THE CONFERENCE BOARD
Trusted Insights for Business Worldwide

Avoiding the Digital Desert in Europe

Brussels, 21 January 2014

Project goals and approach

- Explore the key determinants of future ICT & digital policy in relation to economic and business growth in Europe
- Map the changes in the "digital landscape" in Europe on the basis of:
  - ✓ Expert insights (41 expert interviews, three roundtables)
  - ✓ Desk research (measurement, supply & demand in digital, ICT in public sector)
- Identify the key drivers, barriers and uncertainties to the impact of ICT on growth
- Use scenario approach to lay out the impacts of ICT on growth on the basis of different constellations of drivers, barriers and uncertainties
- Develop a new (or refreshed) policy narrative for EU digital policy that is resilient to uncertainties, tackles barriers and supports drivers
- This meeting: help refine and strengthen the policy narrative

Publications of Results

- D. van Welsum, W. Overmeer and B. van Ark (2013), '**Avoiding the Digital Desert - Four Scenarios and the Challenge of Unlocking the Information and Communication Technology's Growth Potential in Europ**e ', The Conference Board Executive Action 421.
- The Conference Board (2014), **Unlocking the ICT growth potential in Europe: Enabling people and businesses --Using Scenarios to Build a New Narrative for the Role of ICT in Growth in Europe**, report prepared for the European Commission's Directorate-General for Communications Networks, Content and Technology Knowledge Base, January 2014.
- The Conference Board (f2014), *Unlocking the ICT growth potential in Europe: Enabling people and businesses* -- **Background Report** - *Companion to the Report on "Using scenarios to build a new narrative for the role of ICT in growth in Europe*", report prepared for the European Commission's Directorate-General for Communications Networks, Content and Technology Knowledge Base, January 2014.
- The **Executive Summary**, the main report and the background report can be downloaded at the following link: https://ec.europa.eu/digital-agenda/en/news/new-study-unlocking-ict-growth-potential-europe-enabling-people-and-businesses

Study approach

Using scenarios to develop a new narrative for the role of ICT in growth policies

Identify drivers and barriers

- Talk to experts
- Take stock of findings in the literature

Build scenarios: Based on key drivers and key uncertainties, show what works or doesn't, and under which conditions. Each outcome is a scenario.

Develop a new narrative: how to use ICT to increase economic and business growth?

Establish a broad list of barriers and drivers

Filter the broad list through analysis, and follow-up with experts….

…..to identify key drivers and uncertainties that feed into the scenarios

Use the scenarios to develop a new narrative of how ICT can play a role in growth polices

Key:

Drivers: how does ICT impact growth, what are the transmission channels through which ICT increase economic and business growth?
Barriers: what prevents ICT from having a maximum impact on economic and business growth?

