Open Data for transparent STI monitoring & assessment

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STI: the new policy environment

Science
Technology
Innovation

Interconnectedness

A chain of models, a complex system with multiple actors and multiple pathways. Participatory policy style

Digitalization

Reshapes innovation through data driven processes and is speeding innovation cycles , from design to product to user feedback

Policy Intelligence

Streamlines a big data, AI-assisted policy modeling approach to augment human judgment for evidence-informed policy making

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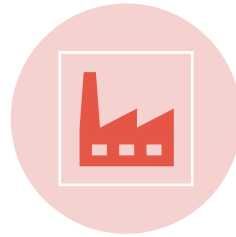
A wide range of actors involved
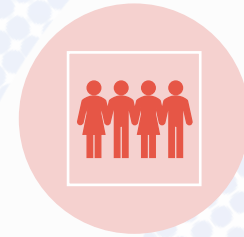## Different interests, different intervention points

RESEARCHERS

RESEARCH MANAGERS

INDUSTRY

POLICY MAKERS

PUBLIC

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Tracking & assessment of STI

- **Evidence-based**
- **Automated**
- **Sustainable** – tracking long-term & repeatedly, outputs and impact of innovations
- **Comprehensive** – 360º view across multiple facets of STI activities
- **Granular** – in-depth analysis to identify pathways and gain understanding
- **Trustworthy** – to guide decision making and buy in from the public
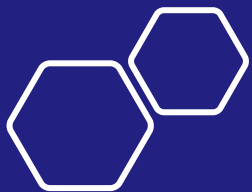
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Open data, Big data, AI

Where does open data come into play?

Open data as a means of
- Identifying research outcomes easily – **no barriers** to evidence
- Embedding **transparency** in assessment – bringing trust into science
- Allowing more players to enter the game – more opportunities for **innovation**

Open science practices
- Sharing results at early stages – **responsiveness**
- Involvement of citizens – **participatory**
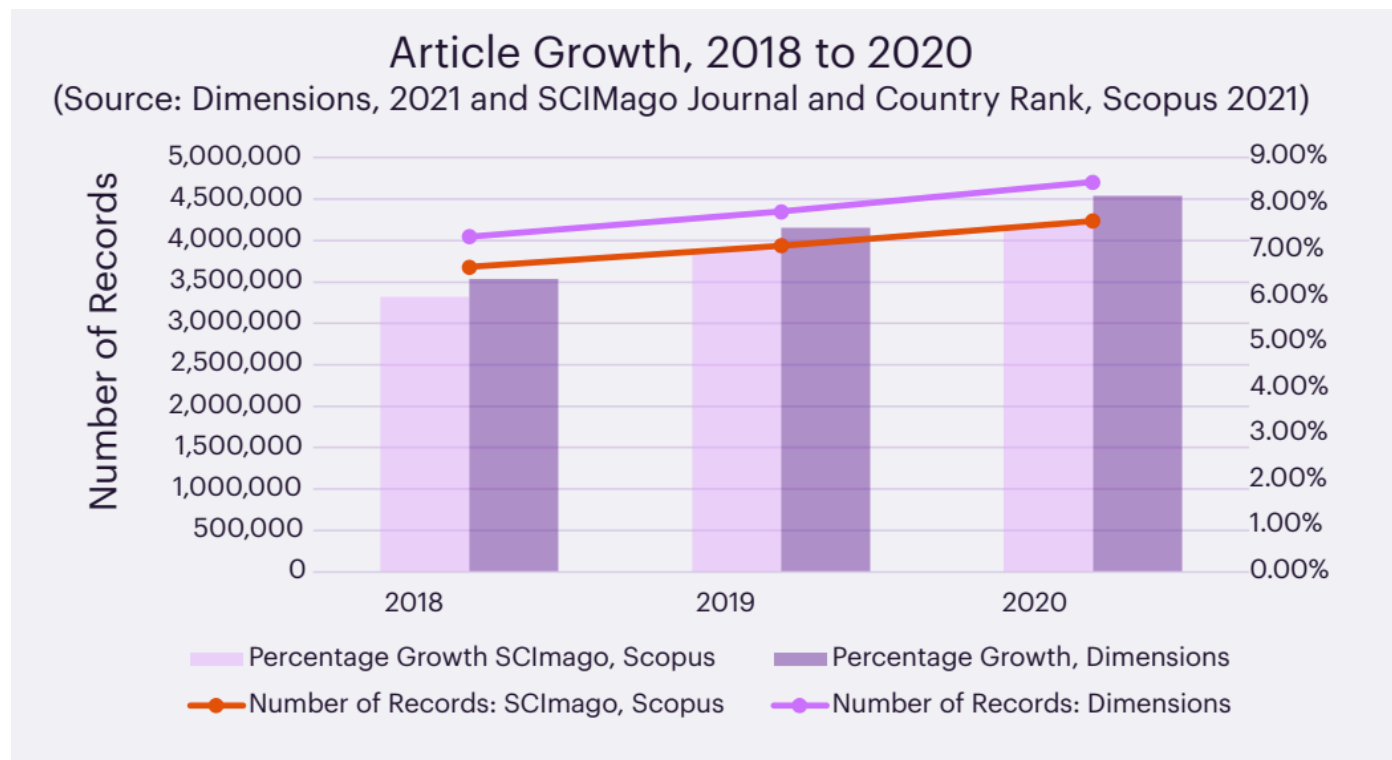- Need for advanced **digital skills** – contributing to a European digital workforce

