

Assessment of Value and Impact of EMBL

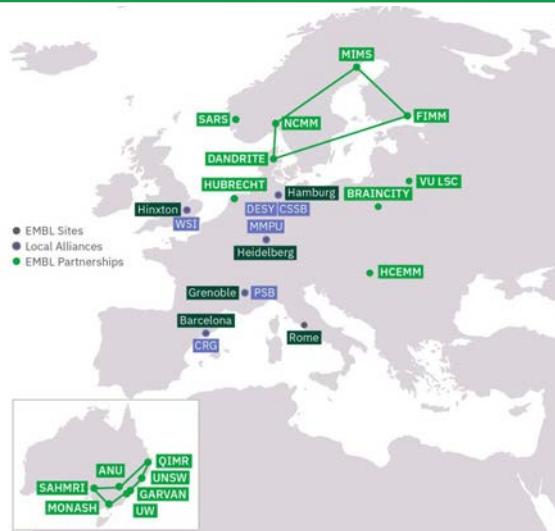
Bianca Schmitt
EMBL Strategy Office

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European Molecular Biology Laboratory (EMBL)

Europe's only intergovernmental laboratory for the life sciences



Six sites

12 Partnerships and Alliances

29 Member states



Five missions

Research
Scientific services
Advanced training
Innovation and translation
Integrating life sciences



Molecules to Ecosystems Programme 2022-2026

Scientific and institutional
programme developed
over several years using a
bottom-up approach

Using a balanced scorecard framework to measure impact

EMBL Programme Delivery

Framework can be used to successfully plan, coordinate, execute, monitor and report on institutional and departmental strategies and results

Enables decisions on which metrics to collect to showcase impact

Process of ensuring organisation's **objectives** are effectively deployed throughout the whole organisation

