Access to Research Infrastructures: Process and Modalities

Module 5 - Access Financial framework

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Module Overview

- Sustainability of access
- (Access to) Service cost estimation
- Hands-on session for the service cost estimation

Break

- Questionnaires

What is Sustainability?

- “Having the resources and the policy framework to deliver services and support users into the future”

Long-Term Sustainability of Research Infrastructures

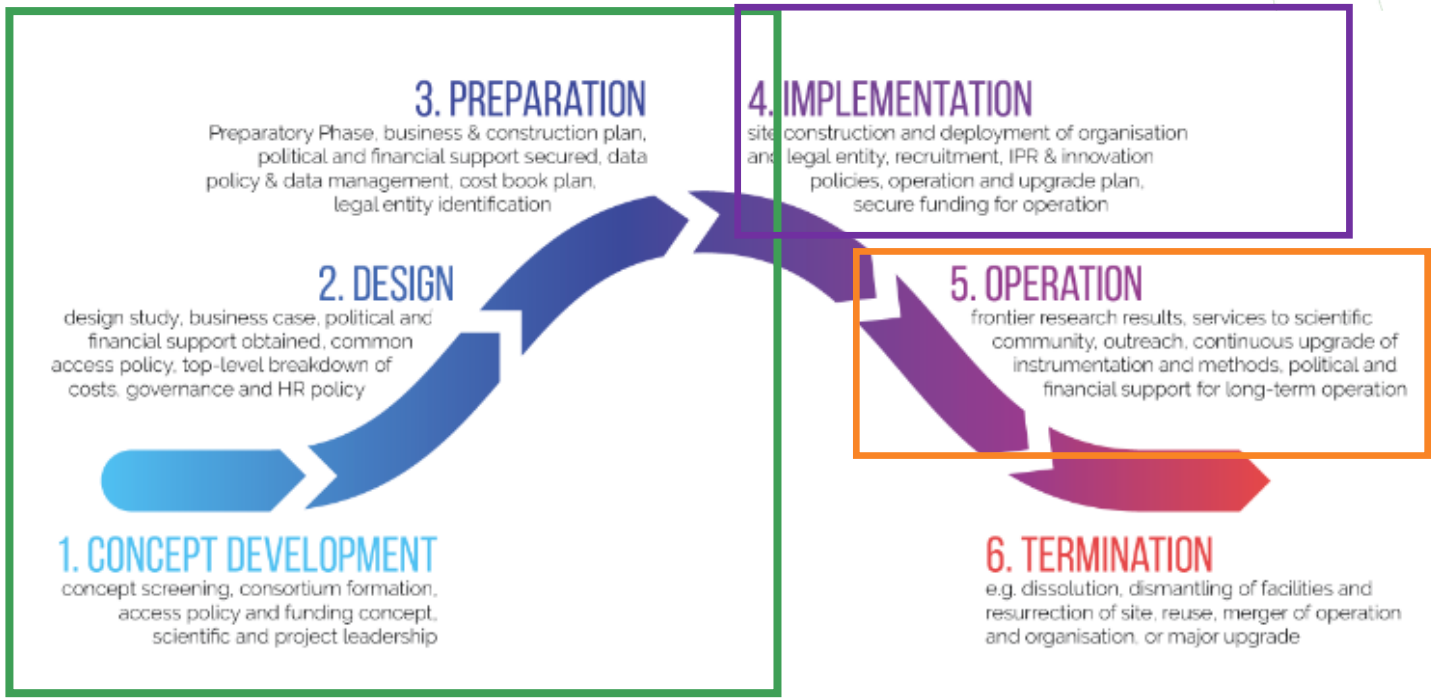
MAIN RECOMMENDATIONS

1. **Establish and maintain excellence** through the entire lifecycle of RIs by all appropriate means, by securing adequate framework conditions, and by opening the RIs up to the world.
2. **Ensure that RIs have the right people in the right place at the right time** by strengthening and harmonising national research and educational systems to make sure that all essential skills are available.
3. Harmonise and **integrate a vision for convergent operation of RIs and e-Infrastructures** in Europe to ensure cost-effective service provision to the user communities.
4. **Fully exploit the potential of RIs as innovation hubs** by incorporating strategies for their development into national and European innovation policies.
5. Set up effective means of **determining the economic and wider social value of RIs**, and incorporate these benefits into science-policy-society dialogues.
6. Establish adequate framework conditions **for effective governance and sustainable long-term funding for RIs at every stage in their lifecycle**, together with effective management.
7. Foster broader **coordination at National and European levels** when designing processes for planning and supporting national and pan European RIs and so enhance their strategic value.

