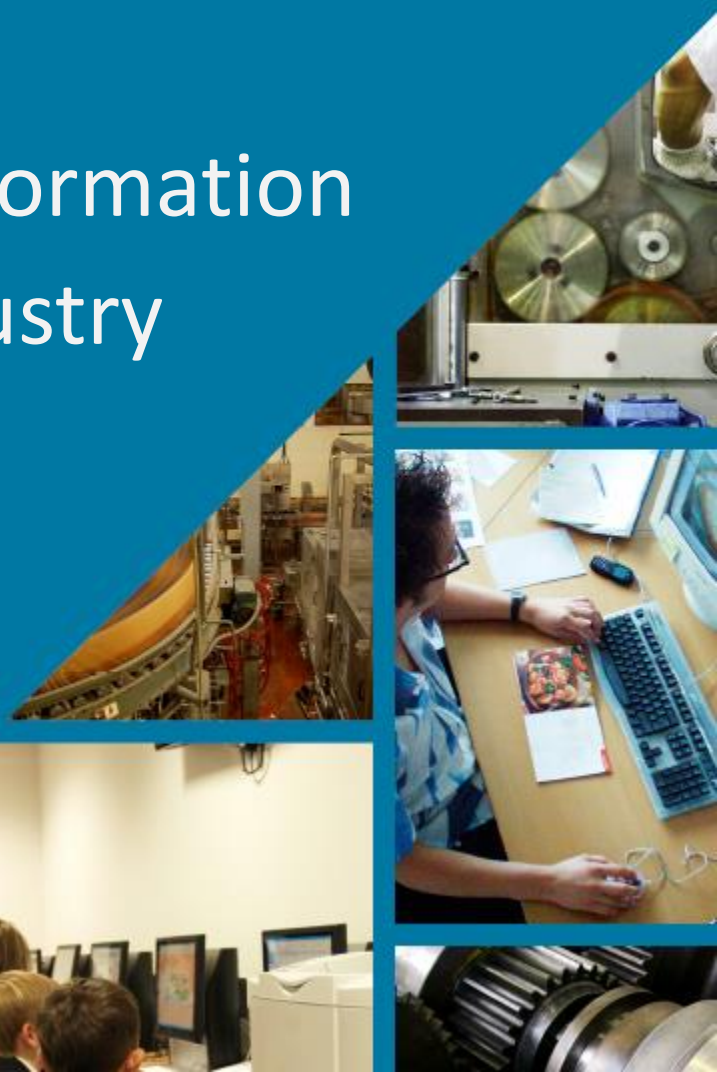
Digital Transformation of European Industry and Enterprises

Report and recommendations of the Strategic Policy Forum on Digital Entrepreneurship



Introduction

01

The benefits of digital transformation

ENORMOUS GROWTH POTENTIAL

Companies making use of a newly available set of accelerating technologies are performing 10 times better than their peers

10x better

THE POTENTIAL FROM THE CREATION OF THE DIGITAL SINGLE MARKET

+6% of GDP from a fully realised DSM

+3.8m The DSM could create 3.8m jobs and reduce the cost of public administration by 15-20%

400,000 to **1.5 million** new jobs

unexploited potential

Number of new jobs the EU could create in the internet economy

THE TRANSFORMATIVE POWER OF DIGITAL

Digital technologies are fundamentally **changing** the way people live, work, communicate and play

