EU Research Trends – April 2016

This month you can read about the European Cloud initiative, data-driven innovation, Open access, a public consultation of the next WP 18-20 on SWAFS and much more.

Trends
Commission sets out path to digitise European industry

The European Commission has presented a set of measures to support and link up national initiatives for the digitisation of industry and related services across all sectors and to boost investment through strategic partnerships and networks. The Commission proposes concrete measures to speed up the development of common standards in priority areas, such as 5G communication networks or cybersecurity, and to modernise public services. The Commission will set up a European cloud that, as a first objective, will give Europe's 1.7 million researchers and 70 million science and technology professionals a virtual environment to store, manage, analyse and re-use a big amount of research data (press release).

While many parts of the economy have been quick to take up digital technologies and processes, European industry across sectors and regardless of a company's size must fully use digital opportunities if it is to be globally competitive. Traditional sectors (like construction, agro-food, textiles or steel) and SMEs are particularly lagging behind in their digital transformation. Recent studies estimate that digitisation of products and services will add more than 110 billion EUR of revenue for industry per year in Europe in the next five years.

Several EU Member States have already launched strategies to support the digitisation of industry. But a comprehensive approach at European level is needed to avoid fragmented markets and to reap the benefits of digital evolutions such as the internet of things.

As part of this approach, the Commission will:

- **help coordinate national and regional initiatives on digitising industry** by maintaining a continuous EU-wide dialogue with all actors involved. A governance framework will be set up with Member States and industry.

- **focus investments in EU's public-private partnerships** and strongly encourage the use of the opportunities offered by the **EU Investment Plan** and **European Structural and Investment Funds**.

- **invest 500 million EUR in a pan-EU network of digital innovation hubs (centres of excellence in technology)** where businesses can obtain advice and test digital innovations.

- **set up large-scale pilot projects to strengthen internet of things, advanced manufacturing and technologies** in smart cities and homes, connected cars or mobile health services.

- **adopt future-proof legislation** that will support the free flow of data and clarify ownership of data generated by sensors and smart devices. The Commission will also review rules on safety and liability of autonomous systems.

- **present an EU skills agenda** that will help give people the skills needed for jobs in the digital age.

The European cloud initiative (press release) also forms part of this package and will help Europe lead in the data-driven economy.

Overall, the plans should mobilise over **50 billion EUR of public and private investments in support of the digitisation of industry**.

Priority standards to boost digital innovation

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

The Commission proposes concrete measures to speed up the standard setting process by:

- focusing on **five priority areas**, when asking industry and standardisation bodies to work on standards. These areas are: **5G, cloud computing, internet of things, data technologies** and **cybersecurity**.

- **co-financing the testing and experimentation of technologies to accelerate standards setting** including in relevant public-private partnerships. This will ensure timely delivery of standards to spur innovation and business growth.

This faster, more focused approach will also speed up the development and take-up of technologies such as smart grids, mobile health services, connected vehicles and other sectors. The EU plans to support participation of European experts in international standardisation decisions, to help ensure European ideas contribute to global solutions.

Digital public services

People and businesses are still not reaping the full benefit from digital public services that should be available seamlessly across the EU. Today's e-government action plan will modernise digital public services and make the EU a better place to live, work and invest.

The Commission put forward 20 measures to be launched by the end of 2017. The Commission will notably:

- set up a **digital single gateway** enabling users to obtain all information, assistance and problem-solving services needed to operate efficiently across borders.

- interconnect all business registries and insolvency registers and connect them to the **e-justice portal**, which will become a one-stop shop.

- set 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 paperwork to public authorities in one EU country, even if they operate in other EU Member States.

- help EU Member States develop **cross-border e-health services** such as e-prescriptions and patient summaries.

- accelerate the transition to **e-procurement, e-signatures** and implementation of the "once-only" principle in public procurement.

This set of initiatives is the first industry-related package under the Digital Single Market strategy. It was announced by President Juncker in Paris in October 2015 (speech).

It follows a first set of proposals adopted in December 2015 on copyright (press release) and digital contracts (press release) as well as draft decision on spectrum coordination in February 2016 (press release). The Digital Single Market strategy includes 16 initiatives to be presented by the end of this year.

