



Digitising European Industry





Günther H. Oettinger *"Europe will only be able to maintain its leading role if the digitisation of the industry is successful and fast. It requires a joint effort across Europe to attract the investments we need for growth in the digital economy."*

Commissioner for Digital Economy & Society

Elżbieta Bienkowska
Commissioner for Internal Market,
Industry, Entrepreneurship & SMEs

"The digital economy merges with the real economy. We need leadership and investment in digital technologies in areas like advanced manufacturing, smart energy, automated driving or e-health."



Carlos Moedas *The European Open Science Cloud will make science more efficient and productive and let millions of researchers share and analyse research data in a trusted environment across technologies, disciplines and borders."*

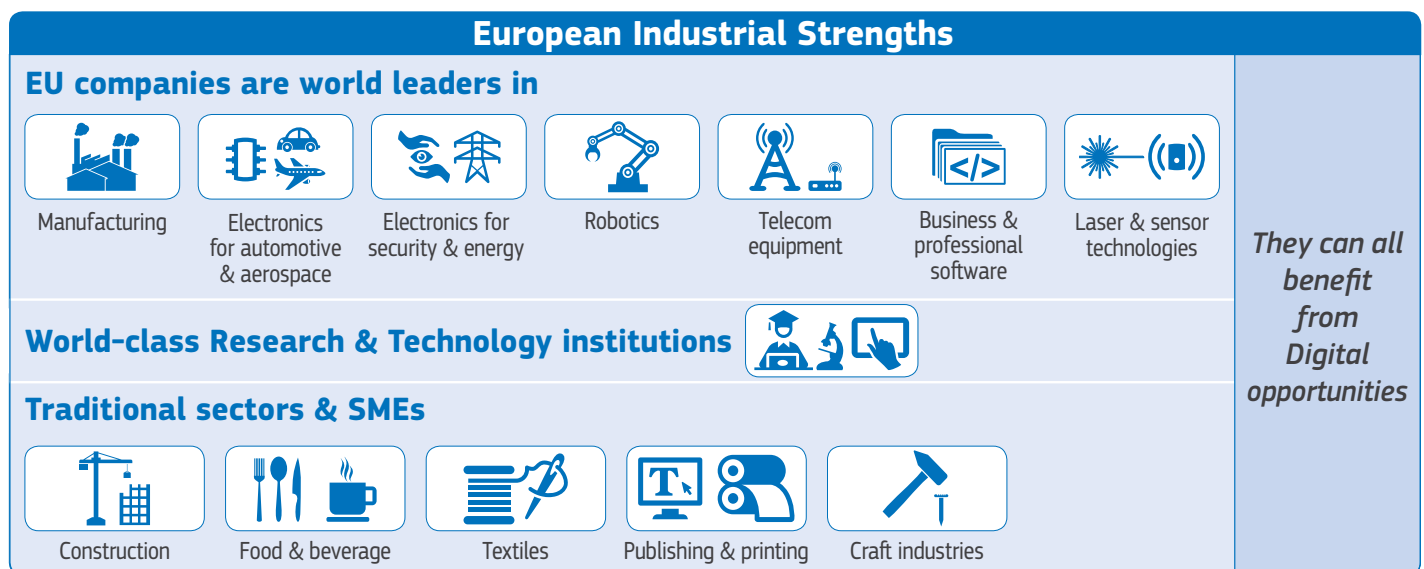
Commissioner for Research, Science & Innovation

Digitising European Industry

We stand on the brink of a new industrial revolution, driven by technological breakthroughs such as the Internet of Things (IoT), cloud computing, big data analytics, robotics and 3D printing. They open new horizons for industry to become more efficient, to improve processes and to develop innovative products and services. They also help industry to respond to customers' demand for personalised products & services, safety and comfort as well as improved energy and resource efficiency. European industry is well positioned to make the most of this digital opportunity.

European industry is strong in sectors such as electronics for automotive, security and energy markets, manufacturing, robotics, telecom equipment, business software, and laser and sensor technologies. Europe also hosts world-class research and technology institutes.

However, while many parts of the economy have been quick to take up digital technologies and processes, high-tech sectors face strong competition from other parts of the world and many traditional sectors and small and medium enterprises (SMEs) are lagging behind.



