Evaluation Frameworks: What are they and how can they help?

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Session overview

- Introduction
- Why evaluate?
- Introduction to logic models
- Overview of OECD Reference Framework
- Example: Europlanet 2024 RI
- Evaluation ‘surgery’ breakout
- Discussion

What is evaluation?

- “A **systematic** determination of a subject's **merit**, **worth** and **significance**, using **criteria** governed by a set of standards.”
- Assessment of whether aims were reached
- Data collected and assessed against set of criteria
- Wide range of approaches used
- More specific than ‘research’ (but it’s a continuum)

Why evaluate?

- Funder demands it (and won't just accept your word for it)
  - May be needed to obtain future funding, or as a condition of existing funding
- To find out whether activity is actually meeting its aims and objectives
- To be able to argue for your activity's value
  - Advocacy within Horizon Europe
  - Advocacy within your department/institution
- To improve your practice/activity [**sustainability**]
- To inform the development/planning of other activities, decision-making
- It benefits you!

Logic model - overview

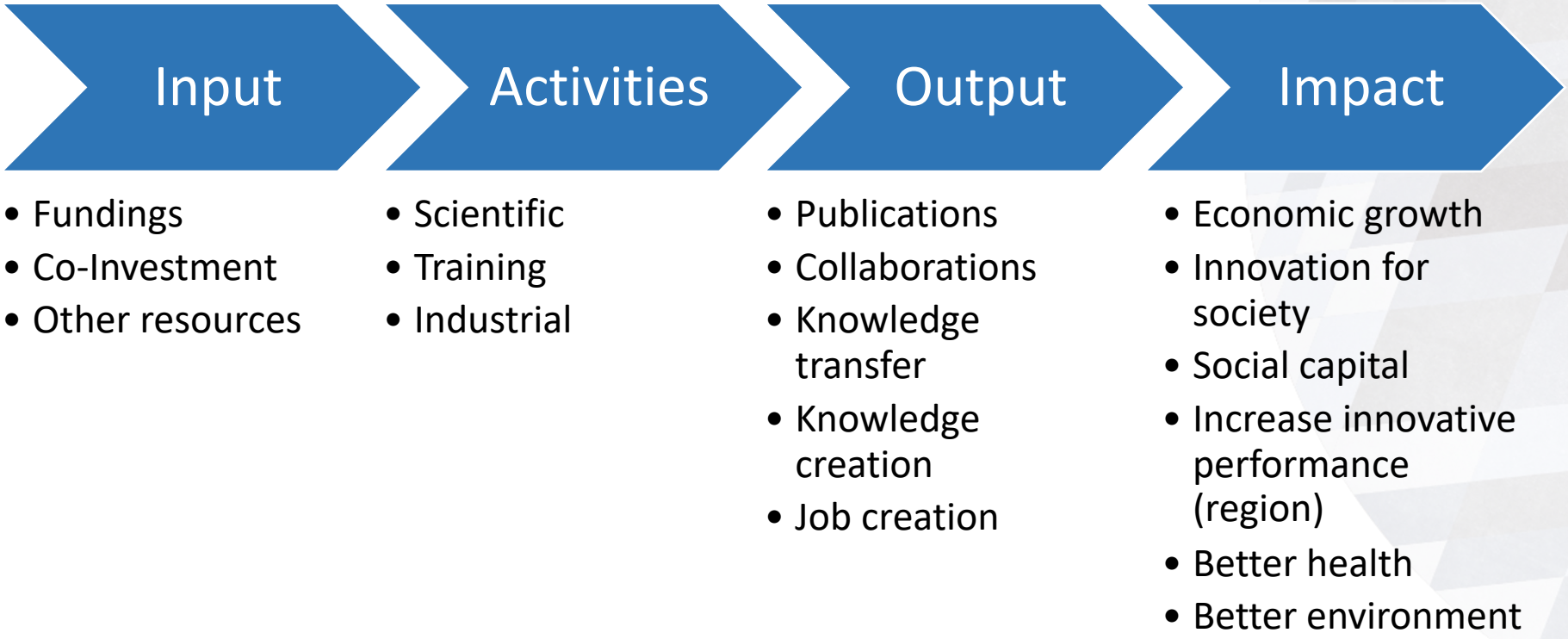
- A visual depiction of how a project (or infrastructure) works
- Logic models link outcomes with project activities and underlying assumptions
- Should be developed collaboratively
- Can evolve and change over the course of a project
- Consists of inputs, activities, outputs, outcomes/impacts