Main premises from the study

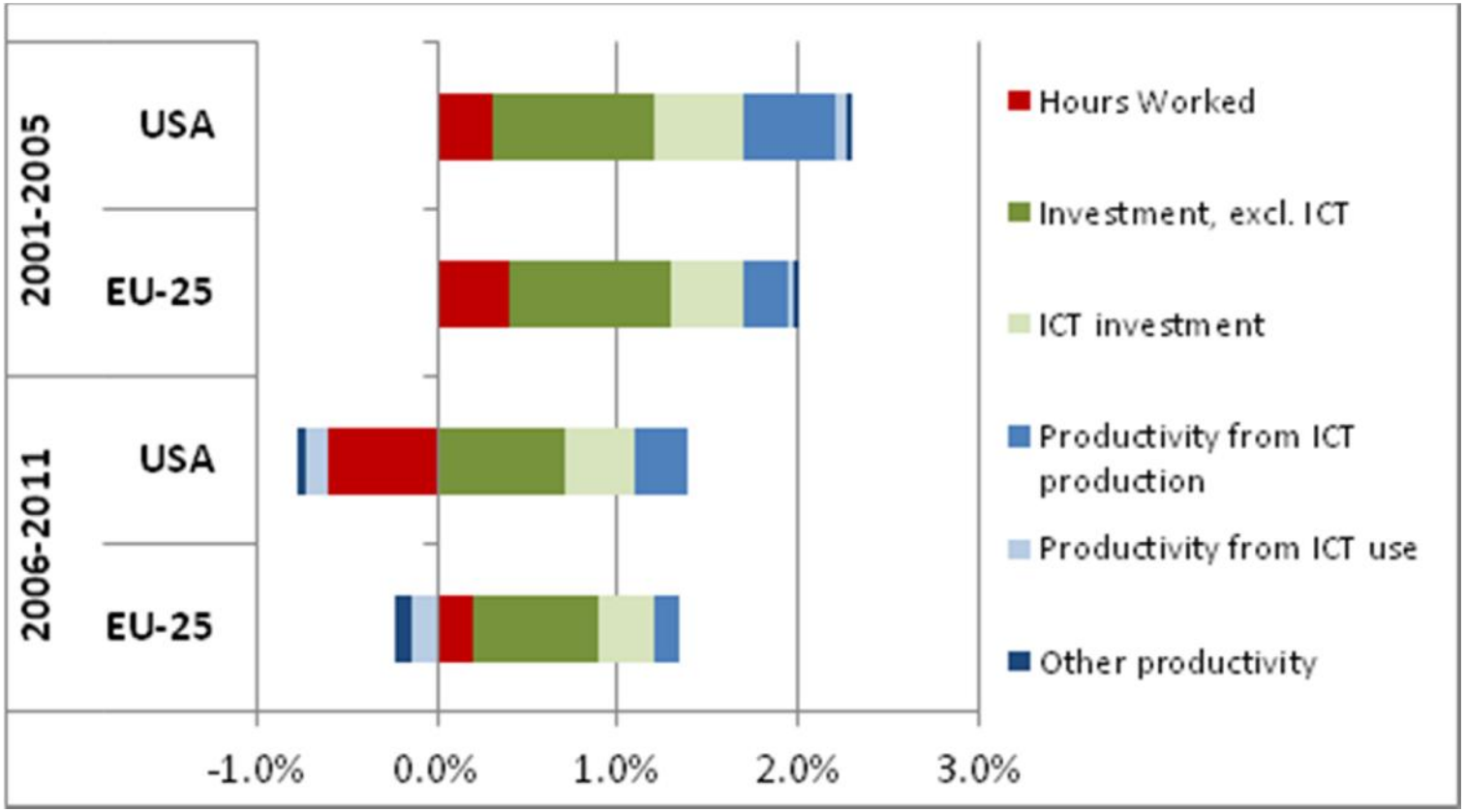
- Urgency and opportunity for ICT as a growth enabler increased:
  - ✓ Europe's economic woes create a vacuum that technology and innovation can fill.
  - ✓ The rapid diffusion of high-speed networks and mobile devices empowers consumers to
- While Europe hasn't fully reaped the benefits from ICT, it is potentially well-placed to exploit its strength
- Providing an ICT-infrastructure that enables growth remains important
- Not everything requires big public investment
- A more conducive regulatory environment will help
- Focus on "getting ready" for the next wave in digital technology and applications by facilitating demand through supporting supply.

Where is ‘digital Europe’ now and where is it heading?

- Contribution of ICT investment, producers’ and users’ productivity to growth has been around one third of total GDP growth
- But where is Europe’s competitive advantage? Most big ICT and ICT-related (services) firms are now non-EU.
- Infrastructure and network investment is lagging:
  - Hard infrastructure: high-speed high-quality, affordable, ubiquitous access
  - Soft infrastructure: reports of skills shortages (personal and business advanced user skills, e-leadership skills - dual technology and soft skills)
- Regulation is stifling transition to new economic environment, especially as network and scale effects become more important through high-speed networks and mobile devices:
  - Overregulation in product and labor markets
  - Fragmented markets with different regulatory regimes
  - Lack of access to finance (especially for smaller, more innovative and riskier ventures) are holding back innovation and entrepreneurship.

Europe's economy shows smaller growth contributions from ICT investment and ICT productivity than U.S.