The goal of the EU's first industry-related initiative of the [Digital Single Market package](#) is to ensure that Europe is ready for the growth in the emerging markets for future digital products and services. This will require sustained and coordinated investment from the public and private sectors.

Why do we need this?

For a smooth transition to a smart economy

To prepare the next generation of products & services

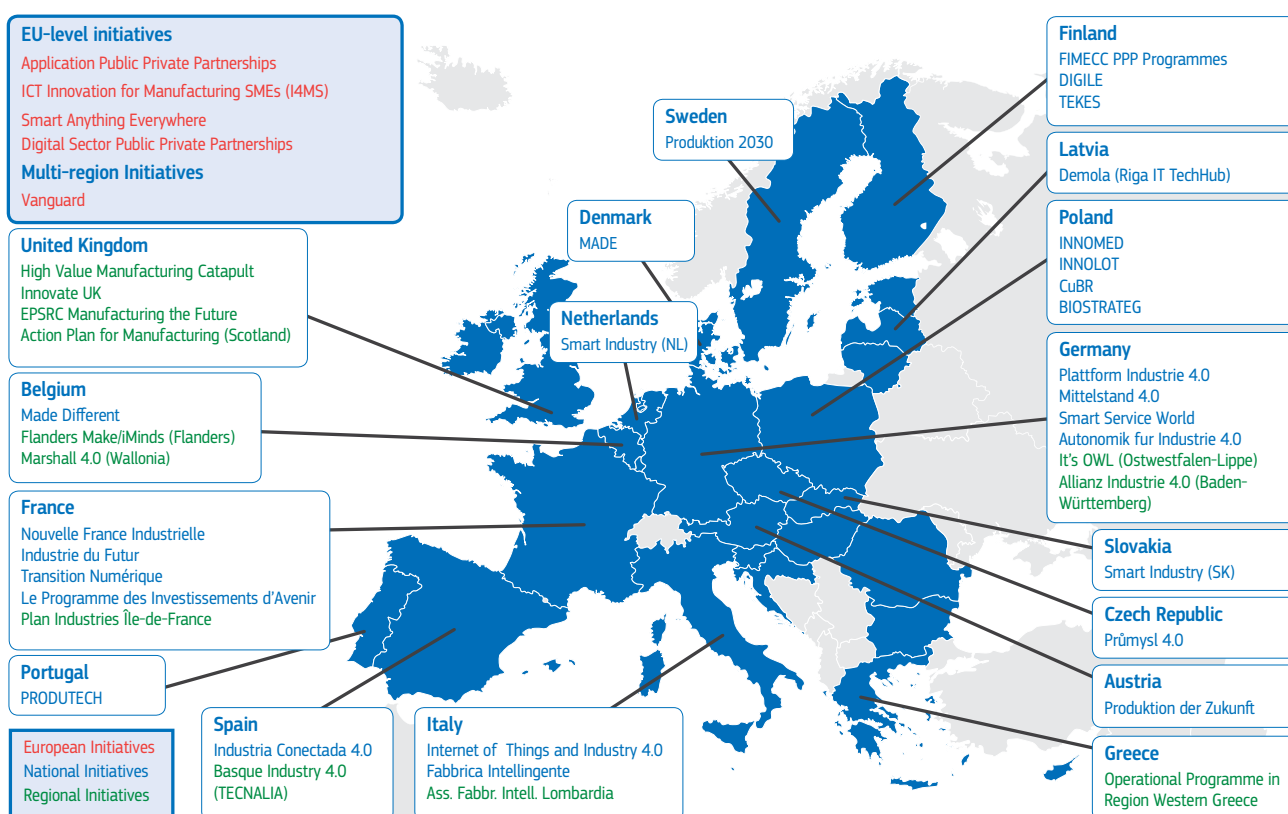
To boost innovation capacity across industry

To increase EU GDP by €110bn/year

Building on Europe's strengths

Building on and complementing the various national initiatives for digitising industry, such as Industrie 4.0, Smart Industry and l'industrie du futur, the Commission will use its policy instruments, financial support, coordination and legislative powers to trigger further investments in all industrial sectors.

This includes working with the EU's Member States to focus investment in public-private partnerships; pooling resources for ground-breaking developments in digital technologies and platforms including world-class cloud infrastructure for science & innovation as well as large scale test-beds to accelerate standards setting.



What can we do?