European Cloud Initiative to give Europe a global lead in the data-driven economy

The Commission presented its blueprint for cloud-based services and world-class data infrastructure to ensure science, business and public services reap benefits of big data revolution.

Europe is the largest producer of scientific data in the world, but insufficient and fragmented infrastructure means this 'big data' is not being exploited to its full potential. By bolstering and interconnecting existing research infrastructure, the Commission plans to create a new **European Open Science Cloud** that will offer Europe's 1.7 million researchers and 70 million science and technology professionals a virtual environment to store, share and re-use their data across disciplines and borders. This will be underpinned by the **European Data Infrastructure**, deploying the high-bandwidth networks, large scale storage facilities and super-computer capacity necessary to effectively access and process large datasets stored in the cloud. This world-class infrastructure will ensure Europe participates in the global race for high performance computing in line with its economic and knowledge potential.

Focusing initially on the scientific community - in Europe and among its global partners - the user base will over time be enlarged to the public sector and to industry. This initiative is part of a package of measures to strengthen Europe's position in data-driven innovation, to improve competitiveness and cohesion and to help create a Digital Single Market in Europe (press release).

Carlos **Moedas**, Commissioner for Research, Science and Innovation, said: "*Our goal is to create a European Open Science Cloud to 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. We listened to the scientific community's plea for an infrastructure for Open Science and with this comprehensive plan we can get down to work. The benefits of open data for Europe's science, economy and society will be enormous."

Günther H. **Oettinger**, Commissioner for the Digital Economy and Society, said:"*The European Cloud Initiative will unlock the value of big data by providing world-class supercomputing capability, high-speed connectivity and leading-edge data and software services for science, industry and the public sector. With this initiative, our ambition is to be in the global top-three in high performance computing by 2020. We will also be looking into the potential of quantum technologies which hold the promise to solve computational problems beyond current supercomputers.*"

The European Cloud Initiative will make it easier for researchers and innovators to access and re-use data, and will reduce the cost of data storage and high-performance analysis. Making research data openly available can help boost Europe's competitiveness by benefitting start-ups, SMEs and data-driven innovation, including in the fields of medicine and public health. It can even spur new industries, as demonstrated by the Human Genome Project.

The Commission will progressively put in place the European Cloud Initiative through a series of actions, including:

- As of 2016: creating a **European Open Science Cloud** for European researchers and their global scientific collaborators by integrating and consolidating e-infrastructure platforms, federating existing scientific clouds and research infrastructures, and supporting the development of cloud-based services.

- 2017: **opening up by default all scientific data** produced by future projects under Horizon 2020 to ensure that the scientific community can re-use the enormous amount of data they generate.

- 2018: launching a flagship-type initiative to accelerate the nascent development of **quantum technology**, which is the basis for the next generation of supercomputers.

- By 2020: developing and deploying a large scale **European high performance computing, data storage and network infrastructure**, including by acquiring two prototype next-generation supercomputers of which one would rank among the top three in the world, establishing a European big data centre, and upgrading the backbone network for research and innovation (GEANT).

In addition to the European research community, the European Open Science Cloud and the European Data Infrastructure will be accessible and bring benefits for a host of other users:

- **Businesses** will have cost-effective and easy access to top level data and computing infrastructure, as well as a wealth of scientific data enabling data-driven innovation. This will particularly benefit **SMEs**, which typically lack access to such resources.

- **Industry** will benefit from the creation of a large-scale cloud eco-system, supporting the development of new European technologies such as low-power chips for high performance computing.

- **Public services** will benefit from reliable access to powerful computing resources and the creation of a platform to open their data and services, which can lead to cheaper, better and faster interconnected public services. Researchers will also benefit from online access to the wealth of data created by public services.

The public and private investment needed to implement the European Cloud Initiative is estimated at **6.7 billion EUR**. The Commission estimates that, overall, **2 billion EUR** in Horizon 2020 funding will be allocated to the European Cloud initiative. The estimation of the required additional public and private investment is **4.7 billion EUR** in the period of 5 years.