Ensuring all stakeholder interests are being appropriately addressed

Innovation Perspective

Continuously develop and deliver new innovative products & services

Stakeholder Perspective

Continuously improve stakeholder satisfaction

Vision & Strategy

Internal Perspective

Continuously improve internal processes

Financial Perspective

Continuously improve financial performance

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Leadership Perspective

Ensuring cutting edge science to be life science leaders

Member State Perspective

Driving value for our key stakeholders

EMBL's
5 year
Programme

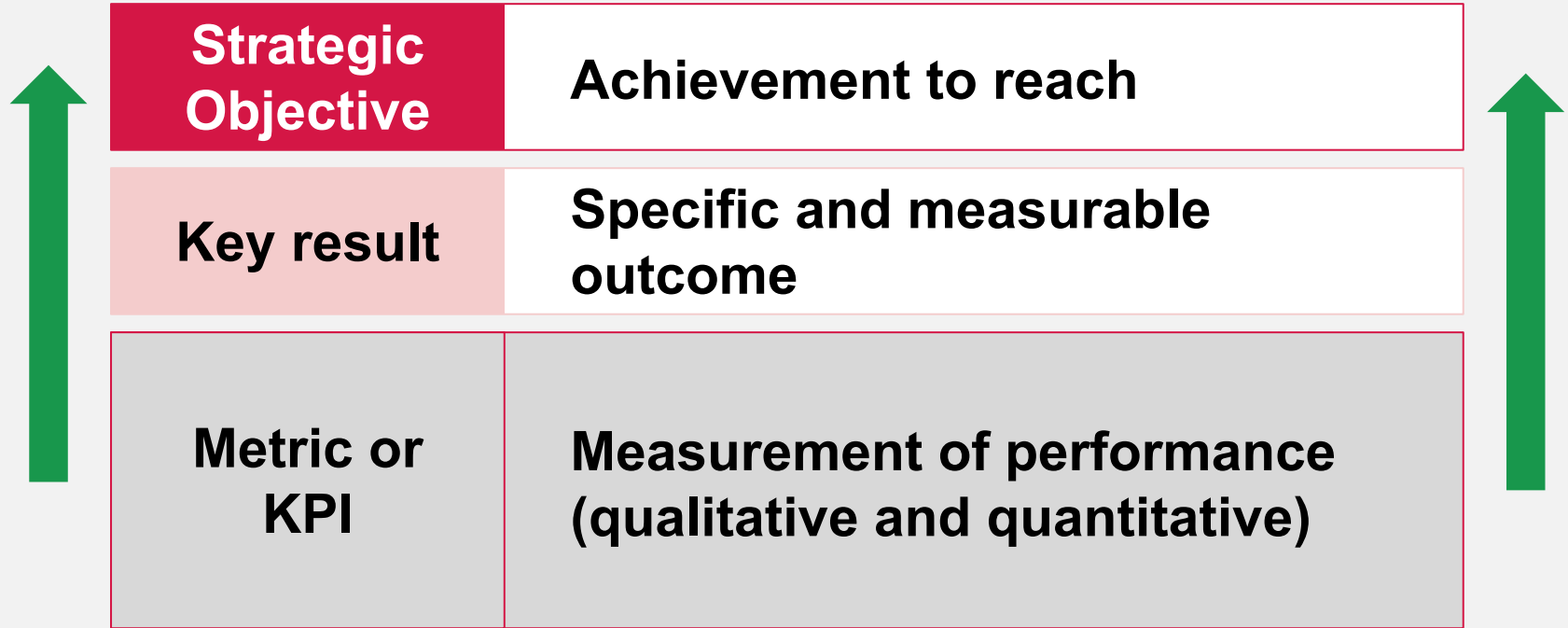
Internal Perspective

Continuously improve internal processes

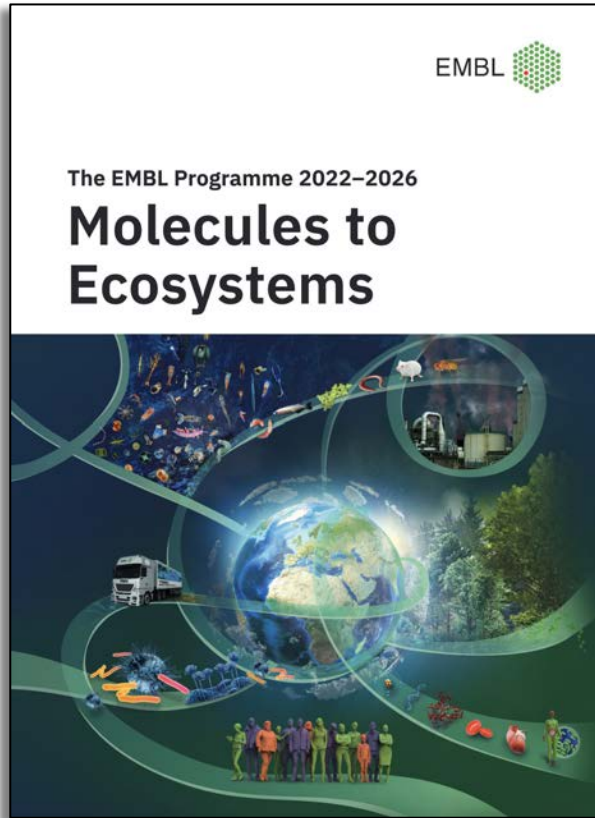
Financial Perspective

Continuously improve financial performance

Perspectives, objectives, and outcomes



Monitoring implementation and success of EMBL's Programme

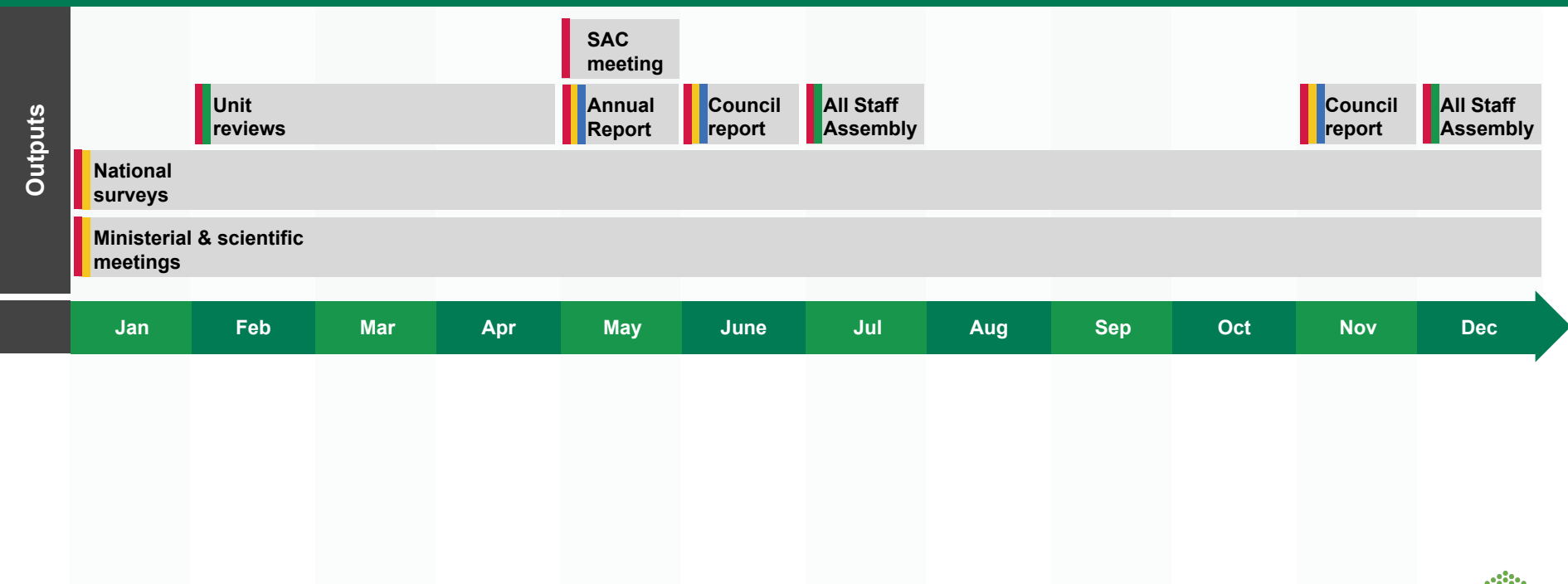