Funding the RI lifecycle

EU project funds

Large National investments



Regular and sustained financial support

What about ACCESS?

Sustainability as a recommendation

Recommendations

Effective RI governance, long-term funding and effective management

6.1 **At the European level** continue to launch initiatives which improve the management of RIs through the exchange of best practices and lessons learnt, and contribute to strategic planning, evaluation, and training.

6.2 **European and National Authorities** should contribute to the development of a feasible business model that exploits innovation potential, support for costs for Open Access and incorporate these into the national governance models.

6.3 **European Commission** together with **National Authorities** should explore improving the ERIC regulation so that its potential may be more fully exploited.

6.4 **National Authorities** should consider governance models which provide the right balance between long-term funding commitments (including operation costs and strategic developments) and regular evaluation of the RI performance.

6.5 **Research Infrastructures** must develop, right from the start of the planning phase and prior to the roadmapping exercise, a comprehensive business plan covering all stages of their lifecycle including upgrading and decommissioning.

Revised eu charter

ESFRI European Strategy Forum on Research Infrastructures

ESFRI Report
Access to Research Infrastructures and Charter on Access to RIs
December 2023

EXECUTIVE SUMMARY

There are still challenges to **broader and effective access** to research infrastructures (RIs) as needed by users to tackle scientific and societal challenges and to underpin the new European Research Area (ERA)

[...]

Legal, institutional, financial, and other dimensions

- Help identify **diversified funding streams** for access, advocating for long-term support.
- **EU support**: ensure continuity and appropriate budget and a better balance between curiosity and challenge-driven access.

2017 – 2025

- Why is this taking so long?
- Are we (us/you) anywhere near the solution?
- Do we need to change perspective?

Key components of sustainability

- **Cost Management**
- Diverse Revenue Streams
- Stakeholder Engagement

Cost Management

- **Budgeting and Forecasting**:
  - Accurate, actual estimations
  - Regularly update budgets and financial forecasts to anticipate and manage expenses effectively.
- **Operational Efficiency**: Optimize processes to reduce costs, such as through energy-efficient technologies and streamlined operations.

Current Access Costing in use

Based on the EU Decision authorising the use of unit costs for the costs of providing trans-national and virtual access in Research Infrastructures actions under the Horizon Europe

"Recipients of Union funds shall declare for providing access to one installation the following eligible costs on the basis of either of the following:

*(a) **unit costs** calculated in accordance with their historical data for the categories of eligible costs mentioned below.*

*(b) the reimbursement of eligible **costs actually incurred** for the categories of eligible costs mentioned below.*

*(c) a **combination of the forms of costs** referred to in points (a) and (b), if part of the eligible access costs varies significantly and cannot be represented by its average."*

Unit access costs

Calculating unit costs

- ✗ **requires suitable tools** that allow to trace the costs per service (and must be auditable costs
- ✗ must be **representative, i.e., based on minimum reference period** (à priori minimum 2 years)
- ✗ Require information on the **total quantity of access provided to the service** for the same reference period

Suitable tools for tracing the costs

- Tools must be certifiable / auditable
- Must be according to national / institutional accounting practices
- Examples:
  - Personnel costs: time sheets
  - Equipment and other costs: invoices
  - Access provision: document certifying the quantity of access to the service provided (e.g., via online/offline interface)

Quantity of access: Access units

Access unit (AU)

➔Measure specifying the Access offered to the Users. Access Units may vary."

➔The access units should be defined for each service. There is no need for one coherent access unit. However, as access costs are defined on the basis of the access units defined, a minimum amount of coherence / simplification should be sought.

Examples for AU

1 AU = 1 SWD (or 1 SWH)	One staff-working-day (or staff-working-hour) = equivalence of one labour day (hour) required by the facility staff person to provide the access to the services
1 AU = 1 UWD	One user-working-day = equipvalence of one working day spent by one user at the facility to access the services
1 AU = 1 DAY	One day = equivalence of one working day spent by one or several users at the facility to use ist services, independent of the number of users
Other…	One service provided (e.g., one calibration, one data processing service), etc.

