DRIVING EUROPE'S DIGITAL TRANSFORMATION

Strategic Innovation Agenda 2017-19

EIT Digital

EIT Digital is a leading European digital innovation and entrepreneurial education organisation driving Europe's digital transformation.

EIT Digital delivers breakthrough digital innovations to the market and breeds entrepreneurial talent for economic growth and improved quality of life in Europe. It does this by mobilising a pan-European ecosystem of over 130 top European corporations, SMEs, scaleups, universities and research institutes.

As a Knowledge and Innovation Community of the European Institute of Innovation and Technology, EIT Digital is focused on entrepreneurship and is at the forefront of integrating education, research and business by bringing together students, researchers, engineers, business developers and entrepreneurs. This is done in our pan-European network of Co-Location Centres in Berlin, Eindhoven, Helsinki, London, Paris, Stockholm, Trento, as well as in Budapest and Madrid.

EIT Digital invests in strategic areas to accelerate the market uptake of research-based digital technologies focusing on Europe's strategic, societal challenges: Digital Cities, Digital Industry, Digital Wellbeing and Digital Infrastructure. Value creation combined with an investor mindset will allow EIT Digital to develop into a sustainable organisation via diversification of its sources of income.

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Executive summary

Driving Europe's Digital Transformation

EIT Digital's mission is to drive digital innovation and develop entrepreneurial talent in order to enhance both economic growth and quality of life across Europe. Our Strategic Innovation Agenda 2017-2019 provides the framework that will guide our work to achieve this.

During this period, our focus will be to increase both our social and business impact and to leverage the value we are creating through our activities to diversify our income streams and become sustainable. By doing so we will ensure we continue to grow our influence and scale-up to maximise the opportunities digitalisation represents for Europe. We will do this by continuing to build on our key strengths.

Developing the Ecosystem

We will further develop and utilise our ecosystem. First, by consolidating and building on activities in each of our existing Co-Location Centres and Associate Partner Groups, currently in nine key European markets. At each location we are creating hubs of innovation where we bring together industry, researchers, students, engineers and entrepreneurs to collaborate on tangible activities - but also connect them with their peers across Europe.

We will also optimise our links with the wider EU-28 through our selection of best-in-class digital innovation centres to further extend our reach. And beyond Europe, we will focus on cementing our position as the leading pan-European partner creating two-way exchange for digital education, innovation and entrepreneurship between Europe and the USA via our Silicon Valley hub.

In addition to expanding our geographical footprint, our strategy will also drive the expansion of our partnership – further growing the role of business, through increased engagement with midsized businesses in our key thematic focus areas as well as with large and influential global corporations.

Accelerating European Innovation and Entrepreneurship in Key Focus Areas

We will continue to develop and drive a range of innovation activities with partners and innovative scaleups, which respond to real world market challenges. Innovation activities will be focused on converting research results to market – and structured so that they run like ventures by applying responsive and agile project management and business models.

All of our work will be themed around the four areas we see as the most challenging and that are also opportunities for Europe to take a leadership position in the global digital economy: Digital Industry, Digital Cities, Digital Wellbeing and Digital Infrastructure.

Breeding Entrepreneurial Talent via Blended Education and Mobility

Expanding our highly successful education programmes will also be a priority. We will bring our unique blend of the best of technical excellence and entrepreneurial skills and mindset to digital engineers and entrepreneurs at all stages of their careers, from graduates pursuing digital entrepreneurial education via our Master School to providing the opportunity for industry embedded, market-focused doctorates via our Doctoral School to ensure those

already working within industry are able to keep abreast of current developments and use them to help their organisation innovate and succeed via our Professional School.

Applying the developments in digitisation we support in other industries to our education offering, we will further increase uptake by delivering a wide range of traditional and online courses in a 'blended' package, meeting the growing demand for flexible yet rigorous programmes that meet the needs of the fast-paced and dynamic digital market.

The period 2017-2019 will see the organisation significantly increase its impact, creating value in financial, social and wider economic terms – creating critical mass and sufficient momentum to secure its evolution to a sustainable organisation leading Europe's Digital Transformation.

Driving Europe's Digital Transformation

The Digital Transformation

Since the turn of the century, the Internet, high-speed networks and mobile devices have permeated our world with unprecedented speed. These digital technologies lead to ubiquitous connectivity and information access that enable innovations disruptive to our industries, our cities, and more generally, our way of life. All around us, we see this digital transformation with impact on almost every aspect of our life.

Europe Needs to Step Up

While Europe played a leading role in the development and the deployment of digital infrastructure in the 1990s and 2000s, today the region is struggling to capture the value of the emerging global digital transformation. Strong, new players in the US and Asia have enabled these regions to become leaders of the digital and data-driven economy. If Europe wants to remain an important player in the digitised world, it needs to step up its digital transformation significantly. Europe has several digital 'hot spots' with a solid

foundation that includes a strong education and research infrastructure, a highly skilled workforce, and strong industries in various domains. At the same time, Europe is inherently fragmented with 28 member states, which hinders the creation of critical mass in terms of knowledge, skills, technology, investment, and markets (including digital markets) to reach its potential.

How can Europe build on its strengths?

Industry Strengthening and creating industries in the digital domain as well as digitising industries that are more 'traditional'.

Marketplace Creating a digital single market.

Society Investing in human capital through digital skills and education, adoption of labour regulations and adoption of wealth distribution mechanisms.

Only 53%
of the EU population is digitally skilled.

Digital skills

Yet 90%
of future jobs will require digital skills.

European manufacturing can achieve growth from **15%-20%** by 2030 if digitalised.

90% of large organisations will have a **chief data officer** by 2019

E-learning will **grow by 15x** over the next 10 years and reach 30% of the education market.

Driving the Digital Transition

The societal challenge of Europe's digital transformation requires a combination of technological, economic, social, and legal innovations. While the main focus of EIT Digital is on the combination of technological and business innovation, it is at the same time very well understood that successful digital innovation can only happen through deep understanding of the social and regulatory context, and in many cases, digital innovation and social innovation go hand in hand.

EIT Digital takes a unique approach to the challenge of digital transformation by focusing on innovation and entrepreneurship through deep integration of research, business and education. We are deeply convinced that without education there will be no innovation. Education drives skill development and breeds entrepreneurial digital talent. Adopters of innovations education not only teach the knowledge and skills required to put innovations at work, but also educate adopters of innovations. Only a well-educated, openminded society will be able to successfully make the digital transformation drive economic growth and quality of life at

the same time. The integration of research, business, and education leads to the combined research-driven and socioeconomic innovation required to bring the digital transformation about.

Finally, EIT Digital addresses the need for critical mass through the mobilisation of a pan-European ecosystem building on national and regional innovation hot spots. This ecosystem allows its members to seamlessly connect, build and expand across borders. This pan-European digital innovation system is unique and has meanwhile proven its effectiveness as a catalyst of innovation across Europe. The mobilisation and further development of this ecosystem is a cornerstone of EIT Digital's success in creating value for European citizens.
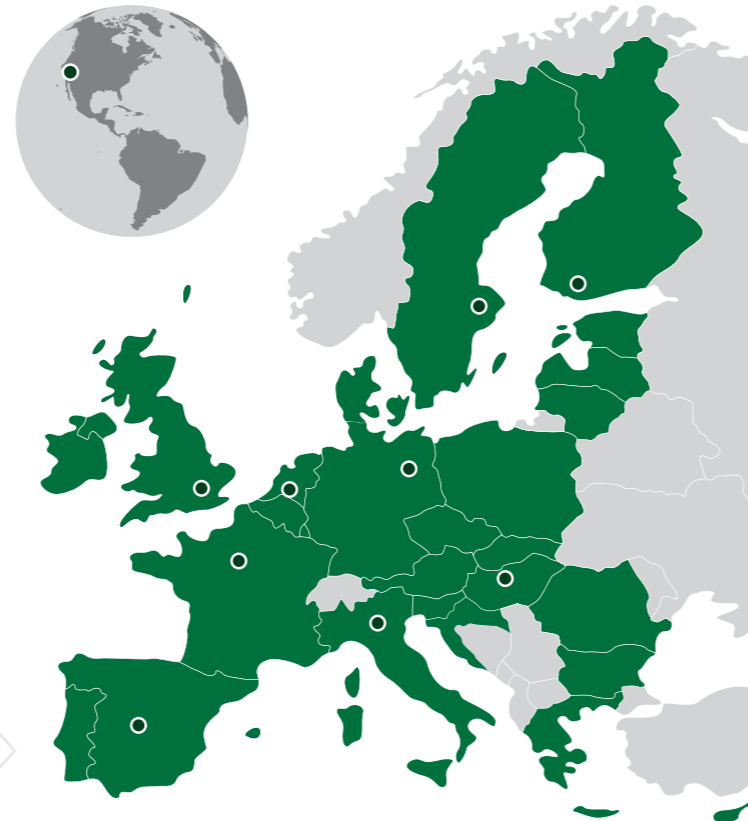
A Pan-European Digital Innovation and Education Ecosystem

SELECT **GROW** **SUCCEED**

Innovation activities

Innovation Action Lines

Scaleups

About EIT Digital

EIT Digital was created in 2009 in order to drive Europe's digital transformation. The establishment of the organisation was motivated by the fact that while Europe has excellent research and education in the digital arena, the societal impact of digitalisation needs to be significantly improved if Europe is to remain competitive in the global economy.

Our mission is to foster economic growth and enhance quality of life for European citizens. We do this by mobilising a pan-European ecosystem of over 130 top European corporations, SMEs, scaleups, universities and research institutes. We invest in strategic areas to accelerate the market uptake of research-based digital technologies focusing on societal challenges strategic for Europe. We also breed T-shaped entrepreneurial digital talent focused on innovation through a blended education strategy.

◉ EIT Digital Node/ Associate Partner Group / Silicon Valley Hub California, USA

Pan-European Ecosystem

EIT Digital seeks to unite people, organisations, and industry partners related by a common goal - enabling digital innovation - across a diverse and sometimes fragmented continent. We do this by bringing European education, research, and business actors together to create a vibrant innovation and education ecosystem where talent, ideas, technologies and investments can flow. Our role is to stimulate cross-border cooperation and pan-European reach, thereby acting as a European relay to national ecosystems.