Growth contributions to GDP from labor, capital and productivity, 2001-2005 and 2006-11 (in%)



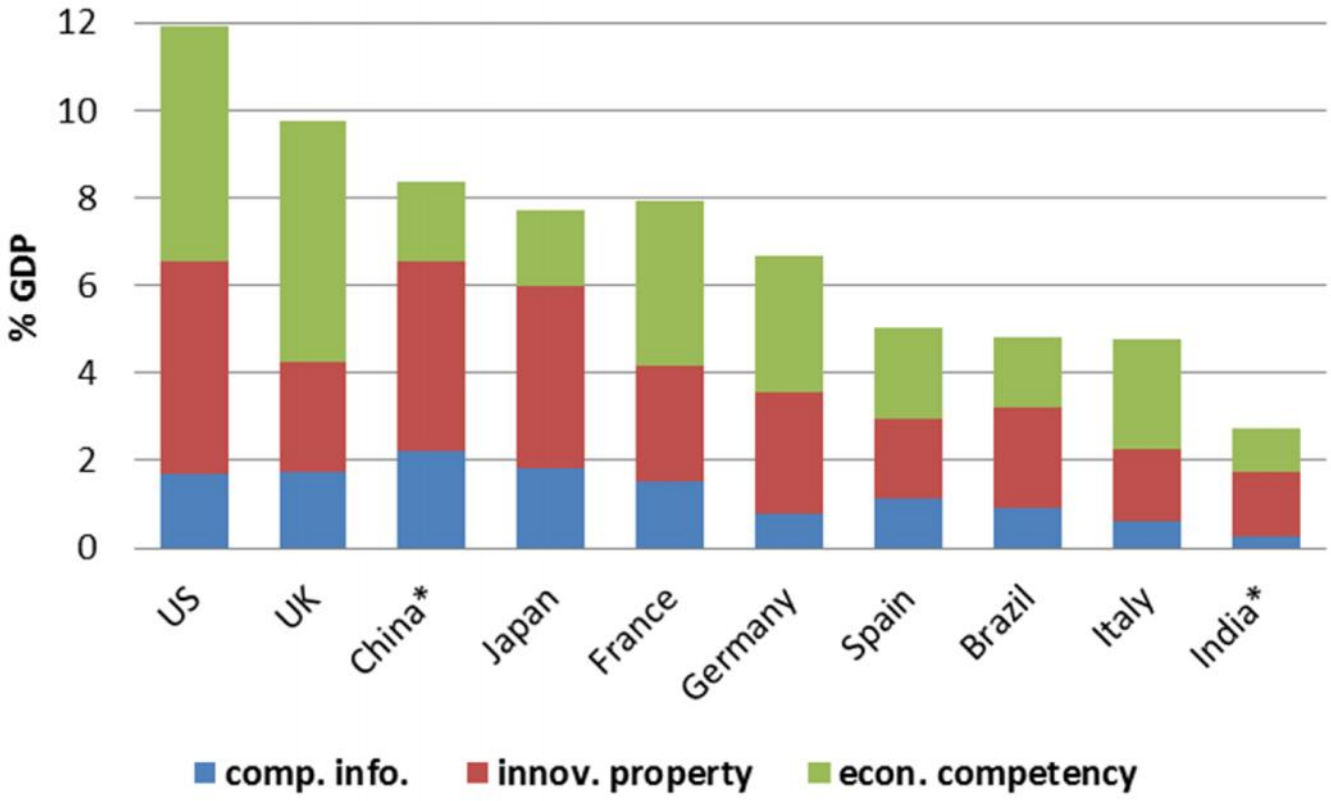
Source: The Conference Board

Why is the US better at exploiting the benefits from ICT?

