RIDING THE WAVE

HOW EUROPE CAN GAIN FROM THE RISING TIDE OF SCIENTIFIC DATA
A VISION FOR 2030

RESEARCH DATA ALLIANCE EUROPE

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The Data Harvest Report

How sharing research data can yield knowledge, jobs and growth

A RDA Europe Report

Building trust on a global scale

Strong engagement and impact ~ Bottom-up meeting top-down

"ICT is responsible for half of productivity growth in the EU, and the digital sector is expected to grow seven times faster than the overall EU economy. So we must support innovation if we want this trend to continue." (Commissioner Günther H. Oettinger, European Commissioner for Digital Economy and Society)

The initial investment is scientific, but the ultimate return is economic and social.

It will take much work to harvest these benefits. If we are to succeed, we must act now.

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Data driven …

- A host of successful **European data sharing** projects
- The **Open Access** movement
- **Research** and **e-Infrastructures**

> ***"It's pretty clear that in the 21st Century, data drives everything, from the health sciences to climate change. But there's only so far you can go in solving problems using your own data and your own team. Today, you need to reach across boundaries."*** **Fran Berman, RDA US Chair**

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The benefits of open data

- The **Citizen**: All people will benefit from the products and services that are developed around open data and sharing – directly or indirectly.
- The **Entrepreneur**: Open data is a source of inspiration for entrepreneurs and provides the raw material for new products and services.
- The **Scientist**: Freely exchanging data will transform the nature of what it means to be researchers.

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The benefits of acting now!

- **Benefit 1: Creating jobs, spurring growth**

It seems obvious: Data have more value shared and used, than hidden and unused.

- **Benefit 2: Boosting research productivity and creativity**

Sharing and re-using data change the way science is done, and who does it; that has unexpected consequences

- **Benefit 3: Helping people, engaging citizens**

Citizens not only gain greater insight into what is being done in their name, but they can also look at the data themselves and suggest policy improvements.

Politicians, take note: It will change your business forever.

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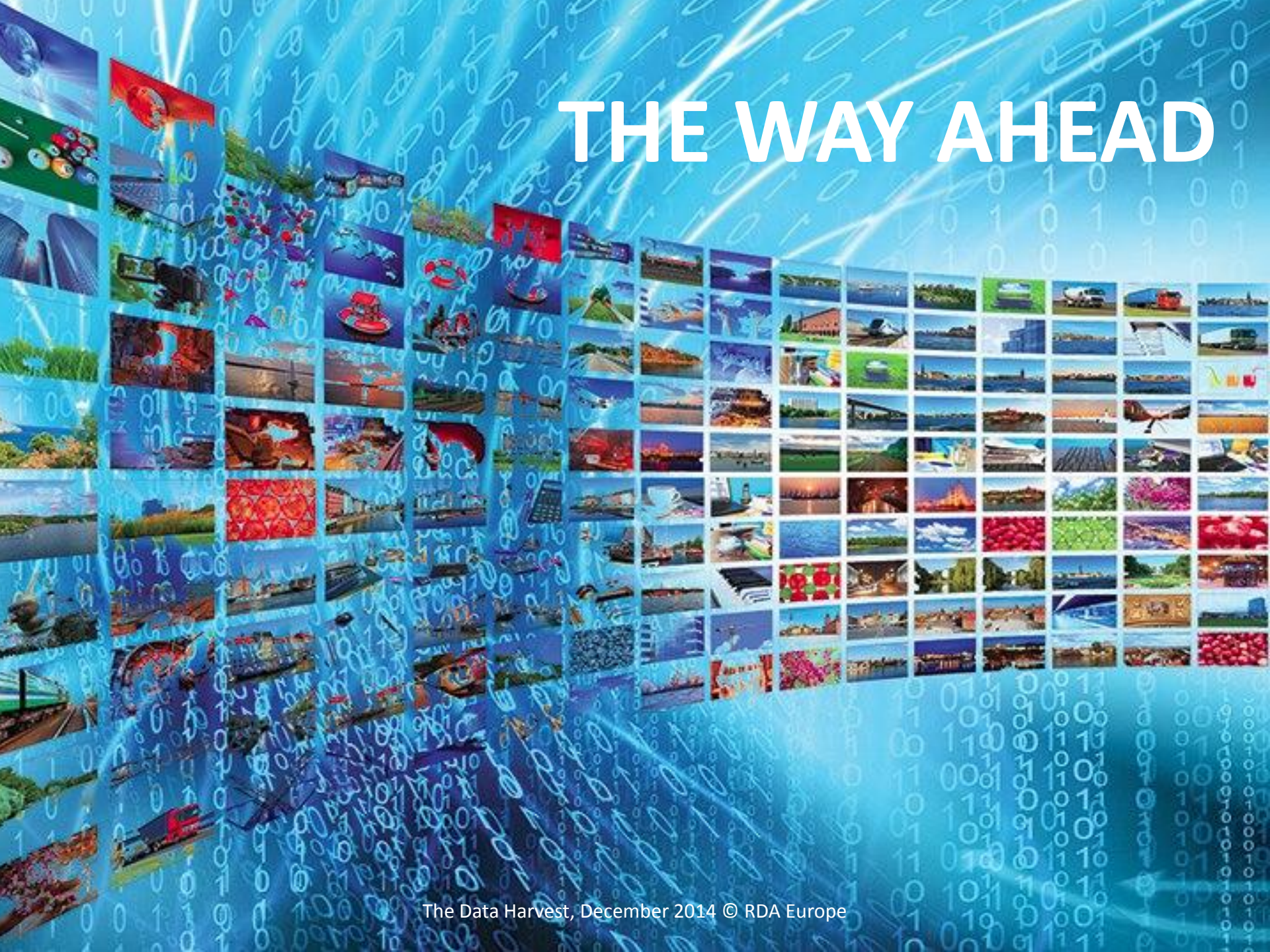
Are there costs?