We invest both human and financial resources in high-potential activities for the development of business and talent in Europe. We cluster our pan-European innovation and education activities into Action Lines - portfolios of thematic activities that target impactful outcomes. We execute our Action Lines within our EIT Digital Co-Location Centres and within our European ecosystem of top corporations, scaleups, SMEs, universities and research institutes.

Innovation and Entrepreneurship

EIT Digital seeks to generate significant innovations from top European research results. Our objective is incubation, market uptake and rapid growth of these innovations.

As such, we focus our investments on a limited number of innovation areas that we have selected with respect to European relevance and leadership potential – the Action Lines. Each Action Line is a portfolio of activities: on the one hand, open innovation activities carried out by the EIT Digital Partners, and on the other hand, fast-growing technology startups that are ready to scale commercially. These entrepreneurial projects are grounded in game-changing research results, high-profile technologies and disruptive business strategies.

Once the activities are selected, the EIT Digital Accelerator steps in to fully manage the innovation and entrepreneurship funnel, supporting the growth of the activities so that they become successful European products, services or ventures. In addition to coaching the business, the Accelerator helps them with pan-European Access-to-Market (customer acquisition) and Access-to-Finance (fundraising).

Entrepreneurial Education

EIT Digital stands at the forefront of human capital development in Europe, sourcing and training the entrepreneurial digital talent to drive digital innovation. The basis of our entrepreneurial education efforts combines Education, Research and Business (ERB) activities to deliver T-shaped training for our students, to acquire deep technical knowledge with entrepreneurial skills. These activities breed young technical entrepreneurs and digital leaders, and keep the existing professional workforce at the forefront of digital trends.

EIT Digital has positioned itself at the forefront of European education by creating online "blended" Innovation and Entrepreneurship education to raise quality, increase diversity and availability of the top-level content provided by its university, research institute and industrial partners. EIT Digital continues to build the brand of EIT-labelled education in close collaboration with the other EIT-supported organisations, to establish it as a recognised innovative programme in the European higher education landscape (see fig.3).
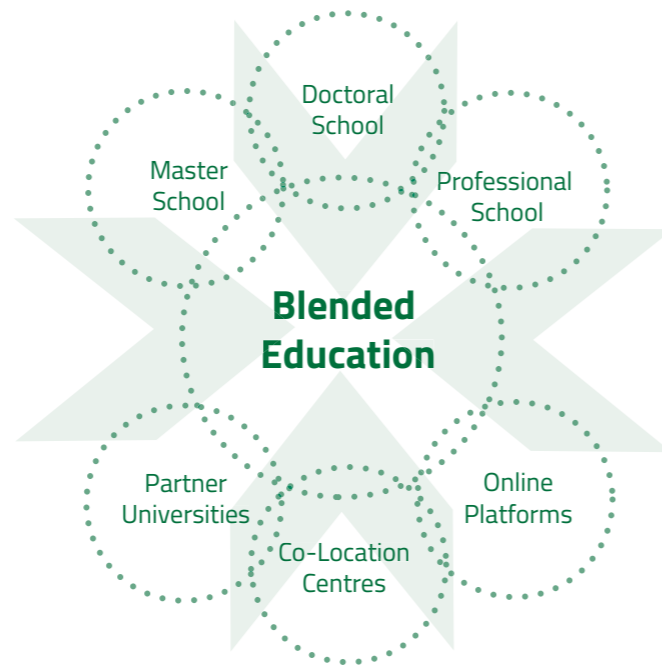

fig. 3: Blended Education

Integration of Education, Research and Business

Education, Research and Business (ERB) have traditionally taken place in silos. At EIT Digital, we believe that cross-pollination of people and activities from these three realms creates value. We bring them together in our Co-Location Centres, attractive and dynamic physical spaces teeming with a diverse mix of people and activities. Typically, a Co-Location Centre hosts innovation and education activities, scaleups that are supported by our Accelerator, students from our education programme, as well as the EIT Digital staff of business developers, communications and Node teams. In an open innovation spirit, a Co-Location Centre also hosts EIT Digital events such as meetings and business community events that are clustered into our Action Lines.

We believe that innovation is accelerated by the physical co-working of professionals with different backgrounds, from different organisations and from different countries who work in an agile way, with daily human contact, in a stimulating environment. The growth of our Co-Location Centres validates this model – in 2016, in total, over 7000 square metres are in use (see fig. 4). Business Communities also promote the integration of business and research by offering a marketplace where Innovation Activities and EIT Digital-supported scaleups present their range of products and offerings to customers, regardless of their maturity level. Accelerator-supported scaleups are also invited to join the Innovation Activities along with our Partners. Our students are exposed to all three pillars. Our Summer Schools give exposure to our Action Lines and include a strong entrepreneurship angle. Our doctoral students come each day to the Doctoral Training Centres that are hosted at our Co-Location Centres next to the innovation activities and the scaleups. We also connect EIT Digital graduates to the business organisations in our ecosystem who wish to hire

technical graduates with entrepreneurial skills and, as of 2016, we are hiring selected graduates of our schools to work at EIT Digital.

Value Creation Highlights 2009-2016

EIT Digital operations started in 2010 under the name EIT ICT Labs. Over the last six years, the organisation has consistently sharpened its strategy and its operations, with a focus on tangible outcomes. A simple, but important, example is our renaming to EIT Digital in 2015. The evolution of the name underlines our growing ambition, from a technology lab to an organisation focused on digital transformation for economic growth and quality of life.
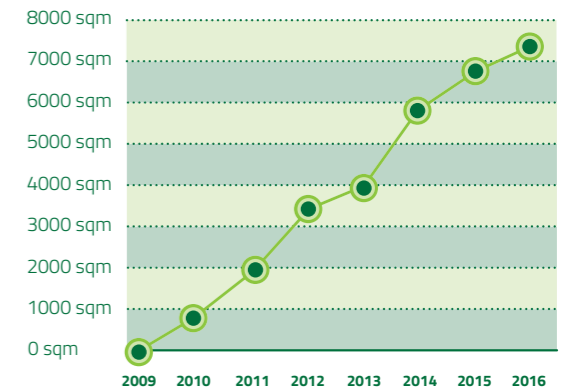

fig. 4: Co-Location Centres Evolution

Pan-European Ecosystem

The EIT Digital ecosystem is characterised by the partnership of top players in Education, Research and Business in the digital domain around a selected set of European innovation hotspots. We have grown to seven full Nodes and two Associate Partnership Groups (APGs). In addition, we are addressing the rest of EU-28 through the Outreach and Regional Innovation Scheme (RIS) programme, augmented by a hub in Silicon Valley to promote European innovation, entrepreneurship and education. The EIT Digital partnership has grown from 30 partners in 2010 to slightly above 130 partners in 2015, thereby showing the attractiveness of the organisation (see fig. 5). As can be seen above, our investment has steadily increased from €19 million in 2010 to €290 million in 2016 with a strong growing investment in business creation (see fig. 6 and 7). This shows our Budget broken down by "catalyst segments", i.e. investments related to business, ecosystem, education, and technology-driven innovation (labelled "research") tasks.
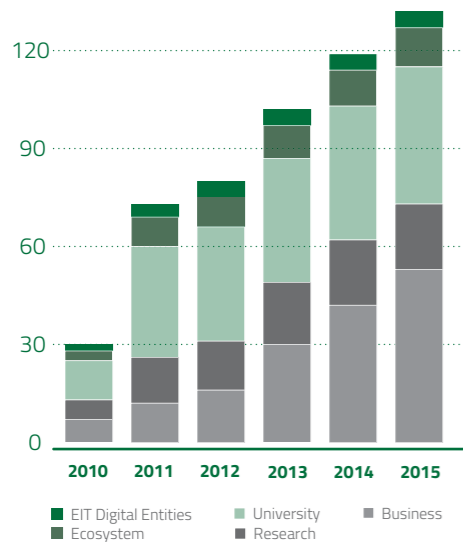
fig. 6: Investments Evolution

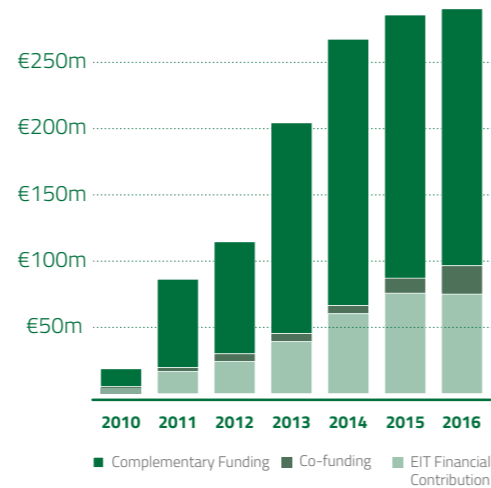fig. 5: EIT Digital Partner Community Evolution

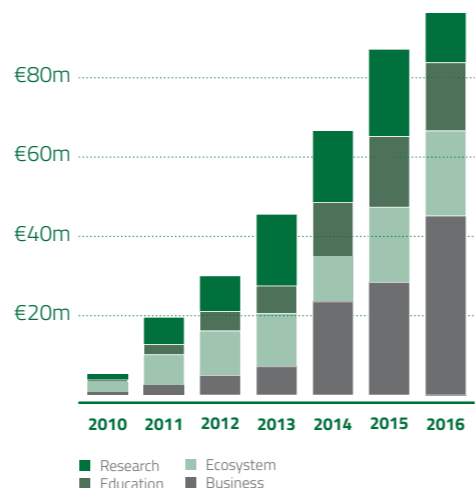fig. 7: Domain Evolution of Activities Budget

Our outreach programme, aRISe Europe, is focused on widening our ecosystem to EU-28 with an emphasis on Regional Innovation Schemes (RIS). Starting in 2014, we established contacts with best-of-breed local actors. In 2015, we revised our outreach strategy so as to improve its effectiveness, targeting local innovation ecosystems instead of individual organisations. A highly competitive call process selected six. Our Silicon Valley hub, despite having opened only in 2015, has already closed two fundraising rounds worth $14 million in total. In addition, newly established relationships in Silicon Valley have brought world-leading MOOC (Massive Online Open Course) technology and on-line Innovation and Entrepreneurship modules to our education programmes deployed in our pan-European ecosystems via our schools.