Formula for calculating the unit cost

$$\text{Unit cost} = \frac{\text{Average total access costs over reference period (past 2 years)}}{\text{Average total quantity of access over reference period (past 2 years)}}$$

Cost tracing

Unit Counting

Calculation of TNA Costs – Unit access cost

Participant number		Organisation short name		Short name of Infrastructure	
Installation number		Short name of Installation		Unit of access	

Calculation of the Unit Cost (UC) for Trans-national Access[1]

Reference period	from:		to:	

A. Direct eligible costs of providing access over the last two years[3] excluding personnel costs	Describe the direct eligible costs[2] for providing access to the installation over the reference period (the last two closed financial years[3] preceding the current one). Capital investments (including depreciation costs of equipment, infrastructure or other assets) and internally invoiced goods and services are ineligible costs unless otherwise specified in the Work Programme.	Eligible Costs (€)
	Total A	0,00
	of which subcontracting (A')	

B. Personnel direct eligible costs needed to provide access over the last two years[3]	Category of staff [4]	Person-Months	Personnel Costs (€)
	Total B		0,00

C. Indirect eligible costs: 25% x ([A-A']+B)	0,00
D. Total access eligible costs over the last two years[3] = A+B+C	0,00

Unit of access

Reference period (minimum 2 years)

Description of costs and costs (€) for providing access (personnel costs excluded, no investment costs)

→ Direct, variable costs

Description of personnel costs, costs (€) and PM for providing access (personnel costs excluded, no investment costs)

→ Direct, variable costs

Indirect, variable costs (25 % flat)

Total access costs = direct + indirect costs

Calculation of TNA Costs – Unit access eligible costs

- Direct costs (other than personnel and investment costs) → must be traceable and auditable
  - Contracts for maintenance and repair for the functioning of the installation
  - Consumables specifically used for the installation and the research work of the users
  - Contracts for installation management, including security fees, insurance costs, quality control and certification, specifically incurred for the functioning of the installation
  - Energy power and water supplied for the installation.
  - General services when included in the provided access services (e.g. library costs, shipping costs).
  - Software licence, internet connection or other electronic services for data management and computing when they are needed to provide access services,
  - Specific scientific services included in the access provided or needed for the provision of access
- Direct personnel costs → must be traceable and auditable
  - Administrative, technical and scientific staff directly assigned to the functioning of the installation and to the support of the users

Accurate, actual estimations?

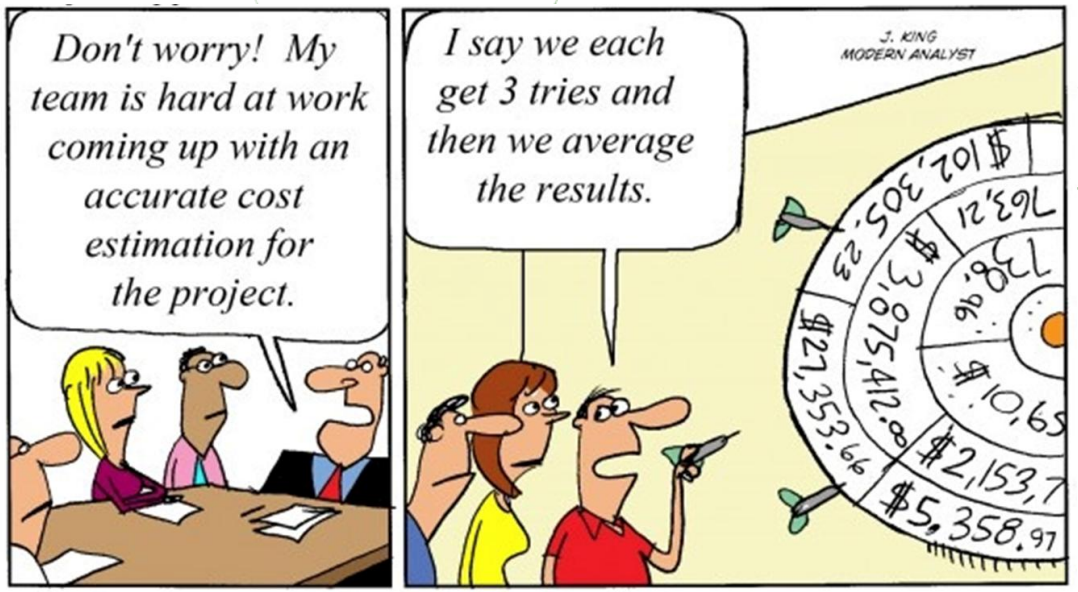
Unit access cost calculations

D. Total access eligible costs over the last two years[3] = A+B+C	0,00
E. Total quantity of access provided to all normal users of the installation (i.e. both internal and external) over the last two years[3]	1
F. Unit cost =D/E	0
G. Unit cost charged to the project	0
H. Quantity of access offered under the project (over the whole duration of the project)	0
I. **Access Cost on the basis of UC for the access offered under the project = G x H**	0,00