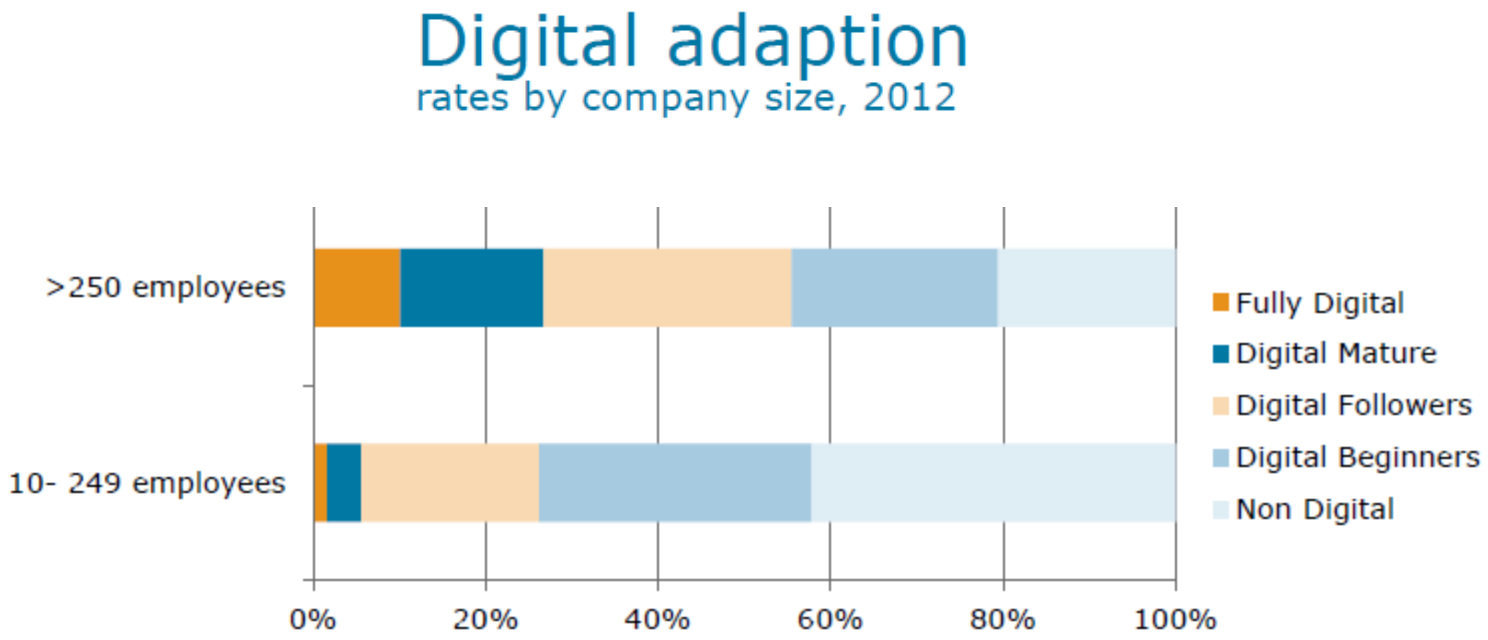
Big data technology and services are expected to grow worldwide to **USD 16.9 billion** in 2015 at a compound **annual growth rate of 40%**. Companies using that data become **5-6% more productive.**

The benefits of digital transformation

- **Social value** – big data technologies contribute to *healthcare* and *education* improvement, *environmental* protection and *sustainability*
- **Open data** helps make *public services* more efficient, drives *innovation* and *economic growth* and boosts *political engagement*

EU businesses are lagging behind

- **Slow and uneven progress** – of smaller EU companies, only 28.5% and 25.7% use social media and cloud solutions, respectively



Source: IDC European Vertical Markets Survey 2012

EU businesses are lagging behind

EU businesses are **missing out** on the chance to grow by not taking full advantage of digital technologies

Small European businesses are slow to change

only
14%
of SMEs use the internet as a **sales channel**

41%
non digital
41% of EU companies still haven't adopted any of the new advanced digital technologies

Jobs destroyed and created

54%
of the workforce affected

Technological advances could threaten **54% of our workforce** across EU28 over the coming decades

In France, the internet destroyed 500,000 jobs in the last 15 years but also created **1.2 million** new ones

In Germany, SMEs could create 670,000 new jobs by using technology effectively

2.6 new jobs
were created
for every job destroyed

EU businesses are lagging behind

- **Challenges of change** – many small companies will need a confidence boost to embrace digital transformation
- **New skills and support** – workforce adaptation to risks and opportunities of new technologies, and development of new skills are essential

Opportunities and challenges

- The second wave of digital technologies presents opportunities and challenges across all sectors, particularly **manufacturing, healthcare, creative industries** and **education**
- These technologies also enable **synergies** across sectors

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

Revenue coming from digital technologies in creative industries will grow from **47%** in 2013 to **57%** in 2015

90% of all interactions in healthcare in the UK are face-to-face – a 1% reduction would save up to £200 m

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

Digital technologies in manufacturing

The impact of data-driven technologies

- Digital technologies could save top 100 EU manufacturers up to €160bn in scrapping and reworking costs
- Advanced analytics in predictive maintenance systems could reduce equipment downtime by 50% and increase production by 20%
- A 10% production efficiency improvement in top 100 EU manufacturers → €265bn gain for the industry

Digital technologies in healthcare

Improving the quality of care

- Electronic Health Records (EHR) help make analytics-based diagnoses and decisions
- Health mapping and profiling can help disease monitoring and prevention across populations
- Improve efficiency of healthcare systems → adoption of health information technology could save up to £200m in the UK