Innovation and Entrepreneurship

Innovation and Entrepreneurship activities form the heart of EIT Digital's programmes. Consequently, most of the investment over the past years has been concentrated in this area, propelling the transfer of research results into viable business, and coaching promising startups and scaleups from the areas of our Action Lines to accelerate their business growth. We have consistently increased investment in innovation year on year from €2 million in 2010 to €54 million in 2016 (see fig. 8). Our innovation activities delivered an impressive number of new products or services, created startups and spinoffs to commercialise activity results, or effected the transfer of technologies for market entry.
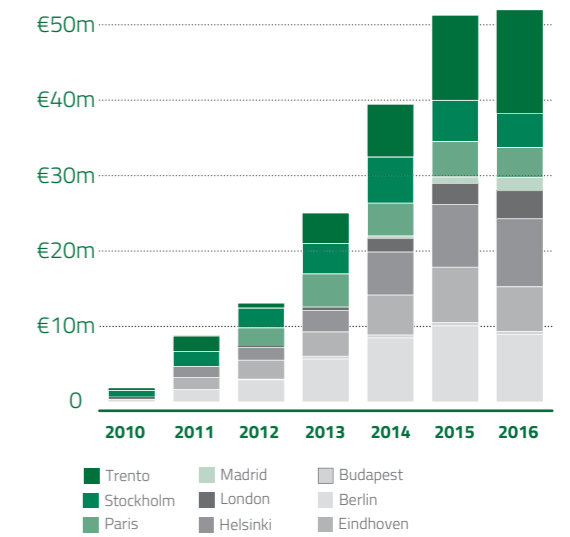
fig. 8: Innovation Activites Budget Per Node

Success Stories

Innovation Activities

- Fit to Perform is an Activity that delivers the tachograph of tomorrow, bringing the vital body signs of the driver into the fleet management systems, next to the vehicle operation data and the operating environment data in order to make professional driving safer, healthier and more efficient. The solution will be ready for large scale field trials led by Astrata and MAN at the end of 2016. The Partnership includes: Philips, TNO, University College London, Imperial College London, DFKI, Bittium and TU Eindhoven.

- 3cixty is an application that seamlessly integrates city data in everyday life, enabling people to instantaneously access rich and combined information about a city. The solution has been deployed at Milan Expo2015 and is developed by the following Partners: Telecom Italia, Thales, Fiat, DFKI, Inria, Eurecom, FAM, Universidad Politécnica de Madrid, Pole SCS, TU Delft, University College London, Cefriel and Politecnico di Milano.

- Trusted Cloud A European solution to storing digital data and content securely so that consumers and business in Europe do not have to worry about by whom and where their valuable digital assets are handled. EIT Digital partners include F-Secure, British Telecom, Telecom Italia, Ericsson, Trento Rise, Digital Catapult, IMT, VTT and CNR and a number of SMEs.

Scaleups

- Nordcloud is a fast growing scaleup company from Finland. It was founded in 2012 and it has achieved €16 million in revenue in 2015. In 2014, the company grew over 400%. A leading provider of cloud strategy, automation, and migration services that helps organisations gain the maximum benefits of the cloud. Besides Nordics, it has offices in the UK and Germany.

- Quuppa, a leading provider of real-time locating systems, with 50 retailers across the globe. Quuppa's 2015 revenues are around €1 million. In 2016, the company is set to double or triple these figures. As of November 2015, there are over 200 Quuppa systems deployed in 26 countries. In 2015, the company was selected as a Cool Vendor in Mobile and Wireless by Gartner.

- Sicoya, €3.5 million capital raised in 2015. Silicon photonics-based application: specific photonic integrated circuits (ASPICs).

- Navya, €4.1 million capital raised in 2016. Develops driverless shuttles in order to optimise the transportation of personnel, visitors or service agents on the last miles.

The EIT Digital Accelerator's mission is to scale up European digital ventures. By the end of 2016, the Accelerator will have supported around 260 companies.

Revenue and valuation growth of the top 30 percent of the scaleups of this portfolio is anticipated to be higher than 240 percent. The estimated valuation of all scaleups admitted to the EIT Digital Accelerator programme will cross the €1.5 billion mark and they will collectively employ more than 3,400 people. This data is based on 155 companies who have shared the relevant data with EIT Digital, and extrapolated for the remaining companies (see fig.9).

EIT Digital's Access to Finance team has over the years, established close relationships with approximately 100 venture capital and corporate venture organisations in Europe. Since 2012, the team has used these connections to help 73 companies raise a total of €55 million. In 2015, alone €22.7 million in equity financing was raised for EIT Digital.
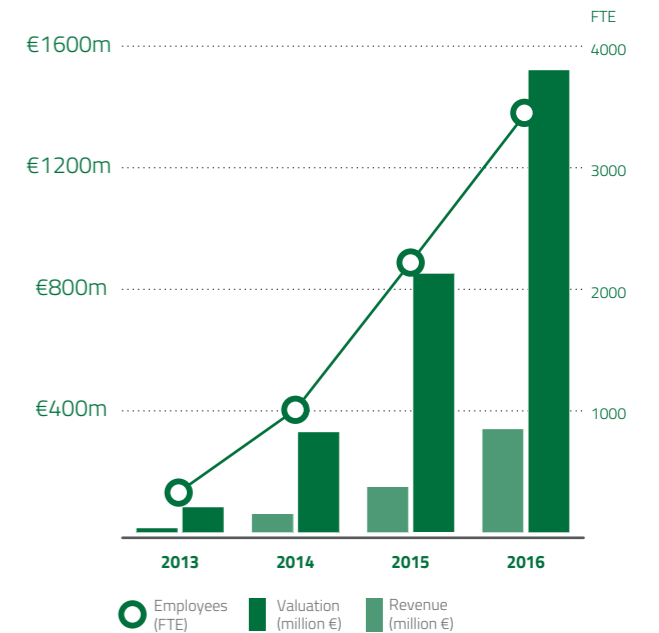

fig. 9: EIT Digital scaleup portfolio

Entrepreneurial Education

We have consistently increased investment in entrepreneurial education year on year (fig.10). This investment has resulted in clear outcomes. We have graduated 200 T-shaped engineers with fully integrated technical, innovation and entrepreneurial skills and competencies. We have also granted the first industrial doctorates to students who graduated with a high-level academic thesis and integrated business development experience, gained through company internships, (for an overview of the total number of students who have passed through our Masters and Doctoral Schools see fig. 11 and 12). We launched a Master MOOC on "Internet of Things through embedded systems", which is a global first. Finally, our pan-European professional educational programme is fully blended online to teach digital skills to individuals and companies in their desire to enhance careers and digitally transform European industry and society.
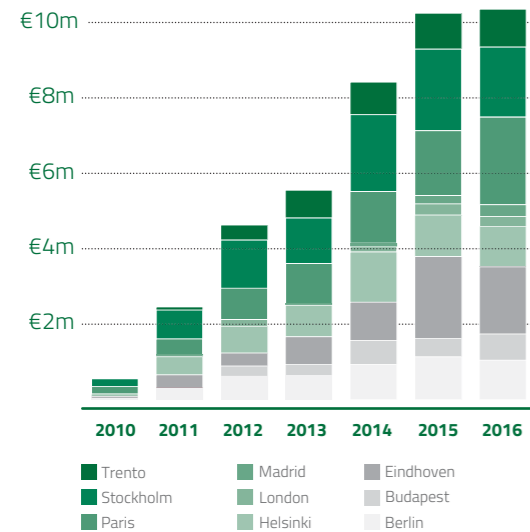

fig. 10: Education Activities Budget by Node (excluding scholarships)

Legend (fig. 10):
- Trento
- Stockholm
- Paris
- Madrid
- London
- Helsinki
- Eindhoven
- Budapest
- Berlin

EIT Digital
Doctoral School

EIT Digital
Master School
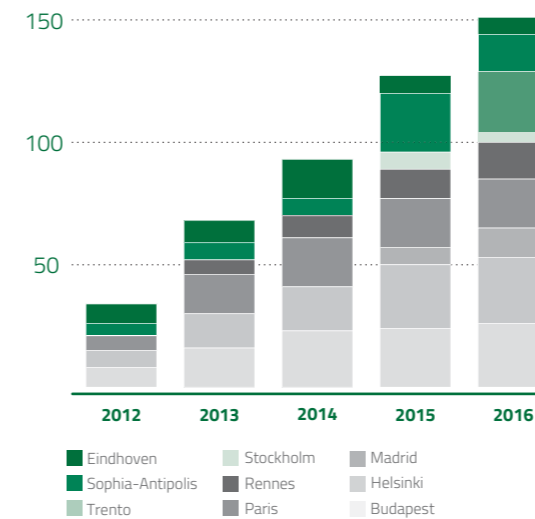
fig. 11: No. Doctoral Candidates (Total, Cumulative)

Legend (fig. 11):
- Eindhoven
- Sophia-Antipolis
- Trento
- Stockholm
- Rennes
- Paris
- Madrid
- Helsinki
- Budapest
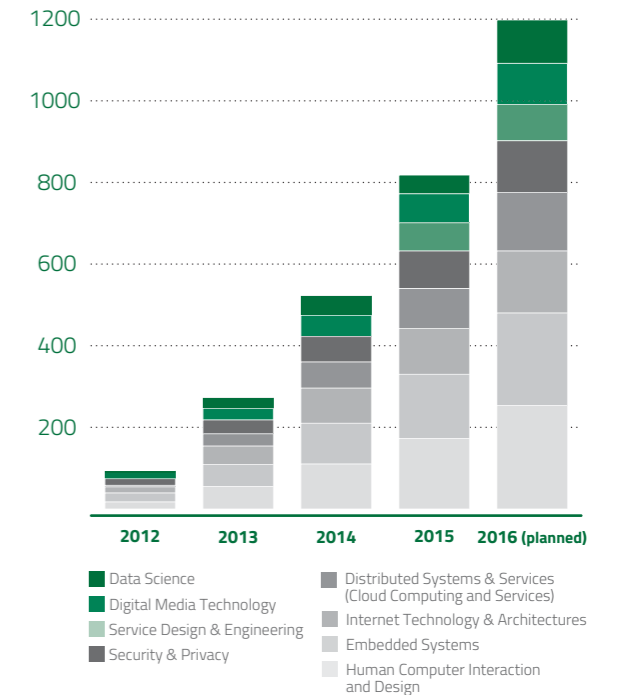
fig. 12: No. Masters Students (Total, Cumulative)

Legend (fig. 12):
- Data Science
- Digital Media Technology
- Service Design & Engineering
- Security & Privacy
- Distributed Systems & Services (Cloud Computing and Services)
- Internet Technology & Architectures
- Embedded Systems
- Human Computer Interaction and Design

Priorities for a Digital Europe

Attractiveness of our Pan-European Ecosystem

As we look forward to the next three years, the EIT Digital ecosystem is starting from a position of strength. At the beginning of 2016, we gather over 130 of the top European players in Education, Research, and Business in the digital domain. These are now tightly connected with seven full Nodes and two Associate Partnership Groups and addressing the whole of EU-28 through the outreach programme. This European ecosystem of innovation hotspots is also linked to the USA through the EIT Digital Silicon Valley hub. The ecosystem will be further strengthened in the coming years, specifically on the aspects described below.

