EUROPEAN COMMISSION

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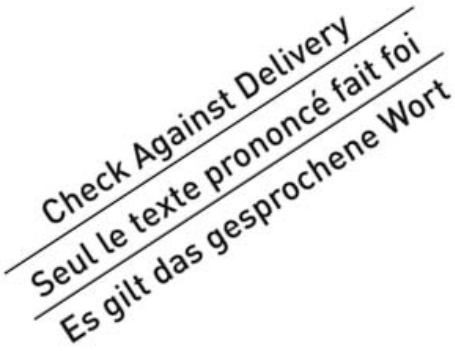
Open Access to science and data = cash and economic bonanza



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They say we are entering the era of open science.

I've said that, too. But in fact it is only partly true. Because in reality, science has always been inherently open.

Right from the start, even before the first learned societies or the earliest academic journals, the scientific community realised that it is through openness that they examine, compare and learn.

That is how one scientist's bright idea can spread to become an accepted scientific theory. How one experiment in one lab can become a foundation on which to build, and an inspiration to others.

Without that openness and sharing, scientific practice would look very different.

Now we have the Internet, the greatest tool for sharing information ever invented. The Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities, 10 years ago, recognised just that. I quote: "The Internet has fundamentally changed the practical and economic realities of distributing scientific knowledge and cultural heritage." And we need to make use of this change. Otherwise we are not doing justice to the power of digital, nor to the potential of science. And we would certainly not be doing justice to taxpayers – who, after all, pay the biggest part of the research bill and deserve to benefit as fully as possible.

Embracing this change is good for all of us: avoiding duplication while facilitating replication, accelerating discovery, and driving innovation.

Of course, you only get so far with "one size fits all". Different domains have different cultures and characteristics. But all face similar challenges, and all stand to gain from this change. And today as much as ever, it's clear that openness can transform every academic discipline, both sciences and humanities.

Making the most of that openness has been one of the main themes of my mandate as European Commissioner for the Digital Agenda. My support for open science and open access starts right back with the Digital Agenda itself, three and a half years ago. This grew to a statement of principle as we created the Innovation Union. And from there on it moved on as we planned our research and innovation policies, including Horizon 2020, and through the 2011 Open Data Strategy, the 2012 Scientific Information package and the European Research Area. In short: we've been busy. So maybe that explains why I couldn't attend recent Berlin conferences – but I'm very pleased to be here for this year's anniversary edition!

Ladies and Gentlemen, the EU has long supported research and innovation. Because investing in the future is the best way to support economic growth and tackle social problems. And in this area, as in so many others, we work best when we work together, as Europe.

Horizon 2020, the EU research and innovation programme for the next 7 years, will provide nearly 80 billion euros of EU funding for research and innovation.

The EU will be supporting open science through the whole programme. The rule will be open access to all publications that come out of it. We start with requiring open access to research data, too. And we are asking national funding bodies to do the same. That is our intention, as many of you know well.

Now it is about implementation.

How do we make that change? There are many areas to consider. From new tools and infrastructures. Resolving new technical issues, like accommodating text and data mining. To new and better ways of assessing the quality and impact of publications and other research results. Or how to preserve data for the long term. Most of all, it needs a new culture: of sharing and working together, between researchers, libraries, universities, publishers and, yes, all of us as citizens.

So here's how we're working on some of these issues.

On open access to publications, we have had a pilot underway since 2008. The lessons learned help us in implementing the new rules in Horizon 2020. For example, "Gold" open access fees may fall due after a project formally ends, so that any funding would have to be provided differently. We are coming up with ways to address this valid concern of researchers.

On research data, we will pilot ways to open this up under Horizon 2020 across a number of areas. To see how different disciplines deal with this issue in practice. How to further develop supporting infrastructure. And to understand the impact of limiting factors such as the need for security, privacy or data protection.

We are taking our work beyond Europe's borders, to reach global scale. To make the scientific resources of the world work together, interoperating and open to discovery. For example we are working with partners like the US and Australia in the Research Data Alliance to make scientific progress broader, deeper and more workable.

After all, of course, open access policies need infrastructure; a place to store and access open content. OpenAIRE, the Open Access Infrastructure for Research in Europe, already gives access to tens of thousands of documents. We can build on that success. We will continue supporting tools offering reliable and permanent access to digital scientific records. And we will continue leveraging what the scientific community has created in the past, as much as possible linking up and federating national or institutional resources.

All of this makes a lot of sense even if seen in isolation. But the case becomes overwhelming if considered in a broader context. And indeed open access is just one aspect of our push for openness.

Public administrations also hold a wealth of information. Open it up, become more transparent, and it can fuel a market worth some tens of billions of euros a year. And there are huge benefits – for citizens, for researchers, for governments themselves.

So it is great news that we have recently agreed legislation to open up the data held by public bodies. Making any charges fairer and making data easier to use and re-use.

Now governments need to start putting those ideas and opportunities into action, and recognise the benefits of an open philosophy.

And we are also looking at what is called "big data" more generally. Big data analysis can power huge innovation, with applications from manufacturing to medicine. It's a new asset class, like talent or capital. Yet without a European big data capability, we either lose out on those opportunities. Or we are forced to go abroad: with all the economic and privacy implications. Of the top 20 big data companies, 17 are from the US; just 2 from Europe. That is why earlier this month I have set out how we can start to tackle this problem by bringing the players together in a European public private partnership for big data.

Here is another example: the highest performance computers are unaffordable by any EU country alone; a piecemeal approach would be inefficient, and subscale. So we are pushing for strong cooperation in Europe, also to make sure researchers in all member states can access these resources of open digital science.

Digital tools also offer a huge opportunity for education – and much food for thought about the future of universities and higher education. Like MOOCs, Massive Open Online Courses, which allow people to learn anywhere, anytime and through any device.

In a new EU strategy we have presented ideas on opening up education. And we set up an 'Open Education' portal: a gateway to European open educational resources.

Ladies and gentlemen, from publications, to data, to software, to educational resources: opening up can help in all fields of research!

Helping us into a new era of open science: one that is good for citizens, good for scientists and good for society.