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Going for gold

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What better place could there be debating Open Access than Berlin? Over ten years ago, the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities, and its many institutional signatories, highlighted the importance of the issue. Of course, this raises the question: What is our position on this now and which direction will we take?

1. Digital game change

I am convinced that the digital world is a game changer in scientific research. We have seen this happen in other sectors, for example, the music industry, newspapers and travel.

In those areas, the Internet has completely revolutionized business models. But it did not happen easily. Traditional players have generally put up resistance and often successfully. But, eventually, a transformation comes about. At that stage, the technology is so far advanced and the pressure from users is so intense that the opportunity emerges for different types of business models. It is then a matter of whether you are part of the movement or stuck behind the times. I believe that that time has now come.

Information and communication technologies, and open access in particular, is also set to revolutionize the scientific world. It is simply a question of when and how. And, above all, who the new market leaders will be.

2. Open access is a moral obligation and crucial to society

Market players will earn money from open access. But that is really a side issue for me. For me, open access is above all a moral obligation: A moral obligation, based on the principles of openness and democracy. Actually, there is very little to say about this. For me, it is a matter of principle that the whole of society should have access to the scientific knowledge that we have all paid for.

But it is not only about a moral obligation. Open access is also essential for the development of our society. Access to scientific research enhances creativity in society.

A perfect example of this is fifteen-year-old Jack Andraka. When a friend of his family died of pancreatic cancer, Jack was determined to find a way of detecting this type of cancer at a much earlier stage. This is crucial because pancreatic cancer is virtually incurable. Early detection is essential. But science had so far been unable to achieve that.

Jack set to work. He cleverly combined different ideas. He made use of lots of the research that is available through open sources. He designed a test and had 200 experts look at it. One of them responded and offered Jack a laboratory to continue his work. The result is a faster and much cheaper cancer detection test that is highly regarded by specialists.

But just like any scientist, Jack also faced setbacks and failures. I won't go into detail on that, but at least one of these could have been prevented. In his search for the knowledge that he needed, he was held back by the closed nature of much of it. He said: "I hit a lot of paywalls (. . .) and they are stopping us".

Just like Jack, the whole of society would benefit from fast and easy access to scientific knowledge. Take, for example, a start-up company with little capital and no research capacity of its own. Or the family doctor who wants to learn about the side effects of painkillers he or she prescribes. Or the teacher who is looking for the latest scientific research on didactics in order to get the best out of students who have completely different talents and learning styles.

In other words, open access to the results of scientific research is also essential for prosperity and growth in highly developed societies. Growth is not so much dependent on the production of new knowledge. It depends much more on the ability to quickly locate new knowledge and apply it in practice, wherever that knowledge has been developed. It is what we call knowledge circulation. Open access accelerates the circulation of knowledge exponentially and worldwide.

3. Open access is inevitable

It is hardly surprising that there are all kinds of different initiatives being pursued worldwide to enable easy access to scientific knowledge. Researchers are creating their own solutions. Take for example the Nobel Prize winner Randy Shekman who only recently set up the online journal eLife. He said he was tired of the paywall system of the major journals and their lack of innovation. I am even more impressed by the Open Access Button, a genuinely grass-roots initiative developed by two students. With just a touch of a button, you can discover the location of freely accessible articles published behind journal paywalls.

Entrepreneurs are also becoming involved. A good example is PeerJ, with an interesting business model. Researchers can become life members at little cost and are then able to publish in open access. Interestingly, PeerJ also makes the review process public.

This, along with numerous other examples, makes it clear that open access is ultimately inevitable. The question is now who will move the fastest: the users, new start-ups or traditional publishers? Will you become part of the movement and determine its course or will you be left behind by the new market leaders? My own view is that we as the scientific community can still determine the direction we take together.

4. Green or golden road

Open access is a moral obligation, essential for society and inescapable. That is the summary of my argument so far. No doubt you are thinking: 'That's nothing new'. 'We knew that long ago'. But my question to you now is: why are we not much farther advanced in open access in 2014? The world has definitely not stood still in the last ten years. How can it be that the scientific world – which has always been a frontrunner in innovation – has made so little progress on this? Why are most scientific journals still hidden away behind paywalls?