Strengthening of our industrial footprint

Towards 2019, EIT Digital will further improve the commitment of industrial partners who are endorsing our open innovation principle – by emphasising mid-size companies. Existing business contacts with the core partners will be strengthened at executive level.

New prominent industrial partners will be attracted in each Node. To increase impact and market penetration, application partners and partners from outside the digital industry and the end-user community will also be involved.

Cross-pollination and agility at our Co-Location Centres

Our activities are organised physically in and around our Co-Location centres, where students, researchers, engineers, business developers and entrepreneurs come together to drive the digital transformation of society. Our Co-Location Centres are at the heart of our organisation and in the coming years we will intensify their use through increased execution of education and innovation activities in these Centres.

Engaging EU-28

One of our objectives is to strengthen Europe's innovation capacity by extending the EIT Digital approach and innovation funnel intake to selected Digital Innovation Centres in the EU-28 states.

Our outreach programme, under the name of aRISe Europe, is focused on widening our ecosystem to EU-28 with an emphasis on Regional Innovation Schemes (RIS). Since 2014, we have established contacts with best-of-breed local actors. We stimulate the best talents to apply for our education programmes and we provide selected ones with specific support. Since 2015, we have revised our outreach strategy so as to improve its effectiveness, targeting local innovation ecosystems instead of individual organisations. Six such Innovation Centres were carefully selected in 2015. Towards 2019, we expect to go as far as doubling this number; however, our success measure will not be the number of Digital Innovation Centres but the quality of the engagement and the subsequent value that the engagement creates.

Serving Europe through connection to Silicon Valley and beyond

The aim of the Silicon Valley Hub is to reinforce the connection between Europe and the USA through two-way mobility of talent, collaboration on research and innovation initiatives, and boosting the growth of EIT Digital accelerated businesses. The Silicon Valley Hub is tightly connected to ongoing EIT Digital activities. In 2016, it directly contributes to the outputs of ten activities. The Silicon Valley Hub also connects national efforts of trade and scientific missions, accelerator programmes of different member states in the area, and actively promotes One Europe in the Bay Area. By 2019, we plan to significantly grow in impact and visibility, making EIT Digital the recognised pan-European driver for education, innovation and entrepreneurship in the United States.

Regarding other global innovation hotspots, such as Singapore, Tel Aviv and Tokyo, EIT Digital will not have a proactive expansion strategy, but will evaluate collaboration opportunities on a case-by-case basis.

Key Areas in Innovation and Entrepreneurship

Our strategy aims to bring digital innovations to the market and breed entrepreneurial talent for economic growth and improved quality of life in Europe.

Societal, Economic and Technological Trends

We strategically align our investments in innovation and entrepreneurship for bigger impact and alignment with new societal, economic and technological trends, as well as the generally increasing integration of digital technologies.

Societal / Economic Trends	Technological Trends
• Digital transformation	• Internet of Things
• Sharing economy	• 3D printing
• Urbanisation	• Big Data
• Resource scarcity	• Artificial Intelligence
• Resource abundance	• Intelligent autonomous systems
• Demographic change	
• Global economic power shift	• Virtual and augmented reality
• Privacy	• Cybersecurity
• Economic imbalance	• Quantum computing
• Pressure on education	• Green computing
	• Blockchain

fig. 13: Trends shaping the future of the digital economy.

Innovation Action Lines

We are focusing our investments in four Action Lines.

These Action Lines define the topical headlines of all of our activities, whether these are technology-driven innovation activities, or business acceleration in our startup portfolio. We have identified three vertical areas and one horizontal area impacted by the digital transformation (fig. 14):

- Digital Industry acknowledges that the journey from production to retail is seamless – e.g., disruption introduced by 3D printing.
- Digital Cities is about making urban life easier.
- Digital Wellbeing is about being informed on wellbeing.

- Digital Infrastructure is a horizontal action line. It brings digital technology to you as a service.

Next to the above Action Lines, we are constantly monitoring societal and technological trends in order to act on new opportunities. This may lead to the exploration of certain areas in a kind of incubation mode that could potentially grow to become an Action Line if there is enough traction and success in the market. For 2017, Digital Finance is identified as such an exploration area.

We adopt an integrated funnel of research-based innovation activities and fast-growing scaleups. These entrepreneurial ventures feed our four Innovation Action Lines (Fig. 15).

Digital Industry
Digitised factory, blended retail, personalised products, integrated data-driven process

Digital Cities
Autonomous transportation, open data and city analytics, real/virtual city exploration, safety of the citizens

Digital Wellbeing
Preventing and coping with physical and cognitive impairments

Digital Infrastructure
The infrastructure itself, convergence of computing and networking; integrated cybersecurity and privacy; built-in intelligence
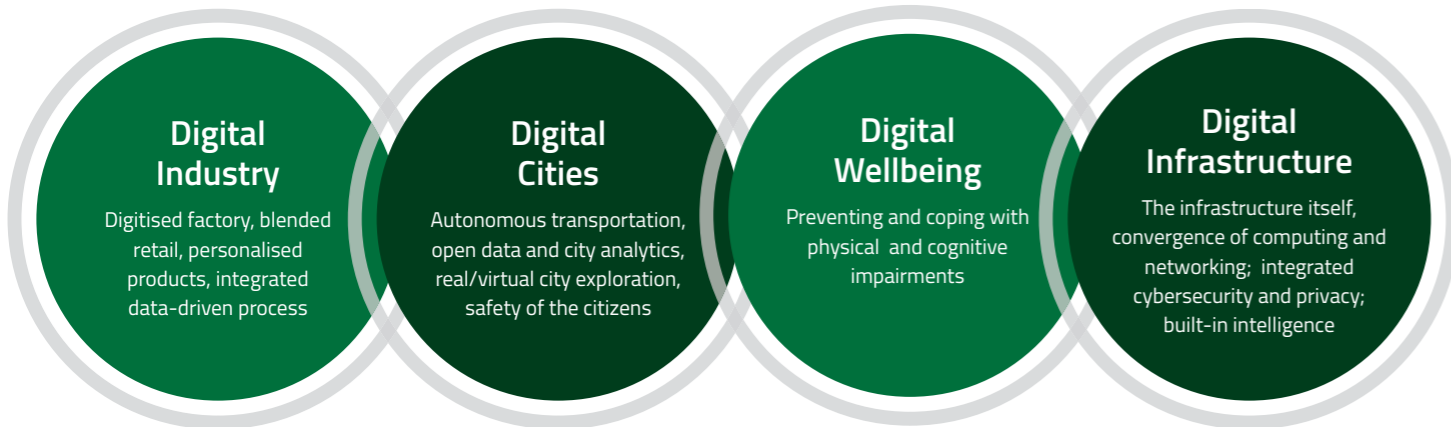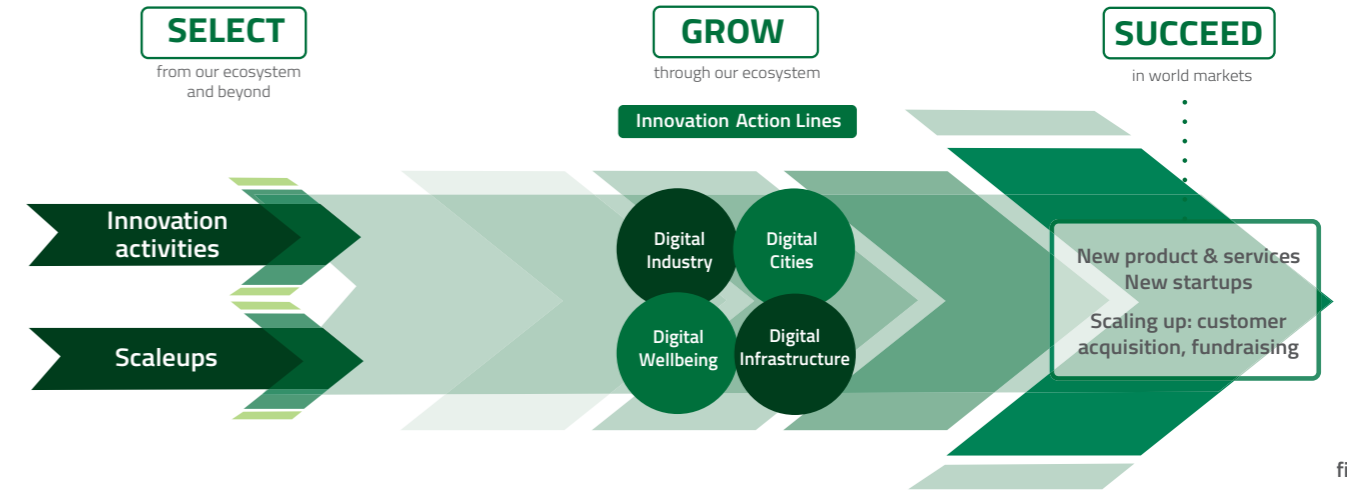
fig. 14

fig. 15

Innovation activities enter our innovation funnel once they have been selected from proposals by partner consortia. Selection criteria are mainly sufficient technological maturity, clear market focus and excellence of the team that needs to include a defined business champion who acts as the owner of the product or service. The outcome of an activity should be a new product or service offering that is brought to market either by a business line of one of the existing partner organizations, or by creating a startup or spinoff that can act independently. In order to achieve the required focus and speed of the development, we typically use the scrum approach to project management and follow the "minimum viable product" (MVP) philosophy. In summary, we run our activities like a venture, with the clear intention of achieving a sizeable return on the investment made by EIT and our partners.