More information

- Press release: Commission sets out path to digitise European industry

- Questions and answers on the set of measures to digitise European industry

Communications adopted:

- Communication on Digitising European Industry: Reaping the full benefits of a Digital Single Market

- Communication on a European Cloud Initiative-Building a competitive data and knowledge economy in Europe

- Communication on an EU e-Government Action Plan 2016-2020. Accelerating the digital transformation of government

- Communication on Priorities of ICT Standardisation for the Digital Single Market

Extension of deadline for contributing to the stakeholder consultation on the future e-infrastructures

A new deadline for the consultation on the future e-infrastructures following adoption of the European Cloud Initiative.

The Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee and the Committee of the Regions: European Cloud Initiative – Building a competitive data and knowledge economy in Europe has been adopted on 19 April 2016.

The deadline of the Consultation on European e-infrastructure has been extended to the 15 May 2016 to enable contributors to take the content of this document into account while preparing their contribution .

Can big data deliver on its promise?

Research Seminar on Data-driven Innovation, Brussels 27 April

According to the UN Global Pulse, more data was created in 2011 than in the whole of human history, at least since the invention of the alphabet. Today, 315 million Europeans use the Internet every day. This migration of economic and social activities to the internet, along with the dramatically lower costs of data collection, storage, and processing and rising computing power, means that data analytics are increasingly driving innovation. In this sense, data-driven innovation has become an important new source of growth. It is estimated that a digital single market can create up to hundreds of thousands of new jobs. Data-driven innovation has the potential to significantly enhance productivity, resource efficiency, economic competitiveness, and social wellbeing. Generating value at the different stages of the data value chain will be at the center of the future knowledge economy. Good use of data can bring opportunities also to more traditional sectors such as transport, health or manufacturing.

At the seminar, hosted by the University of Borås, the focus was on how to gain a competitive advantage through a sociotechnical perspective on data-driven innovation. Data-driven innovation was described as the "Strategic utilization of data and analytics to improve or foster new processes, products, services, and markets" (OECD 2015). Data-driven Innovation is about processes, practical results and related to the discussion on **openness of data**. The University of Borås is particularly interested in the so-called "One-bucket"-concept where the idea is to get all the different data sources into one bucket. This can potentially lead to real-time data-driven decision-making, which will speed up the adaptation of technology and result in decision-making based on the newest data available.

There is a great need of more research within the field of data-driven innovation in order to highlight both challenges and opportunities. Horizon 2020 offers different possibilities of funding within the field of ICT. You can see a list of ICT-related activities in the 2016-2017 Work Programme here.

Further reading

Search for current funding opportunities related to ICT here.
European Commission report on The Digital Agenda for Europe
OECD report on Data-Driven Innovation

Moedas: journal papers based on EU-funded science should be free to access

"We must transition from a pay-to-read to a free-to-read culture. As I see it, European success now lies in sharing as soon as possible, because the days of 'publish or die' are disappearing. The days of open science have arrived," Moedas told a conference on open science in Amsterdam. The event was organised under the Dutch EU Council presidency

Moedas argued that freeing data from behind paywalls would be an economic boon for Europe. He cited a study from the European Molecular Biology Laboratory which demonstrated that by making all its data openly available the institute generates a benefit to users and their funders of around 1.3 billion EUR per year. "This is equivalent to more than 20 times the direct operational cost of the institute," Moedas noted.

And free access will not sound the death knell for the publishing business. "It just means different revenue. It's like you're a music producer going from selling records to [making your music available] on Spotify," the Commissioner added.

The Commission plans to set up an open science policy platform in May, with a mandate to investigate how subscription publishers can flip to open access quicker.

The task will be far from straightforward. The clamour for open science may be going main stream but steering EU-wide reform will continue to be a hard line to tread for the Netherlands, given the size and influence of the science publishing sector in the country.

Added to that, "are 433 different policies regarding open access in Europe," said Robert-Jan Smits, the Commission's Director-General for Research and Innovation.

The Dutch push to roll back publisher power will culminate in a meeting of Europe's research ministers on May 26.

"It's D-Day – then we will see who the true believers in open access are and which politicians have just been paying lip service to the topic," Smits said.