The biggest gains can come from triggering further public and private investments to significantly boost the digital innovation capacity of Europe. A priority should therefore be to link up the many existing EU, national and regional initiatives to better focus investments and make the most of the opportunities offered by the [European Fund for Strategic Investments](#) and [European Structural and Investment Funds](#).

Develop a pan-European network of Digital Innovation Hubs for businesses to access and test digital innovations in a safe environment.

The EU's digital and industrial public private partnerships are not only producers of innovation; they also bring together the best of the policy & private sector to coordinate EU-wide efforts with national and industrial strategies.

Encourage more pooling and alignment of resources. If Member States were to focus at least €3 billion per year of national and regional R&D&I investments to supporting these strategies, Europe would see a radical change in its innovation capacity.

Legislation needs to look to the future, for example by clarifying the ownership of data generated by sensors and smart devices, reviewing rules on safety and liability of autonomous systems and presenting legislation on the free flow of data.

We need to look at how the needs of industry for a skilled labour force can be met by our education and training systems, for example, through the [EU's Grand Coalition for digital jobs](#) and through the EU skills strategy.

Boosting Europe's Digital Innovation Capacity

Digital Innovation Hubs across Europe

Digital innovation hubs can help ensure that every company, large or small, high-tech or not, can grasp the digital opportunities and access the knowledge and testing facilities which it needs.

Europe already hosts many successful hubs like the micro-tech cluster in southern Germany where institutes such as Fraunhofer and university labs play an essential

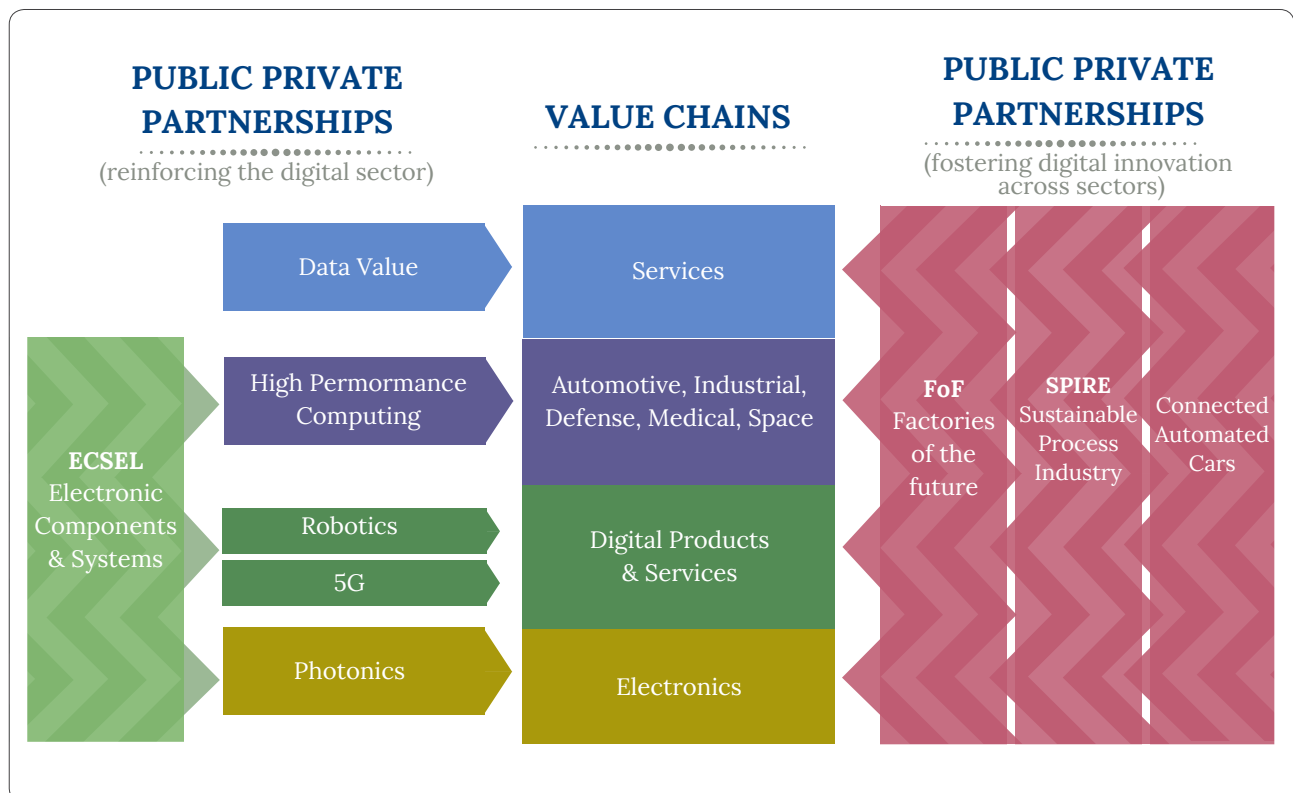
role, or the Grenoble digital innovation eco-system around French institutes like CEA or INRIA.