Digital technologies in healthcare

Improving the quality of care

- However, very few healthcare providers currently use digital technologies for prevention, diagnosis and personalised treatment
  - Quality and usability of collected data?
  - No harmonisation of IT systems → no data exchange
- Regulatory issues associated to digital technologies
  - Recognition of foreign professionals
  - Personal data protection

Digital in the creative industries

A clearer picture of their customers

- Revenue of Media & Entertainment companies from digital technologies is predicted to grow from 47% to 57% between 2013-2015
- Big data analytics allow better insight into customer preferences and creation of new business models
- Online platforms bring consumers and businesses closer

Digital in the creative industries

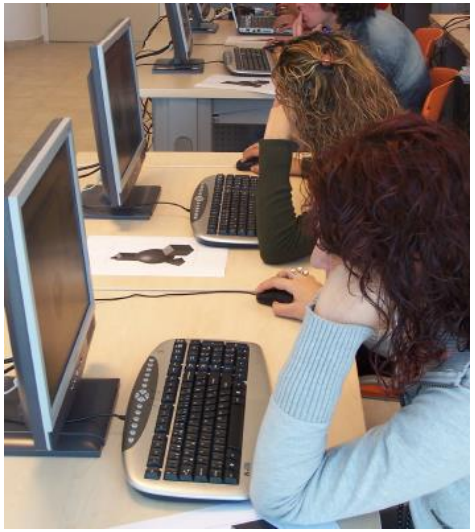
A clearer picture of their customers

- Pre-requisites for creative industries to benefit from digital technologies include:
  - Better knowledge of finance and financing options
  - Harmonisation of rules and fiscal regimes across EU
  - Better online payment systems

Digital in education

Opening up new ways to learn

- Digital technologies offer innovative education and training options:
  - E-learning
  - Learning apps
  - Gamification
  - MOOCs (open online courses)
- E-learning market expected to reach 30% of total education market in the next ten years



A plan for digital transformation of the EU

02

The EU must choose how to act

- Europe needs to act positively and decisively to realise the benefits of digital transformation
- Completing a Connected Digital Single Market is crucial
- Action from industry, academia, social partners and policy-makers is necessary