Vision: Life in Context EMBL's vision is to advance our understanding of ecosystems at the molecular level, applying expertise in molecular biology to study life in its natural context. In so doing, EMBL aims to use fundamental science to tackle societal challenges.	Be Life Science Leaders ("Rise up")	Drive value for Member States	Optimise Internal Organisation (One-EMBL)	Ensure Financial Sustainability
Research				
Services				
Training & PE				
Innovation				
European Integration				
People, Places and Processes				
Communications				

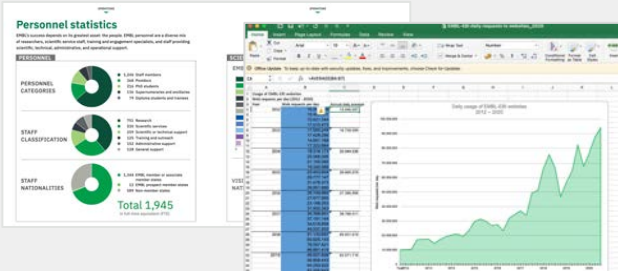
Using the perspectives for reporting

Leadership Perspective	Be Life Science Leaders
Member State Perspective	Drive value for Member States
Internal Perspective	Optimise internal organisation (one-EMBL)
Financial Perspective	Ensure financial sustainability

There are many eyes on us and all are interested to know how EMBL is delivering on its Strategy



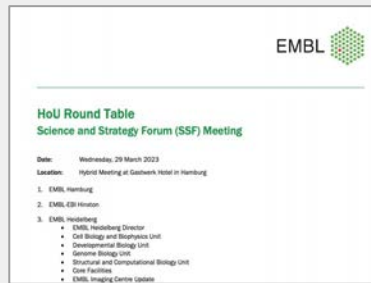
Key data sources



Annual Metrics

Yearly metrics collected by Strategy across EMBL.