It's hard to prove a negative; but most researchers and economists believe ***there is a cost*** *of not sharing.*


THE WAY AHEAD

#1 **DO** require a data plan, and show it is being implemented

- a system to let researchers around the globe gather, store and manage, share, re-use, re-interpret and act upon each others' data. For that, **every EU member-state** should have a plan to develop the tools, infrastructure, skills and funding to take part –
- and the **EU should update its own plans** to coordinate the European effort.
- Internationally, **every country** wanting to join coordinating bodies like RDA should also have a plan implemented.

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#2 **DO** promote data literacy across society, from researcher to citizen

- Embracing these new possibilities requires **training and cultural education** – inside and outside universities.
- **Data science** must be promoted as an important field in its own right.
- Use and evaluation of data must be **embedded in all curricula**, from primary school to postdoctoral programme.
- **EU R&D programmes** should incorporate data training and skills.
- And public workers, who control scientifically vital databases on populations and environment, need **training**

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#3 **DO** develop incentives and grants for data sharing (don't forget Horizon 2020)

- Few people will act without incentives – whether direct grants from EU programmes, or indirect market incentives to private investors. For Horizon 2020, the upcoming Work Programme for 2016-17 should **reflect the growing importance of data sharing** – in funding for experiments, business models, communities and analysis.
- Incentives will be needed for **industry**, in **public-private partnerships** or **direct government procurement** of innovative infrastructure.
- Clarity is needed on **who owns a scientific data set**, so a balance can be struck between public access and private gain.
- And **within universities, a cultural change** is needed so that good data management is seen as important in tenure and other rewards.

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#4 **DO** develop tools and policies to build trust and data-sharing

- Perhaps the biggest challenge in sharing data is **trust**: How do you create a system robust enough for scientists to trust that, if they share, their data won't be lost, garbled, stolen or misused?
- The problem is **partly technical**: Much work is needed to develop the underlying infrastructure, identifiers, meta-data, systems and networks – and for that, again, public funding in Europe and international coordination by RDA will be needed.
- But in the end, it is the **culture of science** that we are talking about, and that will take a generation to change.

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#5 **DO** support international collaboration

- The biggest benefits will come from **cross-fertilisation** with other disciplines, regions, cultures and economic systems.
- RDA, with its 96-country membership, exemplifies the kind of **global coordination** that will be **needed**.
- Europe must speak with one voice as the work advances, and that means the **European institutions must lead**.
- Long-term thinking and support will be needed to work globally.

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#6 **DON'T** regulate what we don't yet understand

- Sharing scientific data on this scale is new; we don't know yet what opportunities will arise, or what problems will dog us. Until then, we **urge forbearance** from those who would wish to regulate too hastily.
- Issues such as **privacy and ethics** should be handled in consultation with the wider data and scientific community.
- **Resist temptation** to regulate.

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#7 **DON'T** stop what has begun well

- Much effort, expense and brainpower, across the EU, has been invested in making data sharing a reality. It will be a temptation, with a new Commission and Parliament in Brussels, to **change course, re-order priorities and move funding lines** around.
- **Don't.**

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In October 2010, the High Level Group on Scientific Data presented the "Riding the Wave," report to the European Commission outlining a series of policy recommendations on how Europe could gain from the rising tide of scientific data. Over 4 years later, a team of European experts have generated this new report to outline how Europe must act now to secure its standing in future data markets. It offers recommendations to European policy makers while outlining the benefits and challenges. The seeds have been sown. Now is the time to plan the harvest.

The seeds have been sown
Let's plan the harvest

THANK YOU

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http://europe.rd-alliance.org/documents/publications-reports/data-harvest-how-sharing-research-data-can-yield-knowledge-jobs-and