- Firm structure and complementary investments in intangible capital
  - ✓ Internal organization of US firms allows more efficient use of ICT through managerial and other organizational changes
- Stronger entrepreneurial attitudes and skills
- Better innovation eco-system
  - ✓ Interactions businesses and universities
  - ✓ Access to capital
- More product and labor market flexibility helps restructuring
- Faster growth of demand creates larger markets for new products (combined with a larger “single” home market)
- With increased importance of mobile and other network and digital technologies, greater benefits from network and scale

U.S. has a decisive advantage in intangible investment, especially in economic competencies

Share of intangible investment in GDP, %, 2008



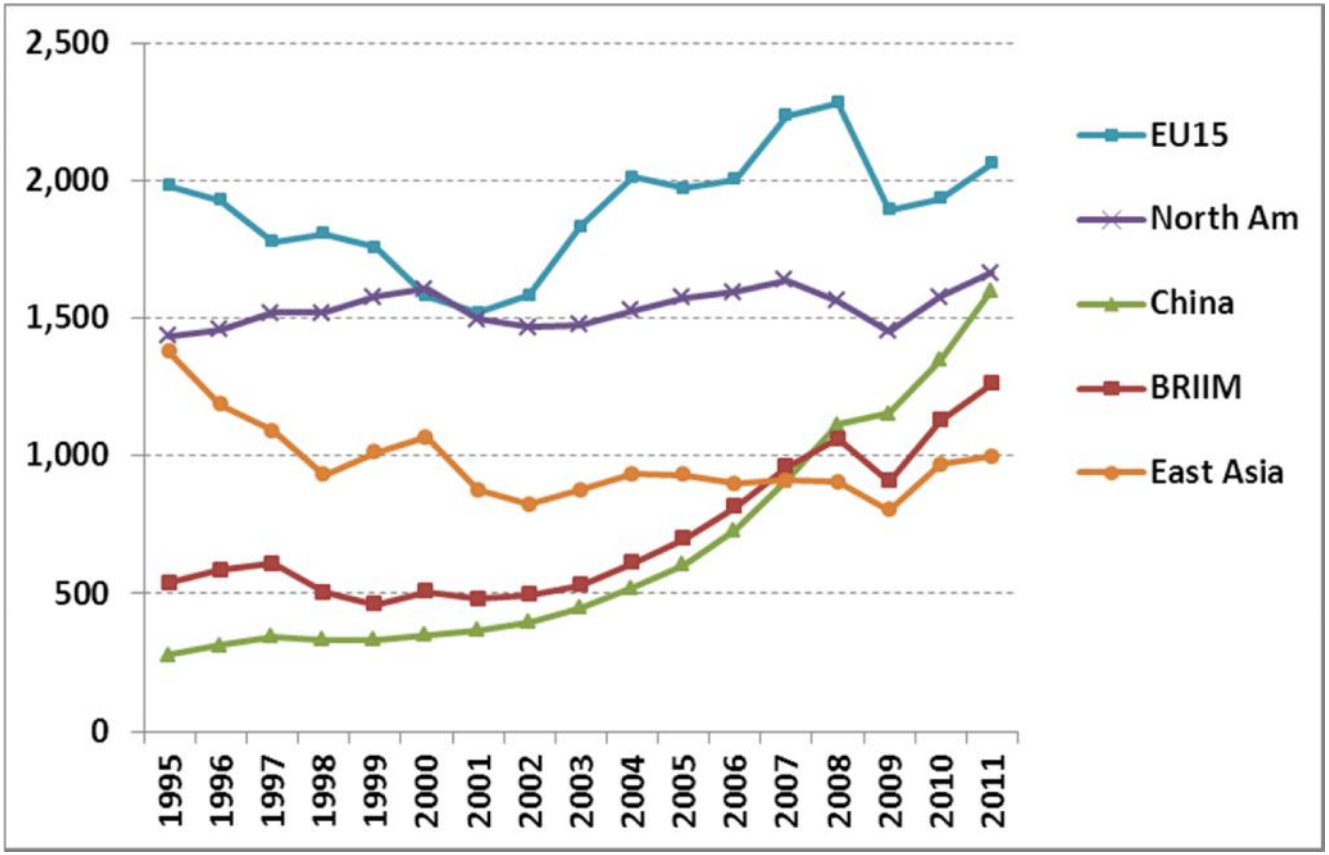
Sources: The Conference Board

Some good news: Europe is well placed to benefit from the growth potential of ICT in the future, provided the barriers and uncertainties can be overcome - quickly

- Many of the measures to optimize Europe's potential require reforms to existing situations and not large investments
- The huge size of Europe's GDP
- Relatively high levels of per capita income and productivity
- Increasing contributions from European firms in manufacturing AND services to the global value chain of manufactured goods
- Above-average level of the innovation infrastructure that business, government, and research require.