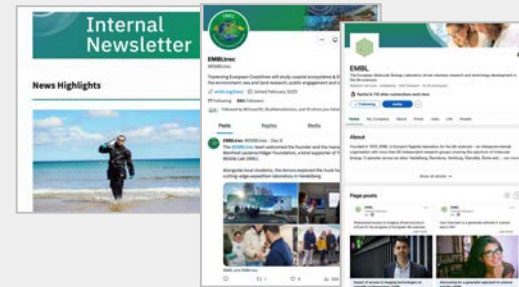
Extensively used, e.g. for regular reporting to ministries on engagement with member states



Internal reports

For example Roundtable updates from Heads of Units.

Good overview of ongoing projects and activities; catching things early



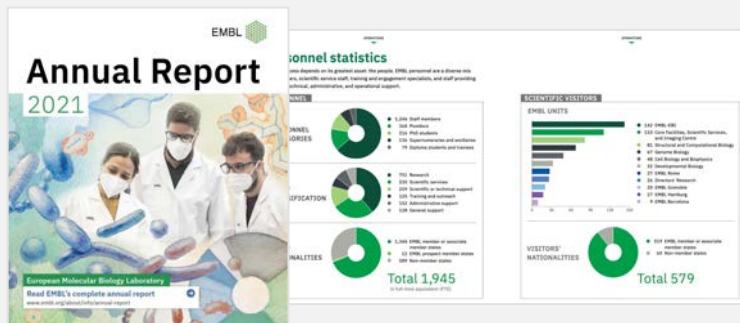
EMBL Comms outputs

Different frequencies, level of information and target audiences.

Catching information that might have fallen through the cracks

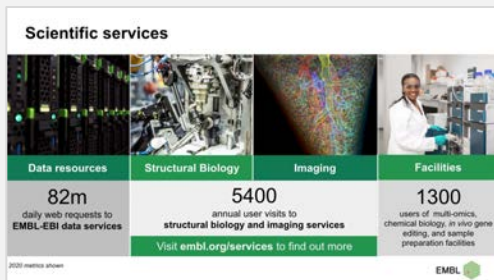
Annual Metrics

What are the annual metrics?



- Metrics collected yearly by Strategy Team all across EMBL
- Span EMBL's five missions
- Span majority of EMBL's departments
- Ensure appropriate depth/slicing

Mainly quantitative but also helpful for case studies



The annual information form the necessary basis for impact studies!

Impact reports for EMBL scientific services

technopolis
group




EMBL technopolis group

Review of the impacts of EMBL experimental services




Charles Beagrie



Charles Beagrie EMBL-EBI

Data-driven discovery:
The value and impact of EMBL-EBI managed data resources



The super professional part of our impact assessment work

EMBL's research infrastructures and services are used across Europe and globally

Structural Biology at EMBL-Grenoble

in partnership with European Synchrotron Radiation Facility (ESRF)



~40 Biological data resources hosted by EMBL-EBI



Structural Biology at EMBL-Hamburg

in partnership with Deutsches Elektronen Synchrotron (DESY)



Core facility services at EMBL sites



3,600

annual users of experimental services including structural biology, imaging and core facilities

600

scientific publications enabled by EMBL experimental services


41 million

unique IP addresses accessing data resources

Value of metrics during Indicative Scheme negotiations

Impact reports highlighted the value of EMBL's experimental and data services

Survey results, cases studies, and socio-economic assessments enabled two impact reports on EMBL's experimental and data services

91% of users 

said access to EMBL experimental services was vital for their research

"EMBL provides streamlined access to state-of-the-art instruments indispensable for structural biology"

Academic User
Finland



£2.2 billion
return on investment

"My work will collapse without EMBL-EBI resources."