Open Access to scientific publications and research data in Horizon 2020
Affordable and easy access to scientific information is very important for the scientific community itself, but also increasingly important for innovative small businesses. Improving access to scientific information is also about increasing openness and transparency, which are essential features of Responsible Research and Innovation and contributes to better policy-making.
All projects receiving **Horizon 2020** funding will have the obligation to make sure any peer-reviewed journal article, which they publish, is openly accessible, free of charge. The 2016-2017 Work Programme has been updated meaning that open access to research data is now the standard within all areas of Horizon 2020. Data, which form the basis of publications, should be openly accessible. However, by giving a short explanation the individual projects have the possibility to request an opt-out. The updated rules on open access to research data will be added in a new Annex L.

More information
The NPR Report was released in February 2016. The report provides an overview on access to and preservation of scientific information in the EU Member States, as well as Norway and Turkey.

Major campaign launched to promote sustainable work and healthy ageing

Demographic change is occurring throughout Europe: the population is ageing. Moreover, this ageing is mirrored in the workforce. Consistently low birth rates and higher life expectancy will transform the shape of the EU-28's age pyramid and this development is already becoming apparent in several EU Member States. This will, in turn, lead to an increased burden on those of working age to provide for the social expenditure required by the ageing population for a range of related services.

For all these reasons, the Commission and the European Agency for Safety and Health at Work in cooperation with the Dutch EU Presidency has launched a major Europe-wide campaign: Healthy Workplaces for All Ages. The campaign promotes sustainable work and workplace safety and health in the context of the ageing workforce.

The campaign focuses on Europe's enterprises (both private and public) and the need to promote sustainable work and healthy ageing from the beginning of working life. By doing so, enterprises will be protecting their workers' health up to and beyond retirement age and their organisations' productivity.

This campaign's objectives are four-fold:

- to promote sustainable work and healthy ageing from the beginning of working life;

- to highlight the importance of risk prevention throughout working life;

- to assist employers and workers (including in small and medium-sized enterprises) by providing information and tools for managing occupational safety and health in the context of an ageing workforce;

- to facilitate information and good practice exchange.

More information:

Press release - World's largest campaign launched to promote sustainable work and healthy ageing for all

Factsheet - Facts and figures: Healthy Workplaces Campaign for All Ages 2016-17

Video – Press conference by Commissioner Thyssen

New EC report on EU's innovation performance

The European Commission's Directorate-General for Research and Innovation recently published a report on the EU's science, research and innovation performance in relation to the three goals of Open Innovation, Open Science and Open to the World.

Open Innovation aims to get more actors involved in the innovation process and create an ecosystem in which innovation flourishes. Open Science aims to promote greater collaboration, access to and reuse of research data and results and is the foundation of excellent science and innovation. Open to the World aims to ensure that Europe's role as a world leader in science translates into more global research partnerships and a leading voice for the EU in global debates. While the report shows that the EU continues to be one of the world's major players in science and technology, it also shows that the EU's economy needs to become more dynamic and innovation-intensive.

[Download the full report on EU Bookshop](#)

[More on EUREKA's strategy towards becoming a leading innovation stakeholder in the European Research Area (ERA)](#)

The European Commission has launched two Horizon prizes worth 3.5 million EUR and 1.5 million EUR to develop the cleanest combustion engines and to cut emissions from existing diesel engines.

1. Cleanest Engine of the Future

 3.5 million EUR Horizon Prize - Applications are open from now until 20 August 2019

The Horizon Prize for the Cleanest Engine of the Future aims to pave the way to this future engine by developing any technology that cleans the exhaust gases. This might be a filter, an additive, a combustion system or any other technology: it is up to the creativity of European scientists and industrial experts.

2. Engine Retrofit for Clean Air

 1.5 million EUR Horizon Prize - Applications are open from now until 12 September 2017

The Horizon Prize for the Engine Retrofit for Clean Air aims to find a way of cleaning existing diesel engines. This would offer a temporary solution until a better engine is invented or before electric cars become a mainstream.