There is space for more centres to be based in technical universities or research organisations, providing companies, in particular SMEs, with facilities for digital innovation; advice on potential sources of funding/finance; space for experimentation; and help for workers to find training.

Leadership through Partnerships

The European Commission has established Public Private Partnerships with industry, from robotics and electronics to 5G and [big data](#).

These Public Private Partnerships can do even better, by focusing on key technologies and on large-scale projects working across sectors and technologies, like the Internet of Things, big data and cloud, autonomous systems and artificial-intelligence or 3D printing. We can also move faster on areas like the Connected Smart Factory or Connected and automated cars.



Advancing the Internet of Things in Europe

Today, less than 1% of objects are connected to the Internet, but there are likely to be almost 6 billion IoT connections within the EU in 2020. The IoT blurs the lines between products, services and industry sectors. It means new innovative services or applications; better products

with built-in services or applications; more efficient processes; improved energy and resource efficiency; better understanding of customers' needs; increased flexibility and more possibilities for sharing.

What can the Commission do?

- **Build a single market for a trusted IoT:** The right standards for interoperability, and open cross-sector platforms enable IoT devices and services to connect seamlessly, and scale-up, anywhere in the EU. We need to insure confidence and high standards for the protection of personal data and security, notably through a Trusted IoT label.
- **Invest in innovation:** with IoT initiatives in high-growth areas including smart homes; personal wellness applications and wearable devices; smart manufacturing; smart cities; and smart farming and food security.

ICT Standards: Boosting Digital Innovation

In the Digital Single Market, billions of connected devices – including phones, computers & sensors – should communicate safely and seamlessly, regardless of their manufacturer, technical details, or country of origin. For this they need a common language: standards.

But in areas such as eHealth or Smart Cities, conflicting or confused standards mean innovations often cannot easily be connected up and reused from one hospital or one city

to the next – this means that good ideas cannot grow. The rapid change and increased convergence of digital technology means that the traditional standard setting process falls short. This prevents European companies from scaling up in the face of fierce global competition. Moreover, digital businesses increasingly define standards outside traditional standard definition organisations, and typically outside Europe.

The Commission wants to speed up the standard setting process by:

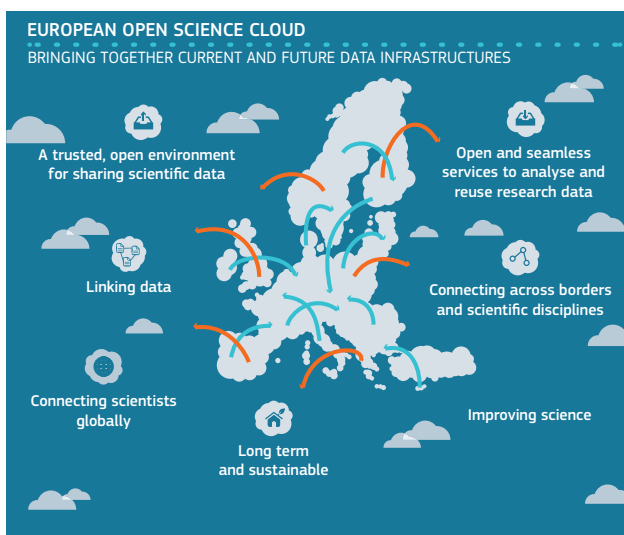
- focusing on five priority areas, when asking industry and three European Standard Setting organisations [CEN/CENELEC](#) and [ETSI](#) standardisation bodies to develop standards. These areas are: 5G, cloud computing, internet of things, data technologies and cybersecurity. This will bring resources, researchers, innovators and standard-setters together more effectively
- co-financing the testing and experimentation of technologies to accelerate standards setting including in relevant public-private partnerships. This will help deliver standards when they are needed, to spur innovation and business growth.