Europe remains strongest player in global value chain despite increased advantage for emerging markets

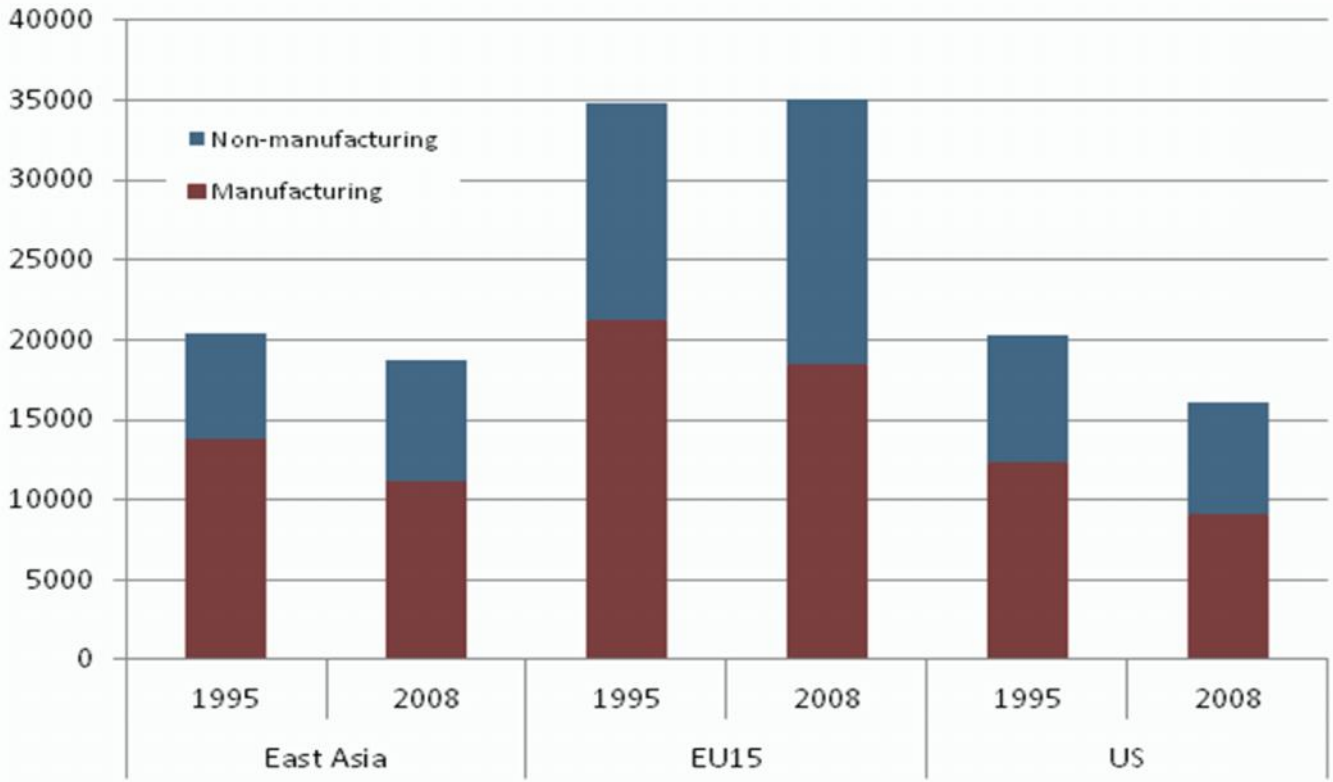
Value added by regions to output of final manufactures (billion 1995US$)