Some definitions

- Inputs – resources available to or needed for the project
- Activities – things the project does (e.g. providing visits, allowing access to data, etc)
- Outputs – products or services of the activity; QUANTIFIABLE
- Outcomes/impacts – changes to individuals, groups or communities resulting from experience

Logic model

Figure 1. The logic model – how to measure impacts



OECD publishing

REFERENCE FRAMEWORK FOR ASSESSING THE SCIENTIFIC AND SOCIO-ECONOMIC IMPACT OF RESEARCH INFRASTRUCTURES

OECD SCIENCE, TECHNOLOGY AND INDUSTRY
POLICY PAPERS
March 2019 **No. 65**

OECD
BETTER POLICIES FOR BETTER LIVES

GUIDEBOOK

FOR SOCIO-ECONOMIC IMPACT ASSESSMENT OF RESEARCH INFRASTRUCTURES

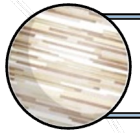
Assessment Framework

- Can underpin evaluation
- Outlines indicators
- Metrics-focussed [Quantitative]
- 7 overarching objectives (aligned to 5 dimensions of impact)
- Indicators of impact (25 core indicators, 33 additional indicators)

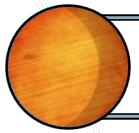
Impact areas (OECD)

- Scientific
- Technological
- Training & Education
- Economic
- Social & societal

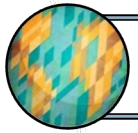
Objectives of a Research Infrastructure (OECD)



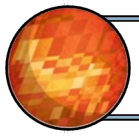
Be a national or world scientific leading RI and an enabling facility to support science`



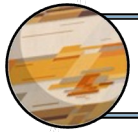
Be an enabling facility to support innovation



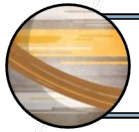
Become integrated in/facilitate regional clusters/strategies/collaborations



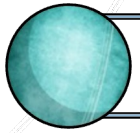
Promote education, outreach and knowledge dissemination



