Data without borders — the Research Data Alliance

iSGTW speaks to Mark Parsons, who was recently appointed secretary general of the Research Data Alliance. This global organization celebrates its first anniversary next month and will be holding its third plenary meeting in Dublin, Ireland, from 26-28 March, 2014. Parsons tells iSGTW why it is important for researchers to share their data and explains how the RDA is seeking to harness enthusiasm within the community to bring about a 'culture change' in the way researchers deal with data. He also argues that the greatest barriers to increased data sharing are often social, rather than technical.

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Why is it important that researchers share their data?

All of society's grand challenges - climate change, public health, understanding the origin of the universe, *etc.* - require sharing data across technologies, scales, and cultures. Scales can be both physical and temporal, and culture relates not just to national cultures, but also disciplinary cultures. If, for instance, an atmospheric scientist and a public health specialist want to use the same atmospheric data to understand asthma in Los Angeles, you need to build a bridge across the two cultures.

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European editor

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Personally, I come from the earth sciences, so climate change is a big area that I'm aware of and we're already seeing significant economic impact from it today. We have a group within the RDA that is looking at agricultural interoperability and they're starting to think about how climate change is going to affect agriculture, which obviously has both a huge social and economic impact. So a grand challenge is the economic impact; I guess it's the bottom line.

The RDA's motto is 'research data sharing without barriers'. What do you perceive to be the greatest barriers to sharing research data today?

I think the biggest barriers are all social. This is often particularly true in the case of data collected by individuals or small research teams. There may be concerns about the primacy of their research, being scooped, or about misuse. Despite this, data sharing has been shown to have a net economic benefit, regardless of with whom you are sharing it. However, I also think there's a simple lack of knowledge about where data can actually be made available.

How is the RDA working to overcome these barriers?

These social issues are the real difficulty and the RDA is working hard to address them, such as through our legal interoperability interest group, for example. However, I think this is something that the RDA needs to grapple with more. So far,

we've been focusing more on the technical barriers, which are also formidable, but not as intractable as the social barriers.

Successful data sharing is often a question of formats or, more broadly, standards. I know it's a cliché, but the great thing about standards is that there are so many to choose from. And, even if we agree on standards, the devil is always in the details of the implementation. You and I may agree we are going to use this particular metadata standard and we are going to describe our data in a common way and, therefore, our data ought to suddenly work seamlessly together. But, of course, it never really works out that way. Successful data sharing requires us to work much more closely together, have more interaction back and forth, and have human - as well as machine - handshakes. This is what I think the RDA is very good at addressing: bringing people together and focusing on these implementation details. I think that over time, as a side benefit of that, we will begin to address some of these social barriers, as well. Any solutions that are developed will not be strictly technical solutions. In some cases, social approaches may solve a problem better than a technical approach. Often, it's really a combination of the two that works.

We are really working towards a culture change in terms of how we treat data and data providers. It's important to give intellectual credit for producing a good data set and to consider data as first class object, just like a publication. So, we're after a shift

in scientific research culture and I think we're pushing things in that direction.

How have things progressed at the RDA since last September's plenary meeting in Washington, DC, US?

We've been growing like gangbusters. Membership is now at over 1300, which is probably double of what it was at the second plenary. We've also roughly doubled the number of working groups and interest groups. We now have an initial Organizational Advisory Board, which is formed from the organizations that have expressed interest in membership. In addition, we've finalized articles of association for establishing a formal charitable foundation in the UK.

So, we've basically been doing a lot to make the organization function well. We actually started working before we had our structures in place, but that's all now coming together. I think the most exciting thing so far has been the enthusiasm we've seen from the members, the growth in membership, and the expanding working and interest groups.

With the third plenary meeting in Dublin now only one month away, are there any talks, discussions, or workshops scheduled to take place that you're particularly looking forward to?

I think there are some nice speakers that will give us a diverse perspective. Personally, I'm more

excited about the actual working and interest groups, though. Of course, I would love to be more engaged with the details and see where all the cool stuff is happening. The plenary talks will, no doubt, be fascinating and inspirational, but people become really excited when they get to work together on solving problems.

As you alluded to earlier, people in the community seem - on the whole - to be very enthusiastic about the RDA. Why do you think this is and how do you intend to harness this enthusiasm to make sure the RDA achieves its goals?

Yes, there is great growth and enthusiasm, which in turn raises the awareness of data issues in general. Governments and agencies are really starting to get it. I think there was sort of this pressure building up and data practitioners knew it was bound to happen. Now, there is not a day that goes by without a new open data policy being issued from a government or a university or something. There seems to be this critical mass, this trend in the right direction. Yet, the real tests will come in 6-12 months when the RDA results start coming out. We'll need to make sure that people and organizations start adopting them and that this enthusiasm continues.

We have to do everything we can to hear the membership and address the problems that they want to work on. People ask me why should I join the RDA and my typical response is 'what problem do you want to solve? What sociotechnical problem

that makes data sharing difficult for you do you need to address?' The RDA connects people to other champions that want to solve the same problem. This is what we need to tap into.

Finally, how does the RDA's loose, dynamic structure enable it to achieve its goals?

I think we are kind of a new international organization: we are taking more of an organic approach to matters. I think we recognize that we're building infrastructure, but infrastructure doesn't mean just the pipes or the wires: it's the whole sociotechnical construct. It's really more like an ecosystem. Ecosystems evolve; they're not designed from the top down. It seems chaotic, but it's also a healthy way to approach things. I think of the famous quote from Charles Darwin: "It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change." What we see in terms of evolving technical infrastructure is that it needs to be adaptable. We're taking this organic, grassroots approach, with a binding level of principles that unite us. I think this is a unique aspect of the RDA.

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