Note: EU-15 refers to member countries before 2004; BRIIM: Brazil, Russia, India, Indonesia and Mexico
Source:: WIOD, University of Groningen

Europe has created more service sector employment dedicated to production for the global value chain

Thousands of workers in manufacturing and non-manufacturing contributing to global production of manufacturing products



Source: World Input-Output Database (WIOD)

Use scenario approach to lay out the impacts of ICT on future growth

- Guiding questions:

  What future digital environments could occur, how do consumers and businesses fare, what happens to choice of products and services, and how are prices affected?
- On basis of expert interviews and desk research identify different constellations of drivers, barriers and uncertainties
- Two major uncertainties, outside the control of individual countries, Commission or government departments:
  - ✓ The pace of global growth
  - ✓ The degree of integration in the Single Market for Services and the Digital Single Market in practice
- Time frame: next 5 years or so

Changing digital behaviour of users can affect the depth and breadth of the growth impact of IT

- **Consumer behaviour**: Greater online interactivity, willingness to share, contribute and create online, especially among younger age groups; combined with real time review and engagement with companies, including through social media channels: generates “big data” and creates new business opportunities.
- **Business response**: Business activities are profoundly impacted; e.g. marketing and advertising through customized targeted adverts to people’s email, web sites they visit, in the side bar of their searches or even search results, and on their mobile phone.
- But: people are becoming **more aware** that personal data and information is being collected, and to what extent their online and mobile behavior provides companies with personal information.
- Late 2013 news headlines: **Tech giants unite for NSA reforms**: reports of spying and surveillance undermine trust and puts economic impact of IT at risk → could lead to a change in attitude, and a regulatory response.

Drivers of the changing digital landscape and of technology impacts

- Wide-spread availability of infrastructure:
  - ✓ “hard infrastructure”: affordable, ubiquitous, always-one fixed and mobile Internet, mobile broadband, powerful devices, software, services, apps
  - ✓ “soft infrastructure”: high share of (mobile) Internet users, penetration of tablets and smart phones, digital skills, willingness to use
- Convergence of devices (phone, smart phone, tablet, “phablet”, computer, camera, gps)
- Increased functionality and capacity of devices and networks, combined with mobility
- Internet of Things, Internet of Everything – communicate with devices and appliances, including while ‘on the go’, and M2M
- Increasing availability of mobile online content, apps and services
- All combined trends generate ‘big data’.

Drivers, cont.

- Related developments, including:
  - ✓ The Cloud
  - ✓ Big Data
  - ✓ Social media
  - ✓ Location-based services
  - ✓ Apps: “the app-economy”
  - ✓ Bar codes, scanning
  - ✓ Mobile payment systems
  - ✓ NFC (near field communication)
  - ✓ Mobile wallet
  - ✓ Video
  - ✓ 3D printing

Next trends likely to further increase the scope for digital engagement include: **real time** data and information, **wearable** and/or **body** technology, and **touch and eye** (movement) recognition: from one-click purchasing to one-touch or one-blink-of-the-eye purchasing, “while on the go”.

Barriers and uncertainties to the impact of ICT on growth

- How will **legal and regulatory frameworks** deal with concerns around data, privacy, security, and trust? How will that limit what can be done in the digital space? Degree of restrictiveness will be a key impact determinant.
- **Innovative capacity** in the development of digital world tools (e.g. software, apps, mobile payment systems): **integration vs fragmentation**: interoperability, convergence, attitudes of the big players / incumbents / eco-systems, entry of small players and their scope, **and market size**
- **Attitudes and willingness to use digital platforms** in different aspects of life (social interactions, commerce, banking, navigating, etc.), *e.g. could imagine a 'backlash' and increasing resistance to "having your life online"*
- **Skills** (consumers and businesses, business leaders); skills shortages? E.g. data scientists, dually skilled people, entrepreneurship, bringing innovation to market
- **Technological developments**: what will emerge as the prevailing - and next - technology / platform? Uncertainty around investments in new technologies

Unlocking EU Growth Potential by Enabling ICT-driven Growth

Scenarios for 2017—integrating European markets is key

ENABLING PEOPLE AND BUSINESS is key to letting ICT play its role in innovation and growth.