Survey respondent
Israel

Annual users metrics critical for impact report survey design

Impact of Experimental Services



Review assessed the impact of EMBL experimental services for external users

Carried out in 2021 to garner support from primary funders and promote EMBL experimental services to member states

Technopolis Group consultancy firm were commissioned to undertake a **survey** of past users and write **impact case studies**

Predominantly **qualitative** findings showcased the unique selling points and strengths of EMBL experimental services

Report found that EMBL's experimental services deliver substantial value to Europe by enabling researchers to conduct novel and complex experiments that could not be easily achieved at a solely national level

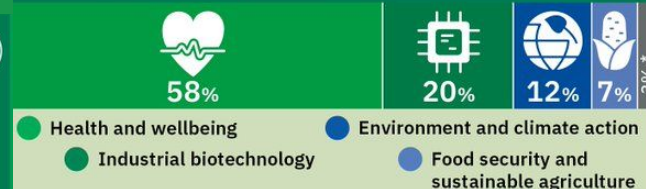
"Without EMBL facilities, the majority of the experimental work that supported our research for the last decade would have been unfeasible."

Academic user, Portugal

91% of users 

said access to EMBL experimental services was vital for their research

An impressive 70% of academic users indicated that their use of EMBL experimental services helped to deliver wider societal impacts in health, biotechnology, climate change and agriculture



n=378 *Other societal areas

Value of EMBL-EBI Open Data Resources

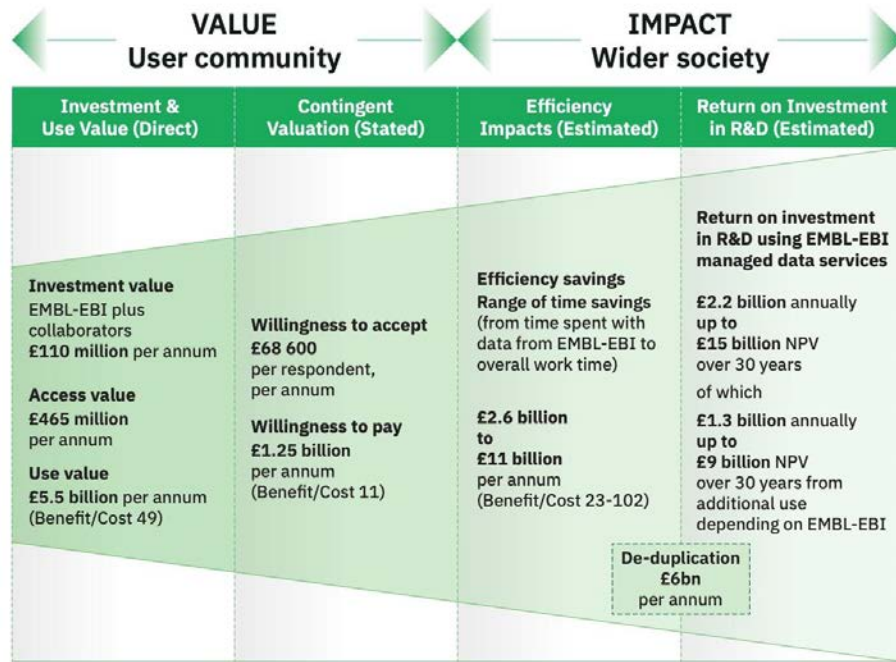


Survey assessed the value of EMBL-EBI data resources to external users

Carried out in 2021 as a follow-up to the previous report released in 2016 to garner support from primary funders

Charles Beagrie consultants were commissioned to undertake a **survey** and **economic analysis** of EMBL-EBI managed data resources

Predominantly **quantitative** findings showcased the exceptional economic value EMBL-EBI data resources provide



Note: NPV is Net Present Value. All estimates rounded.

Impacts of EMBL open data resources

The impact survey with **4 920 usable responses** is one of the largest recent datasets for an international survey covering open data or research

All economic impact measures significantly increased since the 2016 report

Impact on Research Efficiency

For every £1 spent providing EMBL-EBI resources, researchers save time worth up to £102.