Provide scientific support to public policies



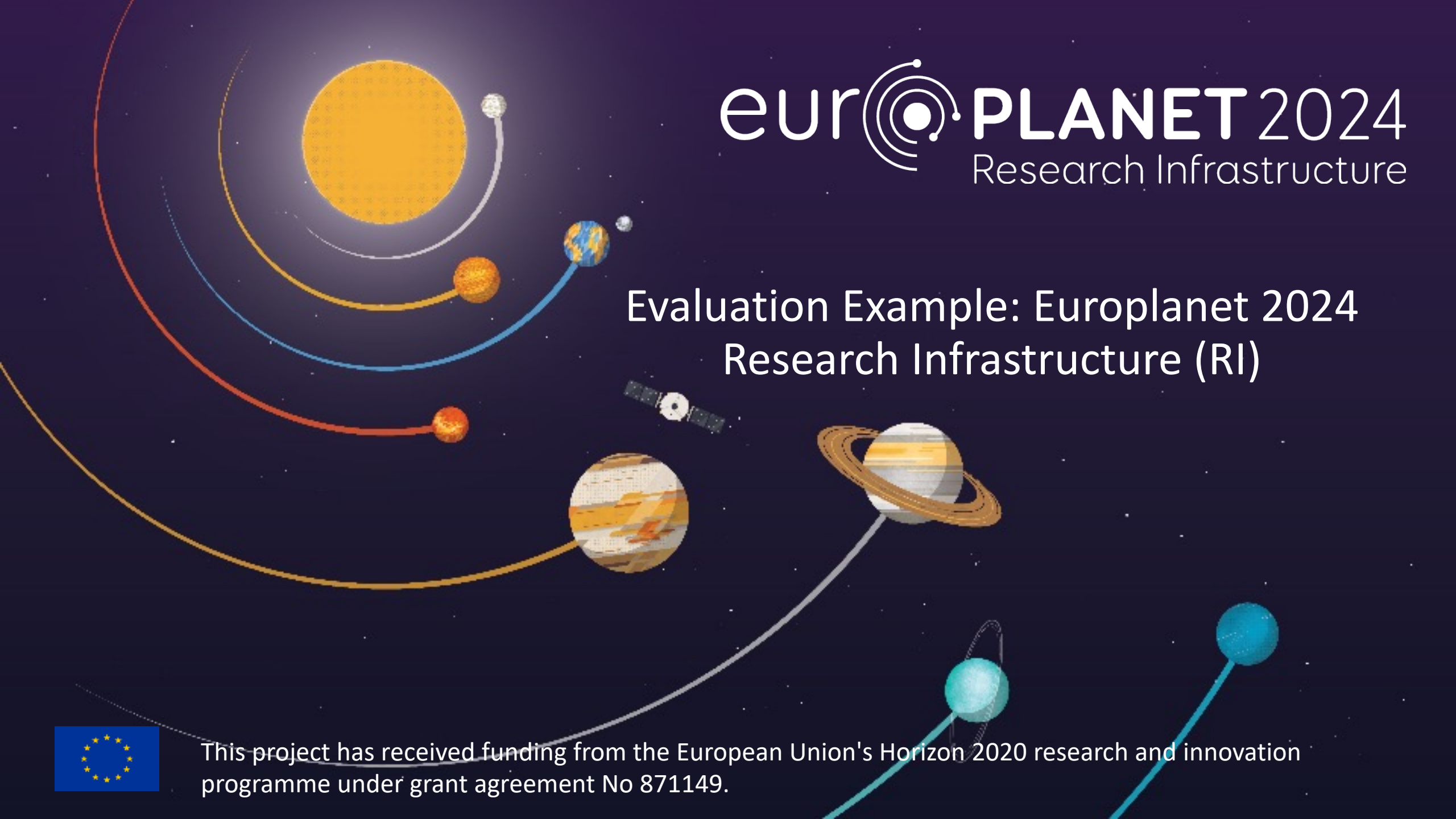
Provide high quality scientific data and associated services



Social responsibility

Table 2. Core Impact Indicators, sorted by strategic objectives

Standard Objectives	Core Impact Indicators	Data
Be a national or world scientific leading RI and an enabling facility to support science		
	S2-Number of citations	Total number of citations received by publications. May include: authors from the RI or using the RI
	S3-Number of publications in high-impact factor journals	Number of publications from RI users published within Q1 journals[3]
	S4-Number of projects granted	Number of projects funded by external grants (may be divided into user or discipline categories)
	S6-Number of scientific users	Number of users, Discipline distribution, Top scientific users, Nationality distribution
	S9-Collaboration excellence *(scientific)*	Total number of applications for using the RI Total number of applications from world leading teams
	S10-Structuring effects[4] of the RI on the scientific community	Number of projects developed with other RIs, universities, etc. New collaborations...
Be an enabling facility to support innovation	T18-Patents with a commercial use	Number of patents and licensing (financial value of these patents)
	T20-Innovations co-developed with industry	Number of innovations/patents co-developed with industry
	T24-Collaborative projects with industrial partners	Number of industrial users, number of collaborative projects in which industry is directly involved



Evaluation Example: Europlanet 2024 Research Infrastructure (RI)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 871149.