Our business accelerator sources the startups it coaches from the spinoffs and startups created in innovation activities of the Action Lines or from outside of the partner ecosystem through competitions. Startups admitted from the to the portfolio need to operate in the topical areas of the Action Lines and show a clear growth potential. By integrating the business acceleration and innovation creation activities in a joint funnel, we create an agile and dynamic network of opportunities. We stimulate the exchange between the innovation activities of our established partner companies and the startup and venture capital scene (in our Action Line oriented business communities).

In our Summer Schools students get first hand and pragmatic exposure to this entrepreneurial network, creating opportunities to hire talent and for students to create their own businesses. The products and services created by our innovation activities, the startups that have been coached in the EIT Digital Business Accelerator, and also the students that passed through our education activities leave our funnel ready to succeed in the digital economy.

Digital Industry

The Digital Industry Action Line covers the seamless process from production to retail and the related supporting functions such as logistics and consumer engagement. The mission of the Action Line is to improve efficiency in production and retail, to better address customer needs, and to help save natural resources in manufacturing and logistics. Within this value chain, a large amount of data and knowledge is produced and shared. This data has an increasing share of the value of the whole business domain.

Main Challenges

With digital transformation, the manufacturing industry is faced with new technological opportunities and business models. The availability of customer (B2B) and consumer (B2B2C) data has opened new ways to organise production, logistics and delivery, and offers more means to serve consumers. The retail sector is also changing fundamentally with the rise of e-commerce, changes in consumer demographics and habits, consumers' access to information and alternatives, and globalised markets.

Mass production needs to be made highly flexible, individualised and resource-friendly to be able to serve the "long tail" of the customer markets. In general, production needs to be monitored and controlled in real-time to reflect dynamically changing customer demands. At the other end of the chain, real-time or "near-time" consumer trends and needs are collected with increasing levels of granularity. In this chain or network of actors, big data is produced, traded and shared. An increasing share of the value of the whole business domain is contained in this data.

Consumers are also increasingly aware of and interested in environmental and ethical aspects of products and production as well as pricing and product alternatives. Consumer emotions, peer views and preferences influence the economic balance on markets

faster and also create more sophisticated market opportunities for highly specialised products.

Approach

The Action Line targets value creation from big data collection, aggregation, analysis and visualisation services (and their enabling technologies) for decentralised production management covering the complete product lifecycle: design, simulation, production, operation, consumption, maintenance, and consumer relationship frameworks.

Value creation may also be achieved from dynamic and flexible omnichannel solutions for all kinds of commerce – physical, online or blended – which enable the seamless consumer experience in exploration, in choice of products, payment and delivery, as well as collection and analysis of consumer trends and insight for logistics, retail operations and customer relationship management.
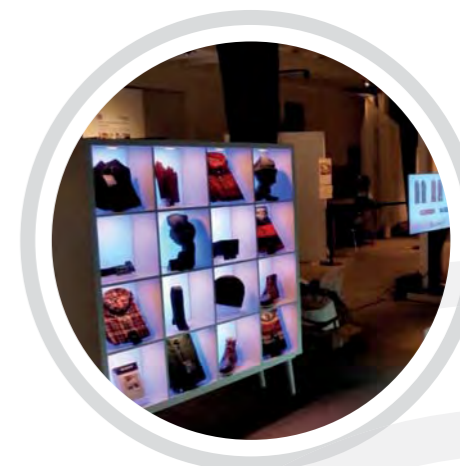
Nature of Activity Portfolio

The portfolio will include solutions that create new data and knowledge about production status on the factory floor, in operations of decentralised production, in production planning, and in alternatives for logistics. Data can be collected real-time from connected products in the field, from online and physical stores and any consumer touch points, and directly from consumers.

The growth of new shared or proprietary information opens opportunities for more vibrant data markets, where data portability between systems and organisations (manufacturers, retailers, related service providers) needs to be solved technically (e.g. with standards), and commercially with appropriate business models.

The Action Line addresses solutions that combine information from the whole bottom-up chain from consumption trends and customer needs to manufacturing and logistics.
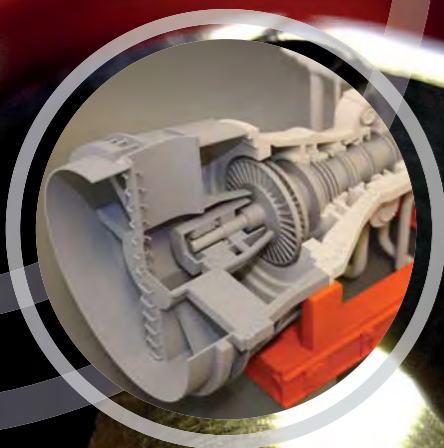
Finally, new services are needed for integrating tools, cyber security solutions and other services for manufacturers, as an integrated engineering environment covering the product lifecycle. The new services should also address marketing, purchase and consumer engagement tools for retailers in an omnichannel environment with various consumer touch points.

Digitised factory, blended retail, personalised products, integrated data-driven process

Digital Cities

The Digital Cities Action Line leverages the digital transformation of the cities through centralised, participative and collaborative interactions between city actors: government, city service providers, industry, and citizens. This transformation enables the deployment of disruptive information, mobility and safety services in the cities.

Main Challenges

By 2050, the global urban population will rise by 75 percent to 6.3 billion (that will be two thirds of the world population). The challenge of developing and maintaining attractive, inclusive and safe urban environments needs to be met on multiple fronts. Mobility, safety and information are key areas that are affected. They are detailed hereafter.

The demographic, geographical and financial limitations to deploy efficient and cost effective public transport will drive the emergence of solutions for a clean, quiet, stressless and cost effective mobility. Mobility as a service integrates public, private, peer-to-peer, conventional, decarbonized, or autonomous transport means in seamless door-to-door mobility services. It will benefit from the increasing openness of citizens to participate in a sharing economy and developments in autonomous transport. Alternatives to physical mobility may be offered, e.g. with proximity hyper-connected working spaces.

Augmented and virtual reality will provide city planners and tourists in situ with valuable added information about the past and potential future of city sights.

Developments around Big Data will have a special significance for cities and citizens. Besides their traditional role of open data operator, cities need to develop a new role in organising the urban information framework and creating a new informative ecosystem. Big Data analytics and artificial intelligence, acting on data created by

Internet of Things (IoT) sensors and open data, will result in the emergence of new business actors. Examples include semantic data browsing, data brokerage, and trusted services between data providers and customers. Hyperlocal services and local internet networks will develop proximity relations between citizens, city governance, local associations, and retail networks.

A key factor for the attractiveness of a city is the safety of its citizens and visitors. Safety of a city and resilience to unplannable natural events (e.g. heavy weather) or man-made events (e.g. terrorist attacks) needs to be improved at many different stages: analysing threats and risk occurrence, designing mitigation strategies, training, and prediction of potentially hazardous situations, etc. Traditional centralised systems need to be enhanced with citizen participation and collaboration and include recording of events and data for post-event analysis and future improvement of processes.

Approach

Mobility, information and safety are the anchor points for innovations driven by the Action Line. A multidisciplinary approach including service design, urbanism, and social sciences is used to provide an accurate understanding of the concrete problems cities are facing, and the means to overcome these, in particular by developing sustainable business models.

Mature technologies will be used to allow a quick deployment on the market for new services addressing the problems identified by cities regarding the challenges explained above. These will have to provide clear differentiators and to allow iterative improvement of user experience. To take commercial positions quickly, they need to be ready to be placed on the market as beta versions.

Nature of Activity Portfolio

Activities will be proposed based on the real and concrete issues European cities or regions are facing, in the area of mobility, urban information or safety. They should accelerate the transition to more attractive, resilient, inclusive and collaborative cities and scale up information, mobility and safety services. Business models must be clearly identified and scaling up scenarios must be assessed to make the innovative products and services attractive to future investors.

The development of active mobility associated with the reduction of particles pollution will improve public health and will decrease transportation stress. Less time spent in the traffic will improve general economy productivity. Autonomous vehicle services will improve road fatalities and will reduce accordingly insurance costs and impacts on social care. Mobility services will be more cost effective than owning multiple vehicles. Improving resilience of cities will decrease the impact cost and the fatalities due to hard to predict or random occurrence events. Startups will be created to manage the new mobility, informational and safety services.

Autonomous transportation, open data and city analytics, real/virtual city exploration, safety of the citizens

Digital Wellbeing

Slowing down the growth of healthcare expenses while maintaining the quality of life during the working life and at higher age is the focus of the Digital Wellbeing Action Line, through prevention of and coping with mental and physical conditions. Ageing, working longer, and living longer unfortunately do not imply that there are also more healthy work and living years. The result is a strong increase in occupational and individual healthcare costs.

Main Challenges

The main challenges are finding effective means for lowering the demand for cure and long-term care and adding two more working years and two more years of independent living with a maintained quality of life. While our focus is the individuals outside of the hospital, this approach is essential to keep healthcare systems sustainable since it significantly reduces the projected cost increase due to the ageing population. A secondary challenge is to identify solutions that are acceptable to the users from the usability and data privacy perspective. Last but not least one needs sustainable business models for the payers in the healthcare system that allow a large scale deployment of solutions.

Approach

The Digital Wellbeing Action Line leverages digital technologies to stay healthy (prevention and early detection) or cope with an existing chronic condition. Both physical and mental wellbeing are considered. The solutions generally rely on enabling consumers to be well-informed about their wellbeing and to be able to use digital instrumentation to monitor and improve their quality of life, according to the motto "an ounce of prevention is worth at least a pound of cure".

The development and introduction of products (unobtrusive sensors and actuators and associated software services) targeted at occupational and private health and fitness is the approach to tackle these challenges. The clear focus is on measures supporting prevention or secondary care for both physical and cognitive/mental impairments. Close cooperation between the diverse stakeholders and field trials are needed to ensure that solutions are feasible from a market perspective.

Nature of Activity Portfolio

The innovation activities will focus on the prevention of and coping with both cognitive/mental conditions and physical conditions: preventing or delaying the onset of these conditions as well as solutions which help those who need to cope with these conditions in a better way. Digital quantification and innovative measurements and monitoring of body signals through sensors is the way to approach this. Correlation of diverse data sources in a "Big Data" approach is seen as important to get more relevant results. As the collected data is sensitive, the design of privacy-aware systems is equally important. Activities that delay the onset of physical and cognitive/mental conditions or cope with these conditions in a social context are considered as a triple win.