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Big data

Scientific output is getting bigger in volumes

AI

Tools to clean, enrich and understand

Article Growth, 2018 to 2020
(Source: Dimensions, 2021 and SCIMago Journal and Country Rank, Scopus 2021)

Legend:
- Percentage Growth SCImago, Scopus
- Percentage Growth, Dimensions
- Number of Records: SCImago, Scopus
- Number of Records: Dimensions

Source: STM 2021 Global Brief – Economics & Market Size

For H2020 – 84% is OA
A smaller portion fully machine reachable or reusable (FAIR)

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WHO IS OPENAIRE

A European infrastructure on open scholarly communication

Mission: Shift scholarly communication towards openness and transparency and facilitate innovative ways to communicate and monitor research.

Non-profit organization

- Established Oct 2018
- Headquarter Greece, virtual office
- 47 members
- From 34 countries

● ASSOCIATE MEMBERS
○ REGULAR MEMBERS

IRELAND
○ The Provost, Fellows, Foundation Scholars and the other Members of Board, of the College of the Holy and Undivided Trinity of Queen Elizabeth near Dublin (TCD)

UK
○ JISC

GERMANY
● Universitaet Bielefeld
● KIM Konstanz
○ University of Göttingen

DENMARK
○ Syddansk Universitet University of Southern Denmark

NORWAY
○ Unit-Direktoratet for IKT og fellestjenester i høyere utdanning og forskning

SWEDEN
○ Kungliga biblioteket National Library of Sweden

FINLAND
○ Helsingin yliopisto (UH)

ESTONIA
○ University of Tartu

LATVIA
○ University of Latvia

LITHUANIA
○ Kauno technologijos universitetas (KTU)
○ Stichting eIFL.net

POLAND
○ University of Warsaw

CZECH REPUBLIC
○ Masaryk University

SLOVAKIA
○ Centrum Vedecko Technickych Informacii (CVTISR)- Slovak Centre of Scientific and Technical Information

UKRAINE
○ Ukrainian Institute of Scientific and Technical Expertise and Information (UkrISTEI)

ROMANIA
○ UEFISCDI (Executive Agency for Higher Education, Research, Development and Innovation Funding)

BULGARIA
○ Institute of Mathematics and Informatics, Bulgarian Academy of Sciences

ARMENIA
● Institute for Informatics and Automation Problems of the National Academy of Sciences of the Republic of Armenia

TURKEY
○ Izmir Institute of Technology (IIT)

CYPRUS
○ University of Cyprus Library

ISRAEL
○ Bar Ilan University

ICELAND
Landspitali University Hospital
National University Library of Iceland

NETHERLANDS
Data Archiving and Networked Services (DANS)

BELGIUM
Ghent University

LUXEMBOURG
University of Luxembourg

FRANCE
University of Lille Library
CNRS
Couperin

SWITZERLAND
CERN (European Organization for Nuclear Research)
Hauptbibliothek der Universität Zürich

SPAIN
Fundación Española para la Ciencia y la Tecnología (FECYT)

PORTUGAL
Universidade do Minho

AUSTRIA
Universität Wien

SLOVENIA
Univerza v Ljubljani (UL)

ITALY
Consiglio Nazionale delle Ricerche (CNR)