Evaluation purpose

Assess the effectiveness of the Europlanet Research Infrastructure for its user community

Evaluation for 2024 RI

- 3 strands of work
- Transnational Access (visits to field sites, labs)
- Virtual Access (data services & tools linked to EOSC - VESPA, GMAP, SPIDER, ML)
- Networking Activities (NA1, NA2)

Europlanet 2024 RI - Overview

- Working backwards from impacts – what is the difference we've made and how did we do it?
- Attend to EC interests: working with industry, value of TA visits (are they necessary?), socioeconomic impact, role of RI in widening science base in Europe [big picture]
- Structured around indicators

Evaluation for 2024 RI – structure

- Structured around indicators
- Online templates to collect quantitative indicators/metrics
  - Organised by TA, VA, NA
  - Can be modified!
- Follow-up surveys with participants (TA, NA)
- Interviews (Zoom) with some participants (e.g. visitors to TAs, mentors & mentees)
- Ongoing discussions with TA/VA/NA managers (collating other data sources)

Data collected

TA

- Impact forms from TA facilities (6-12 months)
- Post-visit evaluation forms (197 received)
- Post-visit interviews (62)
- Long-term follow-up evaluation forms (65, 19)

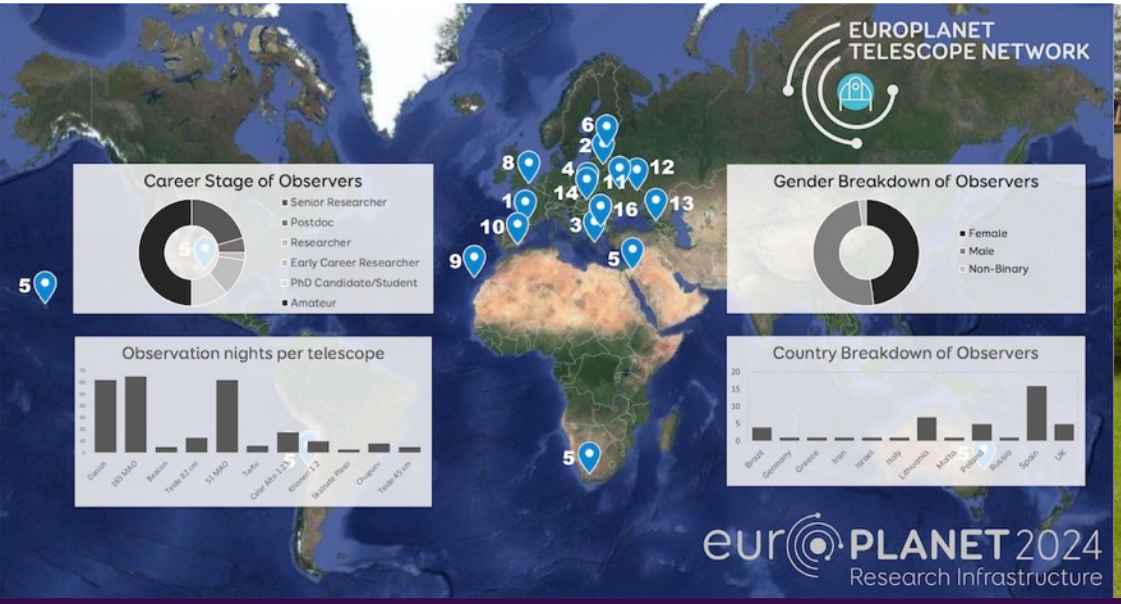
VA

- Metrics
- Winter Schools evaluations
- Interviews with services leaders (SPIDER, GMAP, etc)

Data collected

NA

Feedback forms and interviews – Telescope Network, Mentorship Programme, Expert Exchange Programme



Europlanet Has Delivered

- Science and collaborations that simply **would not be possible without participation in Europlanet**, due to the access to facilities, both equipment and expertise
- Impact for **early career researchers**: visits provide opportunities to build networks and carry out research that would not otherwise be available to them, thus accelerating their career development.
- Virtual observatory for planetary data, space weather, planetary mapping and machine learning tools, contributed by research groups across Europe
- Mentorship programme, Expert Exchange programme, Winter and Summer Schools and training workshops
- A platform for the European Planetary community, a collaborator for other space and astronomy
- **Europlanet >> Collaboration >> Impactful Science.**

Focus for Sustainability

- Collaboration and networking
  - Access for individuals who don’t have such opportunities
  - Low ‘barriers to entry’ (application forms)
  - Individualised support, with global reach
  - Established programmes/activities/services

Discussion

Any final questions/comments?

Thank you!

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Over to you – Evaluation surgery

- What are you evaluating?
- What approaches might work for you?