This faster, more focused approach will speed up the development and take-up of technologies such as smart grids, mobile health services, connected vehicles and other sectors. Global standard setting is a strategic element of European industrial policy. It allows innovations to scale up in Europe and then compete globally. The EU plans to support participation of European experts in international standardisation decisions, so European ideas can contribute to global solutions.



Capitalising on the Data Revolution

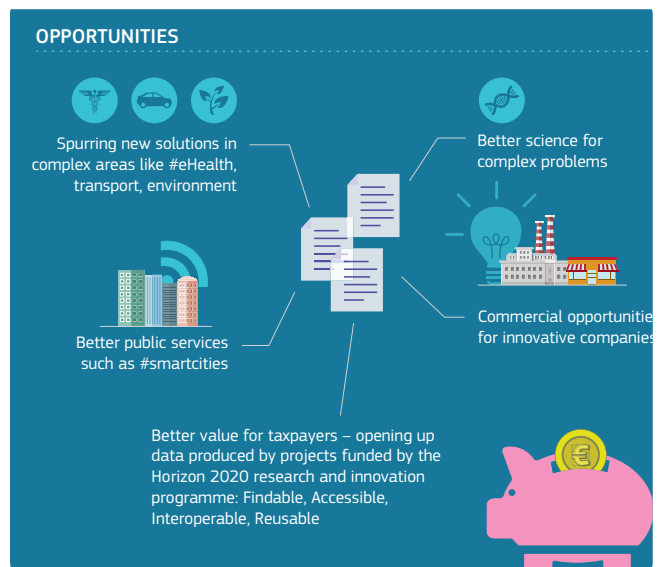
Just as the advent of computers transformed our world in previous decades, the combination of Big Data and cloud computing is changing our economy and society and bringing about major industrial and social innovation. This offers new possibilities to learn, to share knowledge, to carry out research and to develop and implement public policies. That is why the European Commission is proposing a European Cloud Initiative.



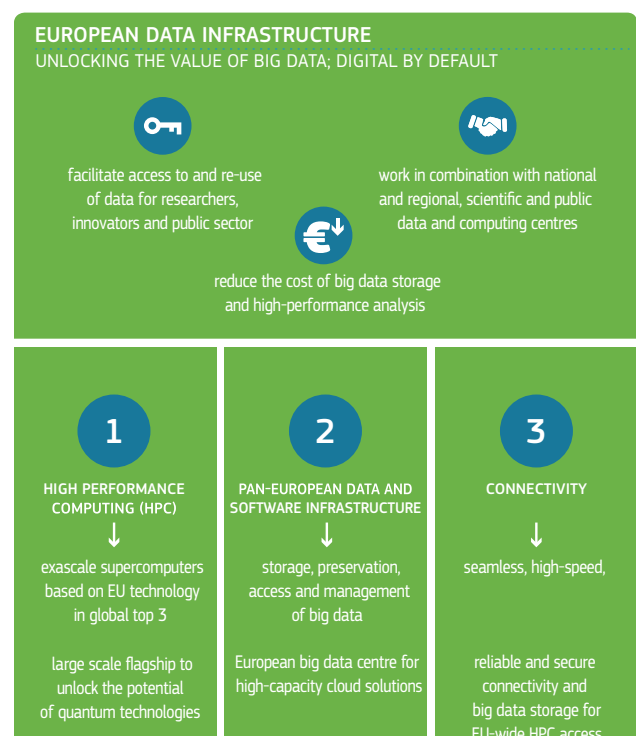
Underpinning the European Open Science Cloud is the **European Data Infrastructure**, which provides access to world-class **High Performance Computing** capability, high-speed connectivity and leading-edge data and software services. It will include next-generation, large scale (“exa-scale”) supercomputers for the management of big data.

The objective is to see a supercomputer based on EU technology among the top 3 worldwide by 2022.

A flagship initiative to be launched in 2018 will explore **quantum technologies**, which promise to solve computational problems that are beyond the capacity of current supercomputers.