Adds up to **£11 billion in annual benefits** to researchers and funders due to more efficient **research**

Impact on Research and Development

Research and Development facilitated by the use of EMBL-EBI managed open data resources is estimated at up to £2.2 billion annually



TRAINING



Impacts of user training

Training is an important aspect of the impact and value of EMBL's services

EMBL experimental services are deeply involved in training activities, e.g. through

- **Training on instrument use, data analysis, job shadowing**
- **Supporting EMBL's Courses and Conferences**



EMBL-EBI data resources are involved in EMBL training activities, e.g. through

- **Support of EMBL bioinformatics trainings (courses, webinars, on-demand)**
- **Extensive resource specific offerings of courses/webinars**



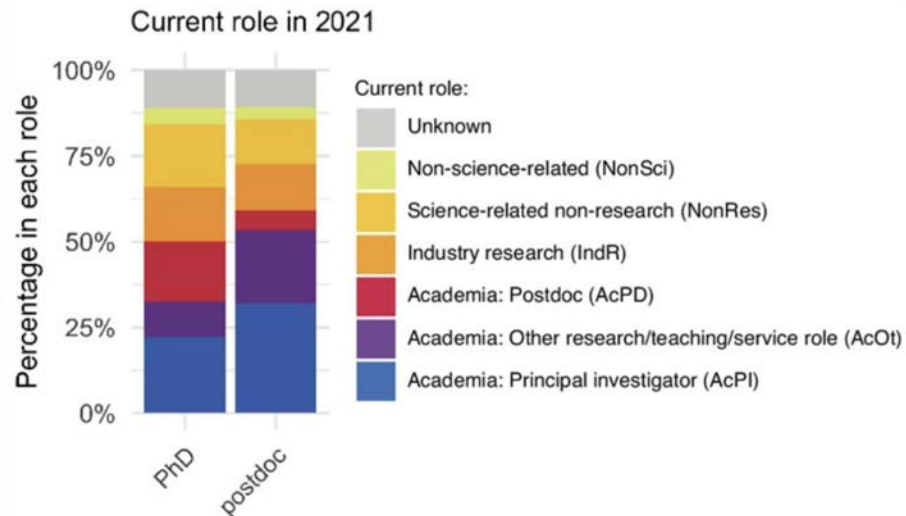
Career paths of EMBL's PhD and postdoc alumni

Analysis was done to compare academic career trajectories between EMBL cohorts and other high calibre research institutes/universities

Time-resolved analysis of the career paths of 2284 researchers who completed a PhD or a postdoc at EMBL between 1997 and 2020

Demographic information from our internal records and identified publicly available information about each person's career path

45%-60% of alumni outside academia had job title that included a term indicative of a management-level role (e.g. manager, leader, senior, head, principal, director, president or chief)



Plan is to get update every four years, maintain data on the career paths of alumni to identify any changes in the career landscape to better understand long-term career outcomes

Innovation & Translation

Impacts for industry and innovation

The impact of EMBL's services for industry users and R&D is an important facet of their total value

EMBL-EBI data resources **don't know** the majority of their industry users / ratio of academic:industry user is unclear

→ Need to implement standardised processes and metrics to understand and keep track of economic impacts arising from use of data resources

Experimental services **know** their industry users but need to track outcomes from these projects to better understand their economic impact given project confidentiality



Impact Assessment Challenges and Lessons

Challenges & Lessons



- Different facilities with different users and working models
- Surveys had to be bespoke & Engaging past users to take a long survey
- No guarantee about which case studies would be the most impactful
- Buy-in from staff is crucial
- Regular complementary surveys to better understand different aspects of e.g user community would be useful
- **You are probably not the only one exploring / interested in your organisation's impact - find allies**

Next steps

- **Continuously improving collection of annual metrics and case studies against strategic objectives**
- **Next impact assessment depending on resources**

WHAT'S
NEXT?



Thank you!

