

# The Digital Revolution: Scientific Infrastructure for SDGs

**Geoffrey Boulton**

**ICSU-CODATA  
& Edinburgh University**

**International Council  
for Science (ICSU)**

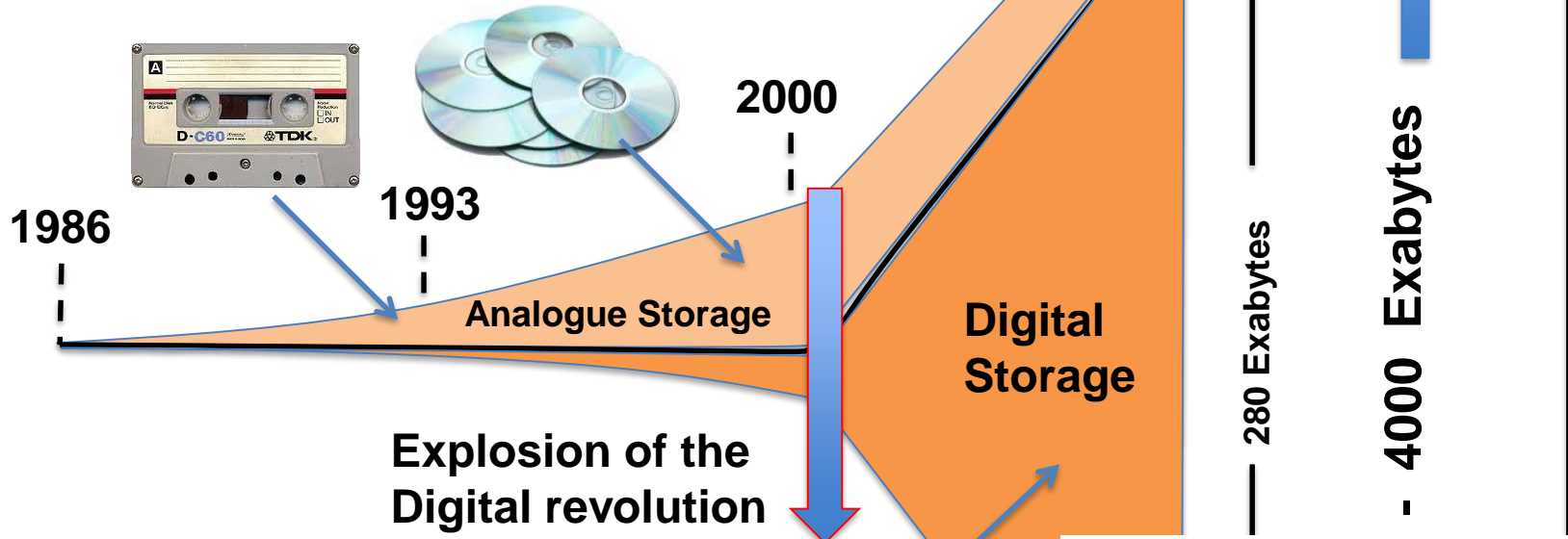
**Committee on  
Data for Science  
& Technology  
(CODATA)**



# The digital revolution

## storage – analysis – communication

Global information storage capacity  
In optimally compressed bytes

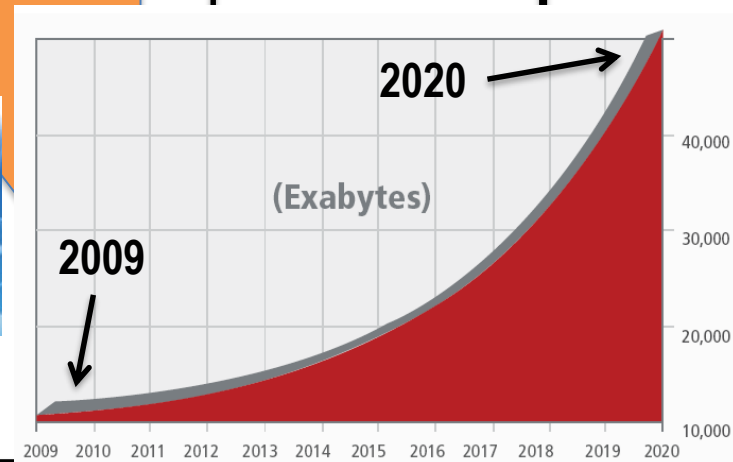


The technological bases  
for open science  
if we choose to use them!



Based on:

<http://www.martinhilbert.net/WorldOnfoCapacity.html>





**Accord:**  
**Principles, policies, practices**  
**for the digital revolution**  
[www.icsu.org/science-international](http://www.icsu.org/science-international)

**Science International**  
International Council for Science  
International Social Science Council  
The World Academy of Sciences  
The Inter-Academy Partnership



**Open Data**  
**in a**  
**Big Data**  
**World**

An international accord

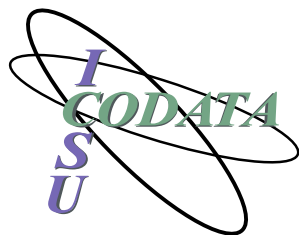


# **Open Science Platforms for Africa & Latin America**

**Digital ecosystems to:**

- **Develop capacities**
- **Policies, practices, services**
- **Shared computing resources (the cloud)**
- **Software tools**
- **Analytic approaches**
- **Networking with the international community  
for mutual support in best practice and innovation**