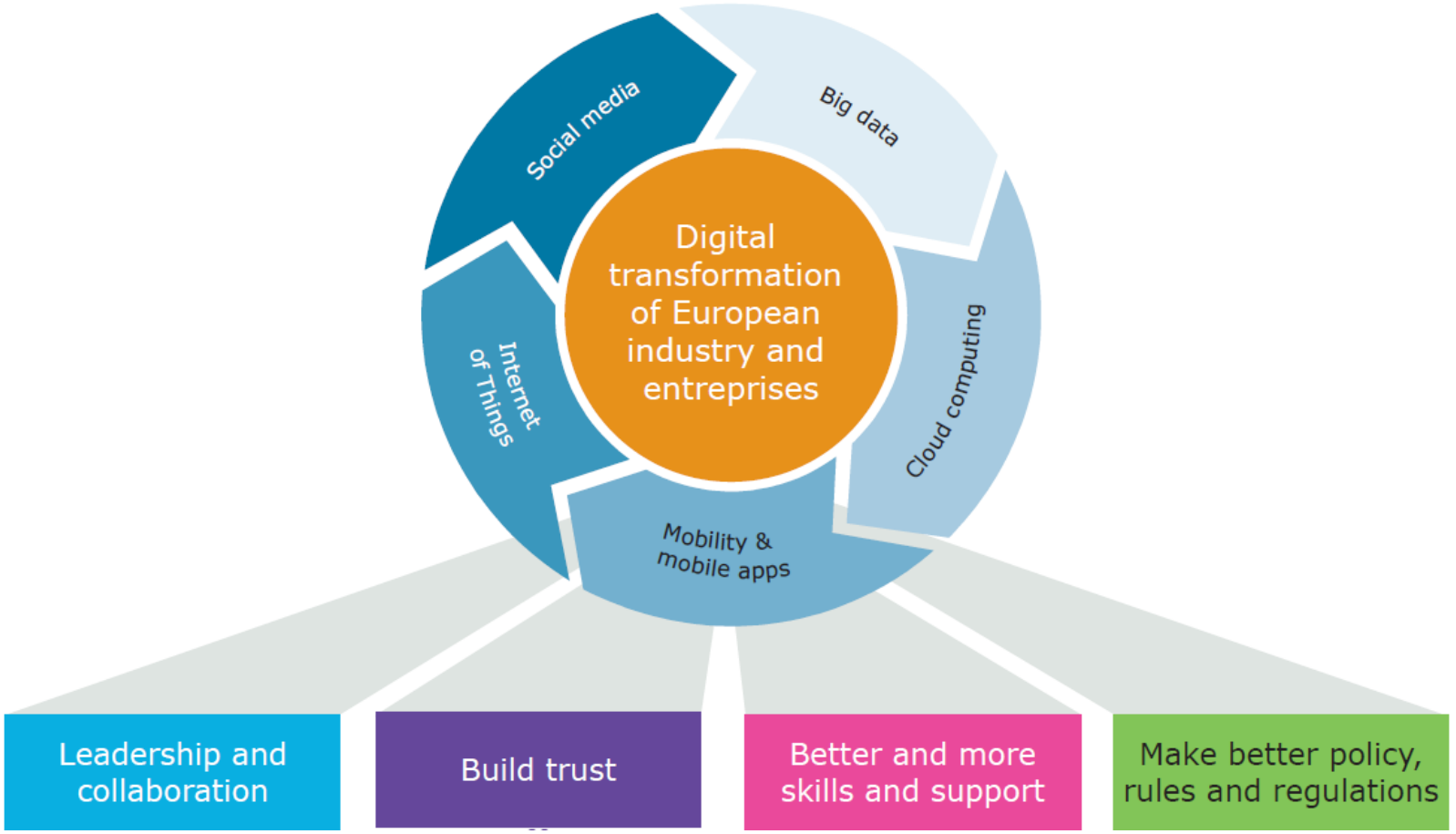
Recommendations and assumptions

- Basic pre-requisite for successful digital transformation:
  - Digital infrastructure throughout EU
  - Digital Single Market with harmonised regulations

Europe and its companies cannot afford to miss the opportunities offered by a fast growing digital economy. For this to happen, we need a strong Digital Single Market to overcome the fragmentation of the internal market and divergent national regimes. It is time to unlock the growth that this economy could generate. This is a clear priority for the European Commission.

Elżbieta Bieńkowska
Commissioner Internal Market, Industry, Entrepreneurship and SMEs - DG GROWTH

Four areas of recommendations



Leadership and collaboration

RECOMMENDATION 1

Demonstrate inspirational political leadership; set national digital transformation targets

Creating confident leaders

- Need for confident and competent business leadership
- Support from political leadership is essential
- Digital transformation should be made a political, social and economic priority
- Targets for monitoring the progress of digital transformation should be set nationally and locally

RECOMMENDATION 2

Establish new centres of digital transformation excellence

Digital transformation centres – old meets new-in smart cities

- Physical or virtual digital transformation centres should be established to bring business leaders together and inspire them to digitally transform their businesses

Establish new centres of digital transformation excellence

Mutually beneficial open innovation models

- Joint innovation processes between large companies and SMEs should be built and open innovation environments set up to help technology developments

RECOMMENDATION 3

Establish a pan-European network of such centres and from the shared experience develop a European blueprint

A globally excellent pan-European network

- The network should be supported by an online platform to share digital transformation knowledge and lessons learnt throughout the EU
- A European blueprint should be developed based on the shared knowledge to provide guidance on digital transformation

Leadership and collaboration

Talking digital: how Dublin created a truly collaborative Masterplan

- Dublin Digital Masterplan based on:
  - Strong political leadership
  - 'Quadruple helix' governance framework: collaboration between governments, businesses, academia and citizens
- Outputs of the collaboration:
  - Digital City Team
  - Business Accelerator Team

Build trust

RECOMMENDATION 4

Establish a dialogue between European businesses and technology platform providers

Consumer trust and value chain trust

- Ensuring that citizens' data is kept safe, privacy is protected and digital property is kept secure
- EU businesses need to trust the data platform providers
- Meaningful dialogue is an essential component of the trust building process

RECOMMENDATION 5

Reinforce high quality, available and accessible cross-sector standards

Strong cross industry standards

- European businesses from different sectors should participate in standard-setting organisations to ensure that the resulting standards are sector-independent

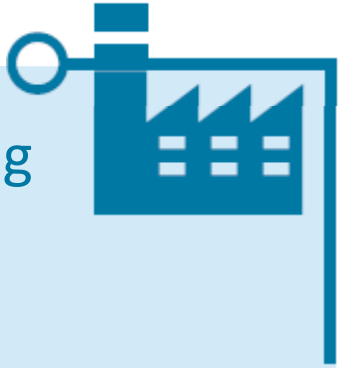
Build trust

Standards in healthcare

- A barrier to digital transformation in healthcare is the lack of common standards for healthcare data
- All systems need to collect and process data in the same way
- This can be done by creating a common set of standards at the EU and international level