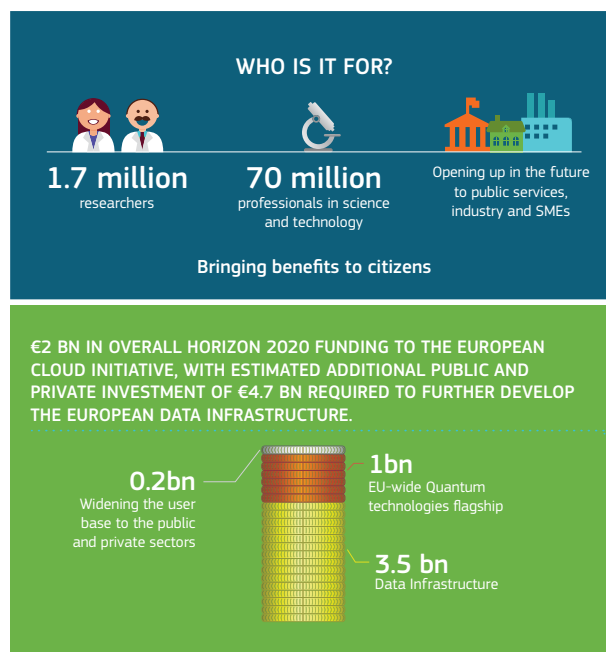


The leading element of this initiative will be a European **Open Science Cloud**, which will offer a trusted, open environment for the scientific community to store, share and re-use scientific data and results across borders and across disciplines.



Over time, the initiative can generate revenue of its own as it is more widely used by the scientific community, by business, including SMEs, and the public sector, leading to cheaper, better and faster, and interconnected public services.

Achieving these ambitious goals will be a collaborative effort which needs commitment from the Member States, industry and other stakeholders. Over its lifetime, it is estimated that Horizon 2020 may contribute over €2 billion to the European Cloud initiative. But it will need a solid financing base to get off the ground, estimated at just under €5 billion over a period of five years.



Digital Public Services Fit for the Future

People and businesses are still not getting the full benefit from digital public services that should be available seamlessly across the EU.

If we carry out the 20 steps set out in the eGovernment action plan, we can make the EU a better place to work, live and invest. These steps include:



- setting up a **digital single gateway** enabling users to obtain all information, assistance and problem-solving services needed to operate efficiently across borders.
- interconnecting all business registries and insolvency registers and connecting them to the **eJustice portal**, which will become a one-stop shop.
- setting up a pilot project with administrations that will apply the **“once-only” principle for businesses across borders**. This means companies will only need to provide information to public authorities in one EU country, even if they operate in other EU Member States.
- helping EU Member States develop **cross-border eHealth services** such as ePrescriptions and patient summaries.
- accelerating the transition to **eProcurement**, **eSignatures** and implementation of the “once-only” principle in public procurement.

Digitising European Industry

To facilitate coordination of European, national & regional initiatives
such as Industrie 4.0 (DE), Smart Industry (NL) (SK), Nouvelle France Industrielle (FR)

Mainstreaming digital innovation across all sectors:

Setting up a pan-European network of Digital Innovation Hubs

Strengthening leadership in digital technologies

- Public-Private Partnerships
- Industrial platforms
- Large scale pilots & test beds

Preparing People for the digital age: Skills & Training

Regulatory framework:

- Free flow of data & data ownership
- Safety & liability of autonomous systems & Internet of Things

Challenges & opportunities of the Internet of Things

CLOUD



European Cloud Initiative in a data-driven economy:

- European Open Science Cloud
- European Data Infrastructure
- Widening access & building trust

High Performance Computing

Quantum

STANDARDS



Fast development in 5 priority areas:

- 5G
- Cloud Computing
- Internet of Things
- Data Technologies
- Cybersecurity

DIGITAL PUBLIC SERVICES



eGovernment Action Plan:

- New Digital Single Gateway
- eJustice Portal
- “Once-only” principle in Administrations
- Cross-border Health services
- eProcurement & “Once-only” in public procurement

To focus investments

(Horizon 2020, EU Investment Plan, EU Structural & Investment Funds, national & regional funds, private sector)

MOBILISING €50bn of public & private investments

Project Team: A Connected Digital Single Market

Andrus Ansip, Vice-President for the Digital Single Market

Creating a Digital Single Market in Europe is one of the priorities of the European Commission

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#DigitiseEU #Cloud #ICTstandards #eGov

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