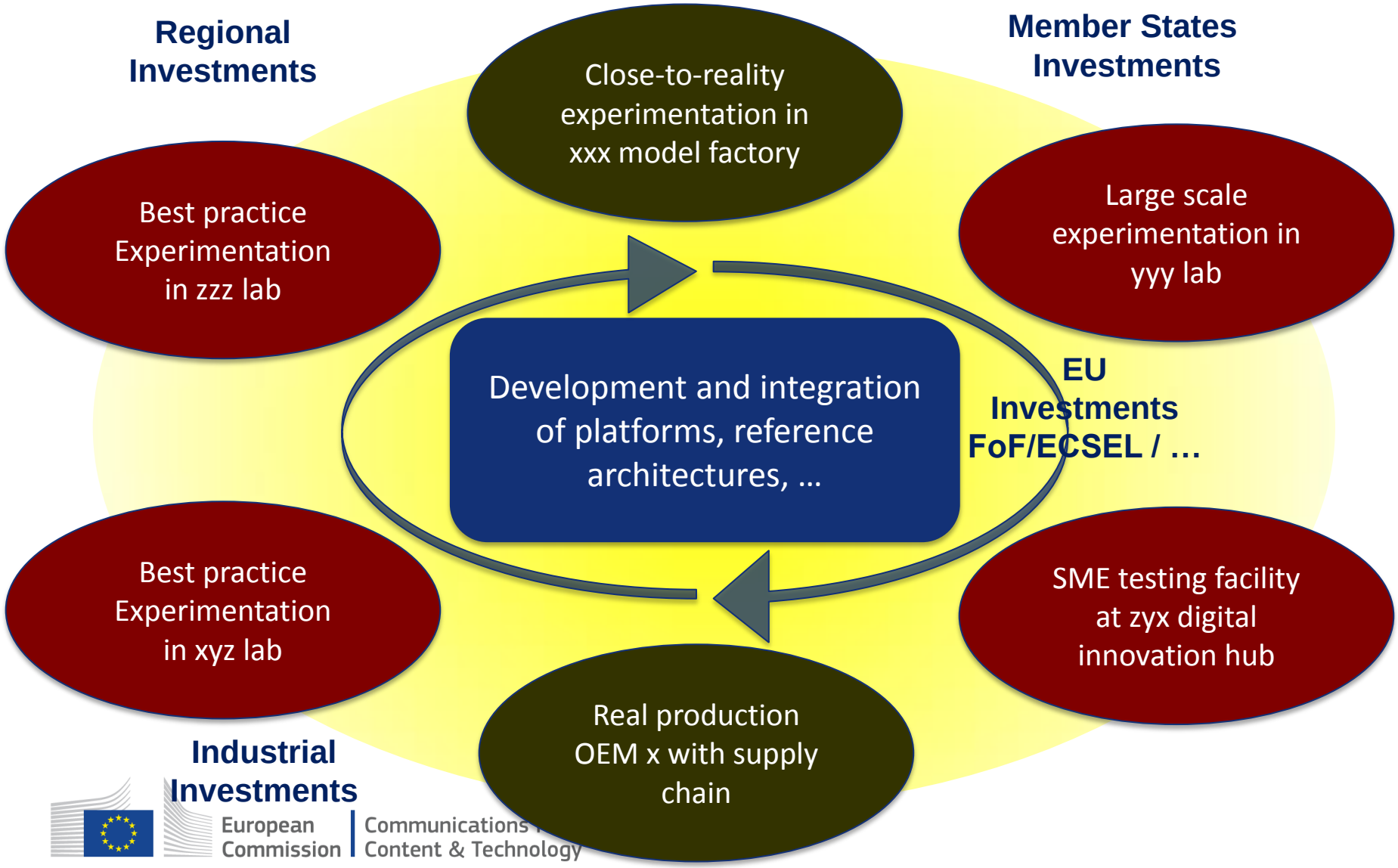
- Agile Value Networks
- Excellence – zero-defect

2019:

- Human factor
- Sustainable value networks – circular economy

Digital Industrial Platforms

Pooling Investments



Further information

- ICT Proposers' Day 2017 - Budapest, 9-10 Nov 2017
- Digitising European Industry Working Groups on Digital Innovation Hubs (1) and on Digital Industrial Platforms (2):
  https://ec.europa.eu/futurium/en/dei-implementation/library
- Catalogue of Digital Innovation Hubs
  - https://ec.europa.eu/futurium/en/content/digital-innovation-hubs-catalogue-project-0
- Mentoring project for Digital Innovation Hubs
  - https://ec.europa.eu/digital-single-market/en/news/call-digital-innovation-hubs-eu13-member-states: Open until 22 October
- Robotics Brokerage Day, Brussels, 6 December 2017

Digitising European Industry

http://bit.ly/DigIndEU

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