Preventing and coping with physical and cognitive impairments

A key element is the convergence and integration of the above technologies to support a diverse set of applications (e.g. the Internet of Things) and to drive the digital economy overall.

Main Challenges

Digital Infrastructure is not only a necessity for all application areas and vertical segments but the sector itself is creating jobs and major opportunities for Europe and business and society at large. Europe needs to stay in the lead in the areas where it is currently strong (e.g. 5G) and improve its competitiveness in the digital economy where it is increasingly facing global competition. The challenge is to provide converged core enabling functions to support breakthrough innovations and efficiency improvements in vertical industry segments like e.g. utilities, manufacturing, and health as well as to enable new business models.

Digital Infrastructure

The Digital Infrastructure Action Line is the core enabler of the digital transformation by providing secure, robust, responsive and intelligent communications and computation facilities. More specifically, it targets in networking: the mobile broadband infrastructure, network softwarisation, and the Internet of Things; in computing: cloud computing, Big Data, and Artificial Intelligence; in security: privacy, cyber security, and digital ID management.

On the infrastructure level, this requires:

1. Scaling up the capacity in the access network
2. Making use of Software Defined Networking (SDN) / virtualisation to break open the impasse in the network backbone to provide new and more advanced functionality
3. Better integration of the Internet of Things (IoT) into the current networking and computation stacks
4. Solutions to process and extract value from the massive amounts of data generated
5. Security and robustness of infrastructure and application components to resist cyber-attacks
6. Ensuring privacy of personal data and identities.

Finding answers to these challenges is crucial not only for the providers themselves but also for all vertical segments and society at large relying on the digital infrastructure.

Approach

A key aspect of the Digital Infrastructure Action Line is to catalyse cooperation across the networking, computing and security domains. This will create added value by the deep integration of technologies that typically are only very loosely coupled. Distributed cloud solutions that are secure and privacy aware for real-time processing based on close integration of networking, computing and security will support new industry segments that are latency sensitive, such as the automotive industry or process industry segments.

The infrastructure itself, convergence of computing and networking; integrated cybersecurity and privacy; built-in intelligence

Key Areas in Entrepreneurial Education

We are witnessing a disruptive change in higher education due to economic, societal and technological trends. Higher education is transforming from an academic vocational learning for a labour market that requires STEM (Science, Technology, Engineering and Math education) and digital skills to a cross-stakeholder education where digital knowledge and understanding serves as the base in all sectors.

In Europe and the USA, GNP growth and innovation rates are down, mean company lifespan is getting shorter and salaries are stagnating. In sectors where there is economic growth, 60 percent is due to a higher rate of innovation coupled with business creation. Innovation creates new jobs but can make others obsolete. New jobs typically demand better and differently educated people with new competencies. Digitalisation also has significantly influenced education. As a technology enabler, it changes how education can be delivered. Furthermore, digital consumer experiences shape students' expectations on how education should be delivered.

EIT Digital has positioned itself at the forefront of these developments with our three Innovation and Entrepreneurial Schools: the Master, Doctoral and Professional Schools. EIT Digital is also a pioneer in creating blended Innovation and Entrepreneurship (I&E) education to raise quality, diversity and availability of top-level content provided by its university, research institute and industrial partners. EIT Digital continues to build the brand of EIT-labelled education in close collaboration with other Knowledge Innovation Communities (KICs) to establish it as a recognised innovative programme in the European higher education landscape.

The Role of Entrepreneurial Education

Today, innovation is estimated to drive two-thirds of increased productivity, and digitisation is the main technology driver for innovation and productivity in almost all industrial and societal sectors. In the various industry and education sectors, digitisation creates new work and business models resulting in an increase of efficiency and productivity scale up not seen earlier in modern history.

Innovation and Entrepreneurship Education

After the mass production and one size fits all model of the previous century, industry realised that bringing new products to market was as important for profit as a lower cost-per-unit production. Industrial leadership now needs to not only master technology but also understand marketing, selling and customer-centricity. This means engineers now need to learn economics. Today, industrial leaders must integrate digital technologies with cross-disciplinary innovation and entrepreneurship (I&E) and 'soft' skills if their company is to succeed in the global marketplace. Companies recognise this and have revived their interest in

hiring people with integrated digital and I&E competencies. EIT Digital is leading the development of T-shaped engineers and T-shaped researchers for innovation, entrepreneurship and entrepreneurial leadership.

The increased role of innovation in economic and societal growth has led to a dramatical increase in interest in learning how to innovate and become an entrepreneur. Furthermore, there is an acceptance that I&E skills can be taught and learned. New formal and informal ways to teach and learn I&E skills are being developed including pedagogical methods based on learning-by-doing.

A standard set of I&E competencies was once seen as adequate but this is no longer the case. Now EIT Digital enables students to design an individual I&E profile for their job prospective through blended learning offering I&E modules and courses that cover a wide spectrum of I&E competencies.

Online Education

EIT Digital currently has a repository of near 40 I&E modules and courses. In the future, our online repository will be as an important learning resource as text materials.

EIT Digital will produce two types of online education: stand-alone MOOCs that can be used to reach a global audience as well as small and private MOOCs for the digital transformation market where thought leaders and industrialists can share and learn new findings.

EIT Digital Master School

Breeding T-Shaped entrepreneurial Innovators

Purpose

The EIT Digital Master School aims to train T-shaped professionals with state-of-the-art technical excellence in key digital technology areas combined with strong expertise in innovation and entrepreneurship. Our goal is to establish a world-renowned Masters level education brand.

Motivation

The European market has a strong demand for Masters level engineers who can drive innovation. The EIT Digital Master School is the first systematic effort on a pan-European scale to combine technical education at Masters level with training in innovation and entrepreneurship and at the same time promoting mobility.
The graduates are Europe's next generation of digital technology entrepreneurs, who will boost our innovation rate and address our societal challenges, especially in the areas of digital cities, digital industry, digital wellbeing and digital infrastructure.

The involvement of leading European universities as EIT Digital partners ensures excellence and supports brand building.

Value Creation

The EIT Digital Master School is increasing enrolment in a linear fashion. By 2019, we expect to admit 800 of 2500 applicants for the blended Master programmes. All courses will be delivered in blended format across all of the partner universities in Europe. We are also establishing a MOOC format for four programmes, which can scale up easily. For 2017, we anticipate 10,000 students viewing the offered courses and 200 completing them. We will also offer EIT-labelled certificates for those who complete four of our MOOC programmes.

We are targeting an intake of 50 percent students from Europe in 2017, up from 35 percent currently. We also plan our diversity percentage to increase from 25 percent women currently to 35 percent by 2017.

*By 2019, we expect to admit 800 of 2500 applicants for the blended Master programmes.*

EIT Digital Doctoral School

Breeding entrepreneurial digital talent
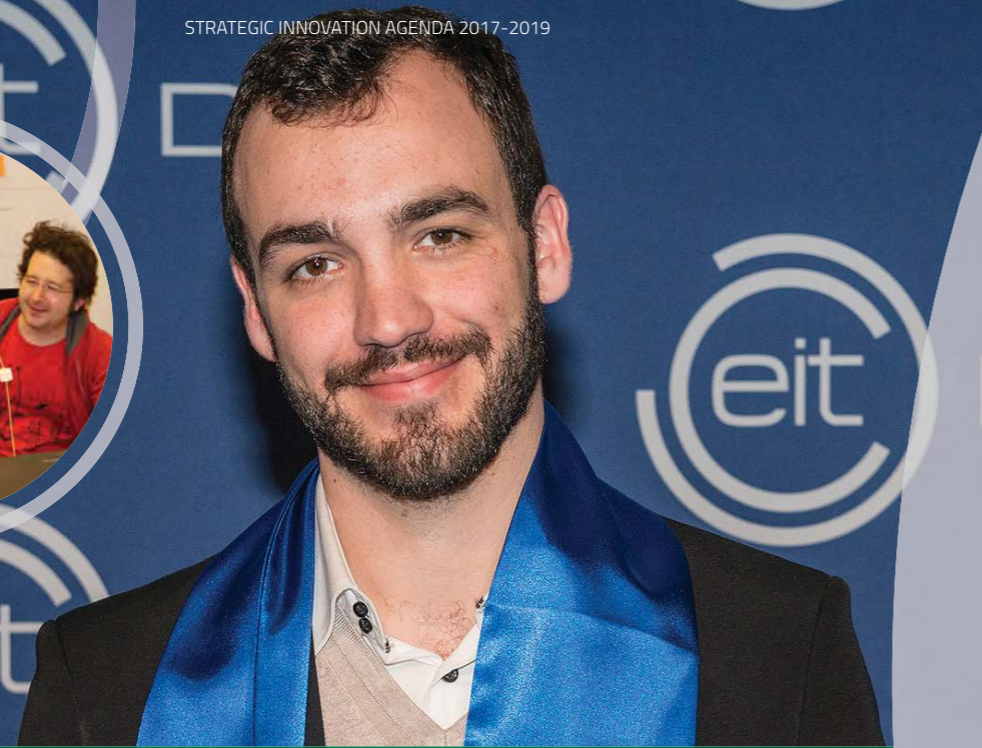
Purpose

The EIT Digital Doctoral School aims to train world-class digital technology leaders with deep technical experience combined with a strong background in innovation, entrepreneurship and business transformation. Our goal is to establish a world-renowned doctoral level education brand.
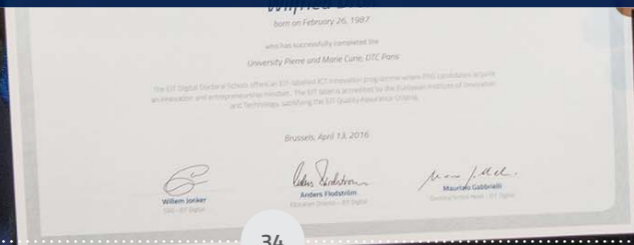
Motivation

More than two thirds of all PhD graduates in STEM fields eventually end up working outside of academia, primarily in industry. Most current doctoral programmes do not address this eventuality. We believe that a new model—a properly designed "industrial doctorate" education—would increase industrial disruptive innovation and also create a new generation of industrial leaders equipped with a vision of business transformation based on an understanding of frontline technology.