Applicants from all fields, whether they are established researchers or innovative newcomers, are encouraged to apply for these prizes. Applicants have total freedom in the approach they take to deliver the breakthrough solution. The rules of contest of both prizes are available online at the dedicated: https://ec.europa.eu/research/horizonprize/index.cfm.

Public consultation on Horizon 2020 'Science with and for Society' Work Programme 2018-2020

Contributions are particularly sought from civil society organisations, businesses, research institutions, policy makers, higher education institutions, science museums, science shops, scientific centres of excellence, local public authorities, cities of scientific culture, innovators and entrepreneurs (non-exhaustive list).

The objective of Part V of Horizon 2020 'Science with and for Society' (SWAFS) is "to build effective cooperation between science and society, to recruit new talent for science, and to pair scientific excellence with social awareness and responsibility".

The purpose of the present open public online consultation is to collect views and opinions on the strategy, scope, objectives, and expected impacts of the Horizon 2020 'Science with and for Society' Work Programme 2018-2020.

Contributions to the present consultation will feed into preparation of the next SWAFS Work Programme 2018-2020. The Commission expects to develop the content of Work Programme 2018-2020 during the fourth quarter of 2016 and first semester 2017, with adoption and publication of calls for proposals in the autumn of 2017.

The consultation runs until 4. July 2016

Link to the consultation

Call for proposals under the 2016 WP of the Bio-based Industries Public-Private Partnership

The European Commission has launched a call for proposals under the 2016 work programme of the Bio-based Industries Public-Private Partnership (BBI).

The BBI is a partnership between the EU and the Bio-based Industries Consortium aiming at increasing investment in the development of a sustainable bio-based industry sector in Europe. It aims at providing environmental and socio-economic benefits for European citizens, increasing the competitiveness of Europe and contributing to establishing Europe as a key player in research, demonstration and deployment of advanced bio-based products and biofuels. The BBI will also play an important role in achieving a bioeconomy in Europe.

The BBI focuses on:

- **Feedstock**: foster a sustainable biomass supply with increased productivity and building new supply chains

- **Biorefineries**: optimise efficient processing through R&D and demonstrate their efficiency and economic viability at large-scale demo/flagship biorefineries

- **Markets, products and policies**: develop markets for bio-based products and optimise policy frameworks

Proposals are invited for the following call: H2020-BBI-JTI-2016.

The deadline for submitting a proposal is 8 September 2016.

More information:

You can read more about BBI here.

For more information on the 2016 work plan, please follow this link.

Belgian Research Action through Interdisciplinary Networks
BELSPO, the **Belgian Science Policy Office**, will in the beginning of May launch its multi-year framework programme for research: BRAIN-be. The framework programme is structured around six thematic axes:
1. Ecosystems, biodiversity, evolution
2. Geosystems, universe and climate
3. Cultural, historical and scientific heritage
4. Federal public strategies
5. Major societal challenges
6. Management of collections

The last call for proposals of the BRAIN programme is a joint call under the thematic axes 4 and 5. The total budget for this call is 7.5 million EUR and distributed over three topics:
- Violence and discrimination (2.5 million EUR)
- Migration (2.5 million EUR)
- Security (2.5 million EUR)

The call is partially open to foreign researchers as project partners in cooperation with one or more Belgian research institutes. The requested budget for international partners cannot exceed more than 20 % of the total budget of the proposal and may only cover staff and operating costs. The non-Belgian partner is responsible for the co-funding, from other sources, for at least the same amount as the one requested from BELSPO.
Expression of interest: 15 June 2016.
Deadline for submitting a proposal: 12 September 2016 at 12:00.
More information
For more information about the programme and the various thematic areas, please follow this link.
The call will be available on the following link.

News in brief

The Regulation on Data Protection was formally adopted in April. It will enter into force in two years from now.