CROATIA
○ Rudjer Boskovic Institute

HUNGARY
○ University of Debrecen

MALTA
○ University of Malta

BOSNIA AND HERZEGOVINA
● CREDI
● University of Banja Luka

MONTENEGRO
○ University of Montenegro

SERBIA
○ University of Belgrade

REPUBLIC OF NORTH MACEDONIA
○ Ss. Cyril and Methodius University in Skopje UKIM

GREECE
● HEAL-link
○ Athena Research and Innovation Center
○ Library of the University of Piraeus
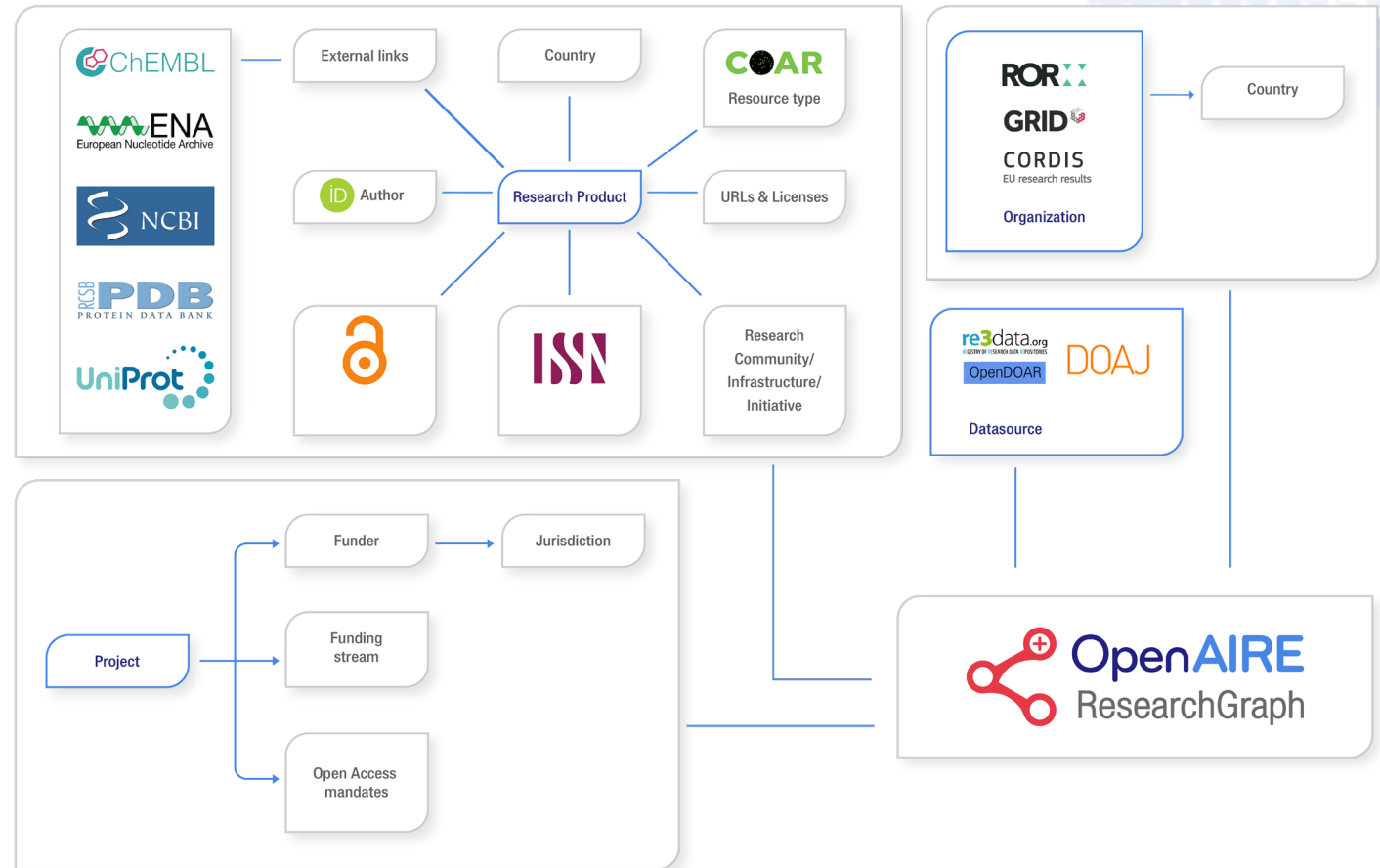
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Open scholarly communication data

- A big, global **data space** for scientific results

- Gathers publications, linked to data and software, people, organisations, processes, facilities