Build trust

Need for interoperability in manufacturing



- Smart manufacturing is dependent on communication with other sectors such as energy distribution and transport management
- Interoperability will be crucial in such hyper-connected environments

Better and more skills and support

RECOMMENDATION 6

Re-focus funds and programmes to better support digital transformation

Better support will encourage faster transformation

- Availability of funds for digital transformation would be beneficial
- In addition, eligibility criteria for existing funds should be expanded to include digitalisation as a key objective of funded projects
- This would help digitalisation of projects across many sectors (transport, infrastructure, energy, sustainability etc.)

RECOMMENDATION 7

Promote the importance of digital leadership

Appoint Chief Digital Officers

- Digital transformation needs both business and digital skills
- Appointing a digital leader is therefore necessary to define and roll out digital strategies and digital business models

RECOMMENDATION 8

Make digital part of the educational mainstream

Demand for digital leaders will outstrip supply

- Training and educational institutions need to produce people with the right digital leadership skills and digital entrepreneurial mind-sets
- General management training and education must include more digital know-how

RECOMMENDATION 9

Increase the supply of new, highly specialised skills

Growing demand for specialised digital skills

- These include big data analysts, cyber-security specialists, coders and programmers
- In the UK, the number of big data analysts is expected to increase by 240% over the next five years
- The skills gap should therefore be filled

Better and more skills and support

Digital leadership in the healthcare sector

- The role of Chief Digital Officer is very rare
- Therefore, the Commission and Member States should promote this role
- A Digital Health Academy should be set up as an online source of training and development for healthcare professionals

Better and more skills and support

Digital leadership in the education sector

- Teachers with necessary digital skills are needed
- Projects aimed at providing training courses for primary, secondary and higher education teachers should be supported through the European Structural and Investment Funds
- This would make them and their pupils ‘digitally literate’

Make better policy, rules and regulations

RECOMMENDATION 10

Establish a permanent observatory to catalogue policy and regulatory impacts on digital transformation

Unintended consequences

- Unforeseen and unintended barriers to digital transformation can sometimes be created by laws designed for the analogue world
- An observatory should be set up to scan current and proposed EU and national legislations to identify unnecessary barriers to digitalisation
- The observatory should reflect the input from all the relevant stakeholders
- An online platform should also be set up to share suggestions and solutions

RECOMMENDATION 11

Put politicians, regulators and officials through digital boot camps

The sharing economy increasingly tests Europe's regulatory framework

- Regulators and policy-makers will need to deal with opportunities and challenges of the digitally enabled sharing economy
- Policy-makers' future skills must include a better appreciation of the possibilities and effects of digital technologies

RECOMMENDATION 12

Examine new policy through a digital lens: the digital test

Equipping policy-makers and regulators for the task

- Attendance at digital boot camps should be integrant part of the professional development of politicians and policy-makers
- A ‘digital test’ should be included in the EC Impact Assessment Guidelines
- Such test will enable the assessment of the extent to which a proposal has an impact on digital transformation
- The score of the test should influence the policy-making process

RECOMMENDATION 13

Harness the power of e-procurement

More than €2.4 trillion worth of goods and services

- Opening public sector tenders to more business and across EU borders would allow SMEs to expand their client base, benefit from the digital single market, and stimulate digital transformation
- E-procurement is thus a key way to boost digital business

Make better policy, rules and regulations

Policy making and healthcare

- Barriers to digital technologies in the healthcare sector include limitations in the use of medical records and data analysis
- Regulators should stimulate the use of digital technologies in the medical field to bring about savings and improve medical care

The Strategic Policy Forum

03

Background to the Forum

- **Aim**: To reinforce the dialogue among business, science and politics with the aim of shaping a common EU vision, and ambitious strategy to boost digital transformation in Europe

Background to the Forum

- **Composition**: 34 members
- **Chair**: John Higgins, Director General, Digital Europe
- **Industry representatives**: digital entrepreneurs, traditional industries, technology providers and business associations;
- **Private organisations**, NGOs, universities, research organisations, policy analysts, venture capital firms, etc.
- **International Organisations**
- **Public authorities**

Thank you

- General information on digital entrepreneurship can be found on the European Commission DG GROW website
  - http://ec.europa.eu/growth/sectors/digital-economy/entrepreneurship/strategic-policy-forum/index_en.htm