# Research Data Science Short Courses Africa



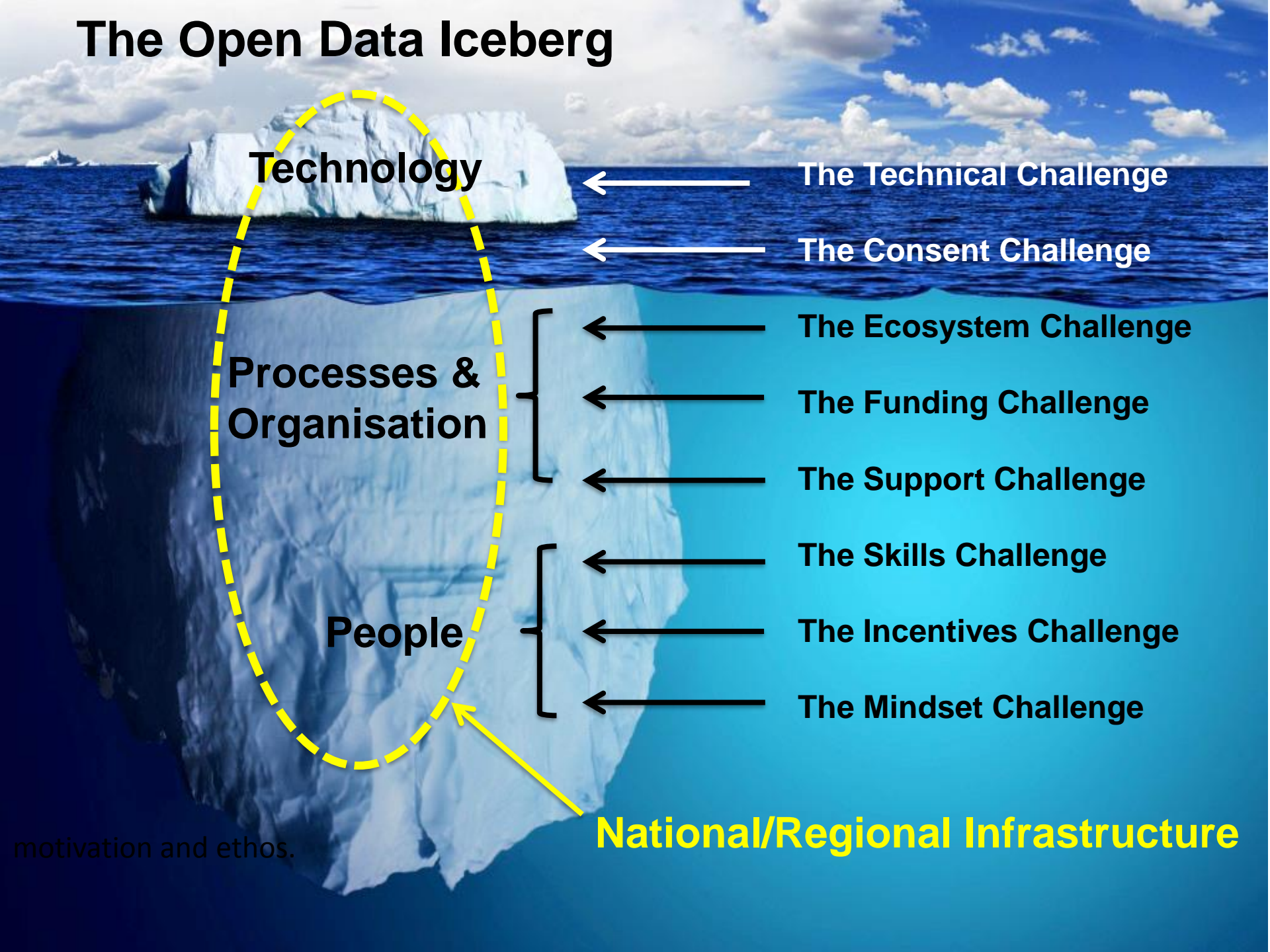
**DATA CARPENTRY**  
MAKING DATA SCIENCE MORE EFFICIENT



**CODATA-RDA Research Data Science Science Short Courses are:**

- **Address a recognised need:** provide additional training in core data skills for PG and Early Career researchers, research support.
- **Be Scalable and Global:** work with partners internationally, open materials, training new teachers to create a network of schools: annual hub at Trieste, feeds the skills to put on schools at institutions worldwide.
- **Provide a Pathway for Specialisation:** introductory school in core data skills, then an advanced school or specialised school for specific disciplines.
- **Be Sustainable:** developing a business model with colleagues at the Cologne Business School, based on hub and node model with distributed funding.
- **Accredited and Quality Course:** working with EDISON and others to ensure that the course meets recognised objectives and can be mapped to credit systems.
- <http://www.codata.org/working-groups/research-data-science-summer-schools>

# The Open Data Iceberg



**Technology**

**The Technical Challenge**

**The Consent Challenge**

**Processes &  
Organisation**

**The Ecosystem Challenge**

**The Funding Challenge**

**The Support Challenge**

**People**

**The Skills Challenge**

**The Incentives Challenge**

**The Mindset Challenge**

**National/Regional Infrastructure**

motivation and ethos.

# Take-home messages for the STI Forum

- 1. The Science Community is contributing its energies and skills to build SDG-relevant capacities. We know how to do it.**
- 2. But - high level, multi-stakeholder engagement is now needed.**
- 3. Consortia of funders are needed to contribute to scaled-up roll-out.**
- 4. Can the UN help? Technology Facilitation Mechanism as a means of engaging with member states?**