Tomorrow's digital technology leaders will increasingly be employed outside of the core digital technology sector. Therefore, they should have a truly entrepreneurial mindset as well as hands-on innovation experiences. The EIT Doctoral School provides a unique opportunity with its emphasis on innovation and entrepreneurship (I&E) as well as pan-European mobility. Our Doctoral School complements traditional PhD education with "learning by doing" I&E skills and mechanisms for business transformation.

Value Creation

The sustained focus of the EIT Digital PhD education added value is the development of strong and hands-on I&E skills in addition to targeted digital technologies. The I&E skills thus become embedded with the deep knowledge of digital science and technology characteristic of a traditional doctorate, making our graduates valuable on the labor market. The mandatory half year industrial Business Development Experience (BDE) internship after the academic PhD exam will be changed to a continuous industry-driven involvement in projects over the course of the full PhD education.

Doctoral Training Centres (DTCs) will strengthen their role and importance as locations where interaction with the industrial and university partners takes place at a crossroad with the EIT Digital Accelerator ecosystem. In this way the role of a DTC will evolve from education-oriented to become an innovation tool within the EIT Digital innovation ecosystem.

By 2018, the Doctoral School will have 250 students, with a global mix of top talent making EIT Digital a competitive choice. Drawing also on sources like the EU MSCA programme, especially the European Industrial Doctorates of the Innovative Training Networks (ITN EID), we intend to give scholarships directly from EIT Digital to students who will be able to work specifically on projects arising from the EIT Digital innovation ecosystem.

By 2018, the Doctoral School will have 250 students, with a global mix of top talent , making EIT Digital a competitive choice

EIT Digital Professional School

Purpose

The EIT Digital Executive School aims to enhance the skills and competencies of Europe's professionals, executives and decisionmakers via blended learning packages of technology updates with peer education. The offerings combine university level content and online modules with hands-on skills building and certification, to establish a world-renowned professional education brand.

Keeping executives at the digital frontier

Motivation

Professionals at all levels regardless of whether they work directly in a digital technology field or in another sector need to stay current in digital technologies. Companies and organisations need to learn how major digital technology trends may change their business and how they will have to adapt their workforce and HR strategy to new technologies. Our target group of professionals prefer on-the-job learning and are stimulated by learning from peers. EIT Digital can assist the European workforce with critical knowledge and skills especially in those areas that are covered by our state-of-the-art Action Lines. Building on its toolset of the partner network, Co-Location Centres and online platform, EIT Digital is developing and operating the blended education programmes that optimally match the needs of busy professionals and their employers, incorporating peer education elements and providing relevant certifications.

Value Creation

After its recent ramp-up, the Professional School will continue to refine and enhance both content and its operating model. It will be run like a venture, focusing on concrete needs of our professional target group and leveraging the strength of its partner network. This will also include more emphasis on dedicated marketing activities.

We can leverage an advantage over other professional education providers by the close integration of highly relevant topics, addressed by our Action Lines, with top universities, and industry partners providing first hand their professional education needs. In the coming years, EIT Digital plans to double the blended course format completion rate, starting from a baseline of about 1000 in 2016 (purely online courses can easily achieve higher growth rates).

To create maximum value in Europe despite these comparatively small numbers, the programmes will be shaped to answer the need for highly relevant and focused content with a fast turnaround time. EIT Digital sees also an increased demand in executive level courses in addition to vocational and professional level courses.

The content of the courses will centre on new foundational technologies like data science and analytics as well as application areas like retail, manufacturing and financial services. Our ambition is to become Europe's foremost experts on delivering top quality content in blended learning formats.

Our target group of professionals prefer on-the-job learning and are stimulated by learning from peers.

EIT Digital Online Education

Purpose

The EIT Digital online and MOOC activities partners with the world's leading content providers outside of the EIT Digital partner community and global delivery platforms, to enhance the content of the courses created by the Master, Doctoral, and Professional Schools, and to provide a European-wide reach of the programmes. By leveraging the marketing effect of EIT Digital branded online programmes, we attract more students to join our Schools. For our partners, we turn suitable content into blended and purely online education programmes. We are working directly with leading European universities and industrial partners to deliver the right content in the optimal format for the respective target groups as defined by the Master, Doctoral and Professional Schools.

Motivation

Today, learners expect more content to be available online for them to study at a time and location of their choosing. Education institutions like traditional universities as well as vocational and professional training institutes want to extend their reach to a larger customer base. This puts pressure on traditional education systems to adapt their courses and programmes by leveraging state-of-the-art digital teaching approaches. The dynamics of this development is impressive: the European e-learning market will grow by a factor of 15 over the next 10 years, to reach 30 percent of the education market. EIT Digital online and MOOC activities help our partner organisations cope with these developments. By not being embedded in a standard curriculum development organisation like a university department, we are able to be more agile in developing content.

Value Creation

The developments in online and MOOC education formats will continue to act as an enabler and catalyst for the EIT Digital Schools with respect to developing and delivering courses in a digital format. By partnering with Coursera as a world-leading online course delivery platform and the Haas Business School (UC Berkeley), we profit from the experience and reach of those organisations in their fields.

EIT Digital is therefore a key partner for European top institutions to support their online programme developments. EIT Digital's focus is on the quality of the content and delivery formats that the Schools will provide to their students, rather than quantity of courses. We consider the blended education format to be the preferred mode of delivery in the Master School, rather than pure online courses. All I&E courses of the Master School will be available in blended format, and credits will be earned by students

through online course formats. The Professional School in turn, will rely more on pure online content (which also will be available on mobile devices), to reach their target group.

Stand-alone online courses are the format that will be used to address topics in collaboration with other KICs. These target the wider society learning for a broad audience. These programmes will aid in pushing the EIT brand and draw prospective students to EIT Digital programmes.

EIT Digital is therefore a key partner for European top institutions to support their online programme developments

A Well-Connected Organisation

EIT Digital is well-connected to national, European and global ecosystems in the digital technology space. Collaboration with these ecosystems leverages expertise and the existing innovation and education ecosystem of EIT Digital to address specific joint objectives.

National Programmes

National technology transfer and business promotion agencies are important stakeholders in our ecosystem (see Table 1 on page 40)

Table 1: National programmes with EIT Digital participation

National Programme	EIT Digital Objectives
Finland: Tekes programme	• KINO project: collaborates in the work package "Berkeley method of entrepreneurship" • 5GTNF: EIT Digital coordinates the integration of 5thGear testbed projects and facilitates the cooperative creation of an open national innovation platform for 5G technology
Finland: National Spearhead Programme "Digital Disruption of Industry"	• EIT Digital Partners are engaged in this Finnish Strategic Research Council project, e.g. for joint projects and proposals, and scouting scaleups for the Accelerator programme
France: ANRT (Association Nationale Recherche Technologie)	• CIFRE programme PhD funding programme in France
Germany: Software Campus	• Transitions of advanced students with high potential from EIT Digital to Software Campus and vice-versa in education, innovation, business
Hungary: Irinyi Plan	• Support Hungarian industrial strategy development, in particular for Industry 4.0
Hungary: Centre for Academia-Industry Cooperation	• Participate in the ecosystem of the leading Hungarian universities, research institutes and industries active in the field of computer science and computer engineering
Italy: Ministry of Education, Universities and Research – National Research Programme 2014-20	• Leverage funds that support the participation of Italian organisations in KICs
Italy: Autonomous Province of Trento Province multi-annual research programme	• Active role in the Trentino research system, leveraging local funds
Netherlands: Knowledge and Innovation Agenda	• Stimulate public-private partnership to implement this agenda in the Netherlands, together with our partners TNO and CWI
Netherlands: Commit2Data	• Enable the valorisation sprint of the programme lines for joint research and transfer of data science results to companies and organisations
Spain: National Government, Ministry of Economy & Competitiveness	• EIT KIC Coordination Action and Ecosystem building: promoting a pan-European excellence network complementing local ICT players, including international partnerships, access to wider markets, training, research and investments.
Spain: National Government, Ministry of Education, Universities and Research – National Research Programme 2014-20: International Campuses of Excellence	• Use PhD and post-doctoral scholarships to integrate students in innovation activities and complement existing programmes with EIT Digital
Sweden: Urban ICT Arena	• An open testbed and co-creation arena where digitization can be developed, tested and displayed in an urban environment. The infrastructure will have at least dark fiber (Stockholm City), 6LoWPAN, WiFi and 5G (Ericsson)
United Kingdom: Smart London Board	• Cooperation in the area of smart cities, advising the Mayor of London

European Programmes

On a European level, EIT Digital engages with a number of EU programmes that leverage our pan-European scope.

EU Programme	EIT Digital Objectives
DG Connect – FI-PPP (Future Internet Public Private Partnership) **www.fi-ppp.eu**	• accelerate the market development of smart infrastructures • support sub-projects FIWARE (help create the FIWARE ecosystem), FICORE (contribute to platform strategy), FIRE+ (contribute federated SDN testbed and manage its usage), I3H (coordinate incubation hubs)
DG Connect – BDV-cPPP (Big Data Value Association - Contractual Public Private Partnership) **www.bdva.eu**	• expand and strengthen our innovation ecosystem • expand Entrepreneurial Education (skill creation) • support European data economy • joint CSA proposals within H2020 • sustainability
ERC www.erc.europa.eu	• involve laureates of the ERC in educational and innovation activities
ETSI www.etsi.org	• strategic partnership for standardising activities
DG Regio	• strategic partnership for innovation in EU28 regions • sustainability (Nodes and CLCs; ARISE Programme)
EUA (European University Association) **www.eua.be**	• align for securing EIT label
ENQA (European Association for Quality Assurance in Higher Education) **www.enqa.eu**	• align for securing EIT label
ESU (European Students Union) **www.esu-online.org**	• align for securing EIT label

Table 2: European programmes with EIT Digital participation

Collaboration with other KICs

All KICs are touched by the digital transformation, and EIT Digital drives cross-KIC collaboration with all other KICs (Climate, Energy, Health, Raw Materials, and the planned Food Manufacturing KICs). In particular, EIT Digital is leading all other KICs in online/MOOC strategy – examples include MOOCs built with Climate-KIC

(data-driven enterprise, digital climate skills). We also drove the establishment of the cross-KIC alumni organisation.

In our Call for 2017, we are specifically encouraging cross-KIC collaboration. For example our Digital Wellbeing Action Line is the natural partner of EIT Health with concrete collaboration plans starting in 2017. We look forward to working with EIT Manufacturing KIC through our Digital Industry Action Line.