A new agreement associating Georgia to Horizon 2020 was signed in April

Workshop on opportunities for dual-use technologies: Components

28. June 2016, Avenue Beaulieau 25, room S1, Brussels, Belgium

The security and non-dependence of the supply of specific electronic components are major concerns for Europe. Research and Innovation programmes run by the European Commission (EC), the Electronic Components and Systems for European Leadership Joint Undertaking (ECSEL JU) and the European Defence Agency (EDA) address technologies in electronic components and systems areas such as sensors, new materials and advanced digital systems. This workshop will focus on dual-use of electronic component

Register

ETSI - From Research To Standardisation

10-11 May 2016, Sophia Antipolis, France

In its Headquarters in Sophia Antipolis, ETSI will hold a workshop on the subject "From Research To Standardization" in the context of the EU's H2020 programme. The workshop will support researchers in disseminating and exploiting their results through ICT standardisation. It serves as a platform for research consortia to be informed about standardisation plans and to address a wider community to find supporters and allies.

Further information ETSI website

H2020 European Health/Rare Diseases Brokerage Event

12-13 May 2016, Oslo

A Nordic-French Event will be organized at the premises of the Research Council of Norway, to present and discuss the upcoming H2020 calls on rare diseases in the 2017 call from the Societal Challenge 1 – Health, demographic change and wellbeing programme.

The objective is to generate more H2020 applications targeting these calls. The seminar is open to all parties interested in rare diseases. Partners from all sectors are welcome; researchers, SME's, public sector representatives and NGOs.

More information and registration

Maive Rute appointed Deputy Director General of JRC

The European Commission has appointed Ms Maive Rute as Deputy Director-General of the European Commission's science and knowledge service, the Joint Research Centre (JRC).

Ms Rute, an Estonian, took up her post on 16 April. She joined the European Commission in 2005 to become Director for the Promotion of SMEs, Competitiveness and Entrepreneurship in DG Enterprise and Industry. She brought in her extensive management experience in the Estonian public sector, notably three years spent as a Managing Director of the Rural Credit Guarantee Fund and five years as CEO of the Estonian Credit and Export Guarantee Fund KredEx. In the Commission, Ms Rute also worked as Director for Biotechnologies, Food and Agriculture Research and as a Resource Director in DG Research and Innovation, a job she is currently holding.

Ms Rute graduated as an agricultural economist from the Estonian University of Life Sciences and holds an MBA from the Danube University Krems, Austria, and a Masters in international politics from CERIS, Belgium.

Digital Infrastructures for Research conference 2016 - Call for participation

28.-30. September 2016, Krakow, Poland

Europe's leading e-infrastructures invite all researchers, developers and service providers for three days of brainstorming and discussions at the Digital Infrastructures for Research event.

The conference on Digital Infrastructures for Research (DI4R 2016) is designed with research communities in mind and aims to foster broader adoption of digital infrastructure services and promote user-driven innovation.

All researchers, developers and service providers are invited to submit abstracts for presentations, training sessions, workshops and demonstrations through the Call for Participation. The Programme Committee welcomes submissions for full sessions, single presentations, training sessions and demonstrations on the following broad categories of interest:

- Challenges facing users and service providers: emerging needs of research collaborations, the requirements of added value thematic services and the computing needs of data-driven science. (example topics: Working with the research community and industry, community engagement, computing platforms (cloud, HTC, HPC), thematic platforms (science gateways, Virtual Research Environments).

- Services enabling research: services and frameworks needed to enable researchers to securely collaborate and share resources in a federated environment combining geographically distributed services from multiple providers and further the opportunities of Open Science. Submissions for this track should highlight benefits and challenges as seen by researchers when using existing frameworks or present ideas to address the future challenges.

- A changing environment, changing research: The environment in which research is conducted, and digital infrastructures operate, is changing rapidly. Access and provisioning of services require clear governance, engagement rules, policies and funding models. Submissions should focus on the barriers, opportunities and changes in this environment in order to address the non-technical pressures, for example social, financial, legal and policy that influence the present and future opportunities.

- Working with data: requirements of data-driven science and the solutions for finding, accessing, integrating and reusing research data. Papers that highlight requirements and opportunities for a seamless usage of digital infrastructures for data management, storage and curation as well as for linking and publishing all forms of research objects like data, software, tools, pipelines and publications would be particularly topical.

The DI4R 2016 conference is co-organised by EGI, EUDAT, GÉANT, OpenAIRE and RDA Europe, and is hosted by ACC Cyfronet AGH, Kraków's academic computing centre.

Comments or questions should be directed to Rikke Edsjö