THE TIME TO ACT IS NOW to prevent Europe from losing its digital competitiveness while others are racing ahead.

SCALE and reduced fragmentation provide firms with market size and scope to experiment innovate and grow.

COMPETITION provides lower prices and greater choice to consumers.

ENTREPRENEURSHIP and SKILLS support ICT-readiness to embrace innovation and change.

NATIONAL GOVERNMENTS and the EUROPEAN COMMISSION should coordinate action on the three policy pillars.

Higher Global Growth >4.5%

Low degree of integration in the Single & Digital Market

High degree of integration in the Single & Digital Market

Digital Savannah
Fragmented EU market hampers firm growth with lack of scale opportunities. Companies may skip the EU market and go global. EU firms will be acquired by non-EU firms. EU consumers and business continue to face high prices and limited choice.

1.1% EU GDP Growth
20% ICT

Digital Rainforest
Integrated EU market creates strong businesses which compete globally. Low barriers to entry support creative disruption, rapid change and adjustment. Clustering and specialization across EU. Consumers and business see lower prices and more choice for products and services.

2.5% EU GDP
60% ICT

Digital Desert
Business strategies focus on capturing maximum revenue in domestic markets. Push to protect national champions. Weak firms may be acquired by other EU and non-EU firms. ICT products & services do not provide optimal benefit to consumers and business in terms of price and choice.

0.89% EU GDP
10% ICT

Digital Greenhouse
National champions compete for market share within slow EU and global economy. Protectionist attitudes at EU-level to non-EU firms but prevent EU firms to lead globally. Prices may drop, but consumers and business will not have access to highest quality goods and services

1.1% EU GDP
40% ICT

Slower Global Growth <3%

HARD AND SOFT INFRASTRUCTURE
- Enable and encourage private sector investment.
- Government infrastructure investment in cases where a business case cannot (yet) be made
- Invest in the right forward looking skills and education
- Ensure the educational sector responds to business skills needs

FRAMEWORK CONDITIONS
- Remove barriers to enable the demand side to play its full role
- Implement full Single Market in practice, (ICT-enabled) services, digital and telecom markets
- Harmonise regulation, especially for start-ups and SMEs
- Simple single market frameworks
- Facilitate access to finance, especially for innovation, start ups and allow scaling up

ICT READINESS
- Develop a clear & comprehensive long-term vision for role of ICT in growth involving all stakeholders
- Lead by example , e.g. on adopting and implementing new technologies and having ICT-skilled managers
- Use public procurement to aggregate demand and encourage the use of desired technologies
- Increase e-government offerings and use

POLICY PILLARS

Source: The Conference Board

Testing current policy against scenarios

- Differentiate between espoused policy and what can be observed in practice
- Current policy is focused on the supply side, even though it contains elements of enabling the demand side; we call it a “support for supply side” framework
- Going forward, greater emphasis is needed on enabling the demand side to play its full role, especially given the importance of network and scale effects in the growth impacts of these technologies

A revised policy narrative needs to support the supply side with the aim to enable and foster aggregation of demand (1/1)

1. Urgency to act is now because of rapid changes in digital technology and use
2. Complete the Single Market (especially in services) and the Single Digital Market
3. Remove barriers through the reduction, removal, and harmonisation of standards, rules, regulations, and laws that inhibit the aggregation of demand
4. Focus on needs and use of consumers and businesses: simplify rules and procedures (e.g. for engaging in cross-border activities and recruitment) and access to finance, especially for smaller firms and start-ups (where many of the new jobs will be created)

A revised policy narrative needs to support the supply side with the aim to enable and foster aggregation of demand (1/2)

5. Balance between scale (to support aggregation of demand) and competition (to support diversity of offerings and keep competitive pricing)
6. Give innovation and new business models room to develop by enabling and facilitating change and experimentation
7. Member State governments and the EU can use government procurement policies to aggregate demand across borders and put in place experimental and pilot programs to further integrate cross-border capabilities
8. Monitor implementation in practice