I believe that this is because we may well agree on the necessity of open access but disagree on how it can be achieved. What will be the costs of the transition to open access journals? Will there be a

profitable business model for publishers? Or to put this question in more technical terms: should we choose the Green Road or the Golden Road?

The Green Road leads us to a situation in which open access and paywalls exist side by side. Researchers will have to go through the peer review process whilst at the same time publishing another version in a local repository. In order to keep these in place, there are embargoes that restrict fast access to knowledge. How frustrating for people like Jack Andraka who have no time to lose.

The Green Road therefore results in a lack of clarity and issues with findability because of all the different repositories alongside each other. What's more, the quality of the publications is also unclear: especially for users outside the scientific world, it will be hard to discern the status of quality assurance of all these local repositories. There is one simple answer to all these issues: The Golden Road. The Golden Road means that all publications in all journals are available free of charge from the outset. Embargoes become a thing of the past. It also retains what works well in the current publication and distribution model. Articles can be found easily and permanently thanks to the publishers' state-of-the-art archives. And the high-quality peer review system ensures everyone can be confident about the quality of a publication.

For me, the Green Road is like coming fourth in a major championship. A great achievement, without doubt, but if you are going for gold, fourth place is the most frustrating place you can achieve. Ultimately, it is only the winner that everyone remembers. How to become the winner? We know that setting high ambitions and keeping focus are the most important factors in reaching for gold. We also know that the Golden Road is not the easiest route. It takes time and a lot of energy. It is complicated and requires a great deal of negotiation, in which there inevitably will be compromises. This is because all players must participate: publishers, universities, libraries, funding agencies and scientists themselves.

It is therefore totally understandable that some players prefer the comfort of the Green Road. I also understand why there is criticism of the Golden Road. Publishers are willing, but are not at the forefront because of the revenue they earn from expensive subscriptions and embargoes. Universities fear the Golden Road because of the expense it involves, especially if the transition takes time.

And many scientists are oblivious to the urgency of open access. From their university desks, they can already access all types of scientific articles: the very access that is so lacking in the world outside the universities.

So everyone holds each other back, waiting for the others to respond. Ultimately settling for fourth place.

5. A new declaration

This is why I am making an appeal to all of you. All us face a choice. We are being asked whether we will stick to our high ambitions or whether we will settle for less. I am going for the Golden Road. I am opting for high ambitions and I believe it is genuinely possible. As long as we act quickly and, more importantly, as long as we act together: I cannot achieve it alone, governments cannot achieve it alone, no one can achieve it alone.

As the State Secretary for science in the Netherlands, I see it as my responsibility to bring the key players together. I have therefore invited all my fellow ministers and state secretaries in Europe to coordinate our national agendas on this issue.[1]

[1]On 20 February 2014, Sander Dekker invited his European fellow ministers to talk with him about their Open Access policies in order to see if it would be possible to line them up to get one coordinated policy.

But that is nowhere near enough. Ultimately it is about you, in the world of science, standing behind this movement. I see excellent initiatives everywhere. It is now time to make effective agreements about open access. Agreements that benefit all parties involved: publishers, science associations, funding agencies, universities and libraries. The fact that it is possible is proved by SCOAP3, a consortium of the parties mentioned above that has developed an interesting business model specifically for particle physics. This is a promising example of the route to open access.

It is now time to join forces across the boundaries of sectors and even countries. This will only be possible if we put behind us our disagreement about the Green Road or the Golden Road and together send out a powerful signal that we are serious about open access. Over ten years ago, a declaration on open access was signed in Berlin. The time has now come for a new declaration to enable our international scientific community to reconfirm its lofty ambitions, but more importantly in order to take a major step forward. The time has now come to reach clear agreements with each other on the route we intend to take to achieve open access. And on how quickly we will achieve that goal. We have no time to waste. In the world of science, ten years may seem short, but in the digital world it is an eternity.

Baron de Coubertin, the founding father of the modern Olympic Games, once defined the Olympic idea as follows: “participation is more important than victory”. More than a century later, it is time for a new Olympic idea, one that we can apply fully to the efforts we will need to make in order to achieve open access: “participation is not more important than victory, participation is victory”. Let’s all join forces and go for gold together.