Sustainable Value Creation

Sustainable Strategy

The sustainability strategy of EIT Digital is based on several elements:

• Membership fees – from our Partners
• Return on Investment – from our Accelerator
• Service fees – from our Accelerator and our Professional School
• Alternative sources – including co-investment from our Partnership and national and EU programmes

Return on Investment

In 2016, the EIT Digital Accelerator introduces a set of sustainability mechanisms, directed at the startup services that we provide. Among others, convertible loans are under consideration. For some of these mechanisms, there will be a delay between the original value creation and the related backflow. This kind of income for EIT Digital is expected to increase from year to year and reach a level of € 2 million in 2019. In parallel, mechanisms for obtaining a financial return for EIT Digital from innovation activities are being established (e.g. approaches towards revenue sharing agreements).

Professional School

EIT Digital's Professional School generates income for the organisation via the sharing of revenue from course fees between EIT Digital and the contributing Partners. A business plan for the Professional School has been established for that purpose. The ambition for the following years is to turn the Professional School into a sustainable and profitable operation and to generate an income of € 2.5 million in 2019.

Open Innovation Facilitator

With respect to generating income from additional services, EIT Digital has identified sufficiently mature structural assets that were built up over the last years on a European scale by the organisation and that can be offered as commercial open innovation services to customers. After an initial evaluation, EIT Digital believes that there is a significant market potential for a number of such services, e.g. related to finding open innovation solutions for identified challenges, technology scouting, matchmaking and transfer services, software testing and certification, intellectual asset brokerage and facility and support services.

The starting point for this is EIT Digital's industrial engagement programme in 2016, which leads to the development of tailor-made industry collaboration models that will initially be implemented with selected Partners and that will be expanded into an open innovation services business. Income for 2019 is projected at €1 million.

Co-investment from EIT Digital Partners

The co-investments by partners to cover the cost of activities will stabilise on a level of €25 million per year. Next to the innovation activities, which already have a co-investment target of 25 percent, and the High Impact Initiatives, which have a co-investment target of 50 percent, this now also includes the EIT Digital education activities with expected co-investment contributions of 25 percent.

Alternative Sources of Income for Education Programmes

The sustainability strategy for the EIT Digital education programmes consists of four main elements:
- measures for reducing the average cost per student
- measures for generating income from tuition fees and from course fees
- approaches towards obtaining financial support from national or local programmes or from industry
- increase in partner co-funding for education activities (aiming at 25% from 2017 onwards; see above).

For the Master School, tuition fee income will be increased by raising the number of paying students. In the mid-term, all non-EU students will be paying students. Next to this, a scholarship strategy will be implemented. Compared to the situation at the time of the publication of this Strategic Innovation Agenda, the targeted cost reduction for the Master School in 2019 is €3.1 million.

For the Doctoral School, the average cost per student will be gradually lowered by reducing costs as well as by obtaining industry contributions, e.g. for the programme component Business Development Experience. Alternative financing for the overall PhD programme via national funding mechanisms is being explored in several countries, e.g. in France (via the CIFRE programme) and in Sweden.

Additionally, the Partner co-funding for the Doctoral Training Centres and for Innovation and Entrepreneurship Education will increase. The targeted cost reduction for the Doctoral School for 2019 is €1 million (compared to the situation at the time of the publication of this Strategic Innovation Agenda).

National Funding

The Nodes and Associate Partnership Groups of EIT Digital have analysed their respective national ecosystems and identified potential national sources of co-funding for EIT Digital's activities.

Three types of activities will benefit from such national funding support:
- activities to create and enhance the national EIT Digital ecosystem (e.g. Co-Location Centres, Satellites, etc.)
- activities to stimulate innovation and entrepreneurship
- activities to facilitate entrepreneurial education.

For 2019, the total contribution to the EIT Digital sustainability programme from national funding sources is expected to reach €4 million.

European Funding

EIT Digital selectively participates in projects supported by European funding mechanisms. This strengthens its collaborations across the EU, engages the partnership and contributes to complementary funding.

Sustainability Programme Projections

The overall effect of the EIT Digital sustainability programme is expected to amount to close to €35 million in 2017, to almost €39 million in 2018 and to more than €41 million in 2019. While the contributions obtained from co-funding and from partner fees are expected to stabilise, further growth potential exists especially in the various income generation mechanisms as well as in the acquisition of funding from national sources.

Conclusion

In 2009, EIT Digital (then known as EIT ICT Labs) set out to radically accelerate digital innovation in Europe in order to promote economic growth and societal development.

2009

EIT Digital (then EIT ICT LABS) set out to radically accelerate ICT innovation in Europe

2010 *to* 2013

- Co-Location centres established
- Scaleable Pan-European ecosystem and Doctoral School launched
- Portfolio of Action Lines integrating Education, Research and Business developed
- Business Development Accelerator launched

2013 *to* 2016

- Expansion including London Node, aRISe and Silicon Valley hub
- Master School and Doctoral Schools scaled up; Professional School created
- Balanced portfolio of top-down. High Impact activities and bottom up activities
- Accelerator expanded

2017 *to* 2019

- Strong brand and recognised leader in digital innovation, education & entrepreneurship
- Sustainable organisation leveraging EU, national as well as private, public investments
- Entrepreneurial Education - EIT Digital model broadly impacting national programmes EIT label highly recognised and competitive
- Innovation and Entrepreneurship - Disruptive innovation activities leading to impactful ventures - Accelerator as a recognised and competitive pan-European organisation for startups

Six years later, we have established ourselves as a vibrant, pan-European digital ecosystem that is a recognised entrepreneurship and innovation driver as well as an educator of European entrepreneurial talent.

Over the next few years, we aim to enhance our brand, to be seen as a digital lighthouse and a desired digital innovation partner. Through our societal and economic impact, we wish to drive innovation on a European scale to open up new avenues for the consistent creation of economic growth and enhancement of quality of life.

EIT Digital Partners

(as of Dec 31, 2015)

A
Aalto-korkeakoulusäätiö
Åbo Akademi University
Acreo Swedish ICT AB
Airbus Defence and Space GmbH
Airbus DS SAS
Alcatel-Lucent Bell Labs France
Alcatel-Lucent Bell N.V.
Alcatel-Lucent Deutschland AG
Alcatel-Lucent Ireland Limited
Alfstore
Amadeus sas
ATOS Spain S.A.

B
Bittium Safemove
Bittium Wireless Ltd.
Bosch Security Systems B.V.
British Telecommunications PLC
Budapest University of Technology and Economics

C
C.R.F. Società Consortile per Azioni
Cap Digital
CEFRIEL S.CONS.R.L.
Commissariat à l'Energie Atomique et aux Energies Alternatives
Consiglio Nazionale delle Ricerche
CREATE-NET

CSC - IT Center for Science Ltd.
CWI

D
DATA PUBLICA
Deutsche Telekom AG
Deutsches Forschungszentrum für Künstliche Intelligenz GmbH
Digital Catapult

E
EIT Digital Alumni Foundation
EIT Digital IVZW
EIT Digital Silicon Valley
EIT ICT Labs Germany GmbH
EIT ICT Labs Italy
EIT ICT Labs Stockholm
Engineering Ingegneria Informatica S.p.A.
Eötvös Loránd University
Ericsson AB
Ericsson GmbH
Ericsson Hungary Ltd
Ericsson Telecomunicazioni S.p.A.
EURECOM

F
Fondation de Coopération Scientifique "Campus Paris-Saclay" - Digiteo
Fondazione Alma Mater
Fondazione Bruno Kessler
Fondazione Politecnico di Milano

Fortiss GmbH
Forum Virium Helsinki Oy
Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.
F-Secure Oyj
FUNDACIÓN GENERAL DE LA UNIVERSIDAD POLITÉCNICA DE MADRID
Fundación IMDEA Software
Futurice Oy

G
Green Communications

H
Huawei Technologies Duesseldorf GmbH

I
Images & Réseaux
iMinds vzw.
Imperial College London
INDRA SISTEMAS S.A.
INRIA
Institut Mines-Télécom
Intel Corporation (UK) Ltd

J
JCP Connect SAS

K
Karlsruher Institut für Technologie (KIT)
Kista Science City AB
KONE Corporation
Kungliga Tekniska Högskolan

L
Luleå University of Technology
Lund University

M
Magyar Telekom NyRt
Missions Publiques Sarl

N
Nederlandse Organisatie voor toegepastnatuurwetenschappelijk onderzoek - TNO
New Factory Ltd.
Nokia Oyj
Nokia Technologies Oy
NXP Semiconductors

O
Océ Technologies B.V.
Oulun yliopisto
Oy L M Ericsson Ab

P
Philips Electronics Nederland B.V.
POLE SCS
POLITECNICO DI MILANO
Politecnico di Torino
Poste Italiane SpA

R
Reply SpA

S
Santer Reply SpA Con

SAP SE
Security Reply srl con Socio Unico
SICS Swedish ICT Västeras AB
SICS Swedish ICT AB
Siemens AG
Stichting Federatie 3 Technische Universiteiten
Stichting imec Nederland
STMicroelectronics Srl (Italy)
Stockholm Innovation & Growth AB
Stockholms universitet
SYSTEMATIC PARIS REGION

T
Tampereen yliopisto
Technische Universität Berlin
Technische Universität Darmstadt
Technische Universiteit Delft
Technische Universiteit Eindhoven
Teknologian Tutkimuskeskus VTT Oy
Telecom Italia Information Technology SRL
Telecom Italia SPA
THALES Communication and Security SAS
Thales Italia SPA
Thales Nederland B.V.
Thales Services SAS
The University Court of the University of Edinburgh

Tieto Oyj
TomTom Navigation B.V.
TTY-SÄÄTIÖ
TU München

U
Universidad Politécnica de Madrid
Universität des Saarlandes
Université Jean Monnet, Télécom Saint Etienne
Université Nice Sophia Antipolis
Université Paris-sud XI
Université Pierre et Marie Curie - Paris 6
Universiteit Twente
Universiteit Utrecht
University College London
University of Bologna
University of Helsinki
University of Trento
University of Turku
University of Rennes 1

V
Vereniging EIT ICT Labs Eindhoven
Vereniging High Tech NL
Vodafone Group Services Limited
VTT Ventures Ltd.