



# Once upon a time ...

A **school student** in Malta catches a fish he has never seen before. He takes a picture with his mobile phone and makes a **picture-recognition search in the web**. Not finding an answer, he talks to his biology teacher and together they send a question to an **open online research community** on biodiversity.

**Researchers from different countries and disciplines** discuss online with the student and the teacher. **Together they prepare and run simulations** to consider possible options for the species origin and movements, with the **research tools available online provided** by a university in Ireland for research on these topics.

The fish is found to be part of a new population, which has arrived from another area and adapted to this environment. This suggests a way to preserve some of the threatened sea species, so the resulting **joint online open publication**, linked with the **data of the species and its simulated movements**, is tagged with specific labels to indicate its relevance as **scientific evidence for environmental policy**.

This is **rewarded** in the digital biology learning portfolio of the **student**, registered in the **teacher's** professional online portfolio, and the **researchers** add it to their CVs on three parts: **open publication** on societal challenges, contribution to the **research data for the research community** and **research interaction with society**. These sections are regarded when applying for **research funding**.

# ... and they leaved happily ever after.

# This story demonstrates...

- *Global, dynamically emerging research collaborations*
- *Open online access to scientific data and research tools*
- *ICT-based research methods for formulating and solving the research question*
- *Usage of and contribution to openly accessible scientific knowledge*
- *Interaction between society and researchers in initiating, implementing and disseminating research*
- *Open channels to propose scientific evidence for policy making*
- *Research culture which encourages openness and scientific collaboration at schools and research organisations*

***These are essentially enabled and facilitated by ICT, which can transform research to better meet the challenges of the future***



European  
Commission

# Vision for Digital Science

## Society

**Democratization of research**

New research methods

- Big data management and analysis
- Simulations, remote instrumentation

Engagement of society

- Engaging citizens into scientific processes
- Society included in scientific discussions

## Transformation of science

Open access to research

- OA to publications and underlying data
- Transparency of research processes

Collaboration in research

- Data sharing based collaboration
- Crowdsourcing, social media in research

**Transparent  
replicable  
research**

**Symbiosis  
of science,  
society  
and policy**

**New disciplines, new research topics**

# Innovation

# Policy

# In summary ...

- **Digital science** aims to ensure that the public research investment is used efficiently and also supports European capacity for future research and innovation
- Through harnessing the potential of **digital science** (new research methods, openness, collaboration, engagement of society), research can lead to transformation of science, and improved impacts for society, policy and innovation
- Ongoing policy efforts highlight access to scientific information (Open Access to publications and research data) and aim at integrating **digital science** in future project funding.
- **Digital science** allows an improved interaction between science, society and policy by providing better scientific evidence for policy making

Thank you for your attention!

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