- All **linked** together

- Used for **discovery**, tracking and **monitoring** of open science

- A core resource in the **European Open Science Cloud**
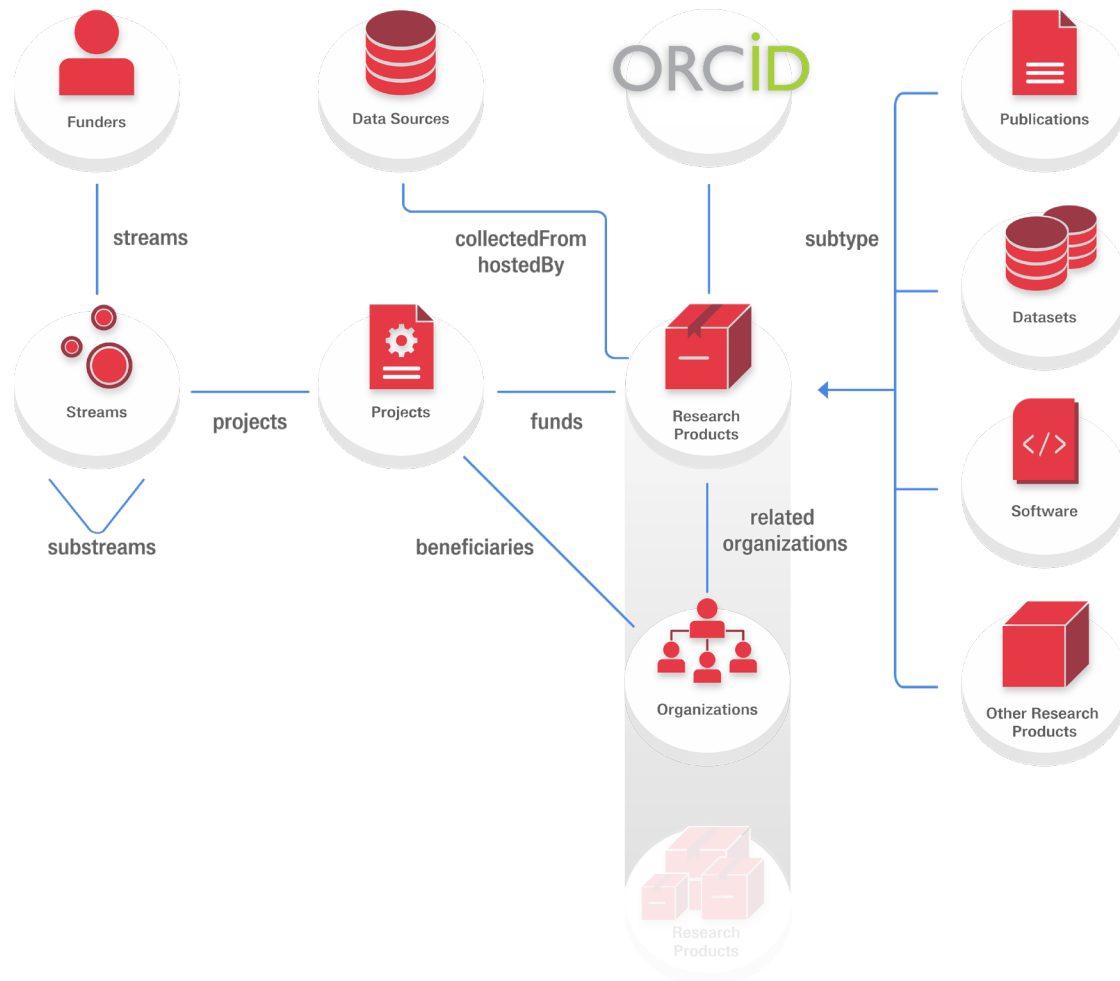
A global CRIS+

- 120 Mi publications
- 12 mi data items
- 220 K software items
- 7 mi research products
- 20+ funders with 3 mi projects
- Linked to authoritative registries
- …

Data collected augmented by AI

OpenAIRE: Fulfilling research community needs

- Classifications (Frascati, SDGs, NACE, domain specific,…)
- Links and corelations
- Scientific trends
- Groups, clusters, collaborations
- Innovations
- Technological readiness
- Insights
- …

- **IntelComp:** Fulfilling the goals of STI policy formulation and assessment
  - A wider data space: integrating and linking to non-academic data sources
  - Open to communities and public

A journey that has just begun

THANKS

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