Total access costs = direct + indirect costs

Total quantity of access provided in reference period

Unit cost* and unit costs charged to project



Calculation of TNA Costs – Actual access cost

Actual access cost calculations

Participant number		Organisation short name		Short name of Infrastructure	
Installation number		Short name of Installation		Unit of access	

If access costs are declared on the basis of actual cost or on the basis of a combination[5] of unit cost and actual costs, please use the following table to estimate the actual costs.

Access provision period (usually the project life-time)	**from:**		**to:**	
A. Direct eligible costs of providing access to the selected user groups, excluding personnel costs	Describe the estimated costs that will be actually and solely incurred for providing access to the user groups selected for support under the action[6]. Capital investments (including depreciation costs of equipment, infrastructure or other assets) and internally invoiced goods and services are ineligible costs unless otherwise specified in the Work Programme.			**Eligible Costs (€)**
			Total A	**0,00**
			of which subcontracting (A')	
B. Personnel direct eligible costs needed to provide access to the selected user groups	**Category of staff** [7]		**Person-Months**	**Personnel Costs (€)**
			Total B	**0,00**
C. Indirect eligible costs: 25% x ([A-A']+B)				0,00
D. **Actual Access Cost for the access offered under the project = A + B + C**				**0,00**

Unit of access

Reference period = access period during project lifetime

Description of costs and costs (€) for providing access during project lifetime (personnel costs excluded, no investment costs)

Description of personnel costs, costs (€) and PM for providing access (personnel costs excluded, no investment costs)

Indirect costs (25 % flat)

Total access costs = direct + indirect costs

Reimbursement by EU for actual costs incurred when access is provided

Some guidelines

- **Identification of the unit of analysis**
- **Service costs should be estimated as actual costs**
  - necessary for the provision to the selected users
  - identifiable, verifiable and recorded in the access provider's accounts
  - reasonable, justified and sound

Not knowing your costs is an expense you can't afford

Direct and indirect access costs

DIRECT COST

Costs that can be easily traced and allocated to the provision of each service:

- Direct personnel costs: technical, scientific, administrative staff
- Other direct costs, consumables, maintenance
- Transport, travel
- (Capital investment and equipment)

INDIRECT COST

Costs incurred by the usage of shared resources not directly traceable to each service

- Space rental
- Utilities (water, gas, fuel, electricity)
- General administration, insurance, taxes, overhead costs related to communication, office supplies, communication, …

Fixed and variable costs

FIXED COSTS

- **Costs for RI operations**
  They remain unchanged when the quantity of access provided changes

VARIABLE COSTS

- **Costs for provision of access to RI services**
  They depend on the quantity of access provided. When the quantity of access provided increases, variable costs increase, and vice versa

Fixed and variable costs

	FIXED COSTS	VARIABLE COSTS
	➢ **Costs for RI operations** They remain unchanged when the quantity of access provided changes	➢ **Costs for provision of access to RI services** They depend on the quantity of access provided. When the quantity of access provided increases, variable costs increase, and vice versa
DIRECT COST	• Capital investment and equipment	• Direct personnel costs: technical, scientific, administrative staff • Other direct costs, consumables, maintenance • Transport, travel
INDIRECT COST	• Space rental • Utilities (water, gas, fuel, electricity) • General administration, insurance, taxes, overhead costs related to communication, office supplies, communication, …	• Variable (indirect) costs, e.g.: - Some utilities - Some general overhead cost

10 steps to accurate service costing

1. Determine how your organization is going to use the results of the costing analysis (access cost recovery – access value)
2. Develop a service inventory (catalogue)
3. Figure out what data you have available and where to find it
4. Gather the cost-item actual spending data, input it in a spreadsheet and store the related information source
5. Categorize your cost-item data into fixed (operating) costs and variable service provision costs

10 steps to accurate service costing

6 Further break down the cost items into cost categories (personnel, consumables, etc.)

7 Associate personnel (each position) with the service they provide

8 Allocate non-personnel costs to services.

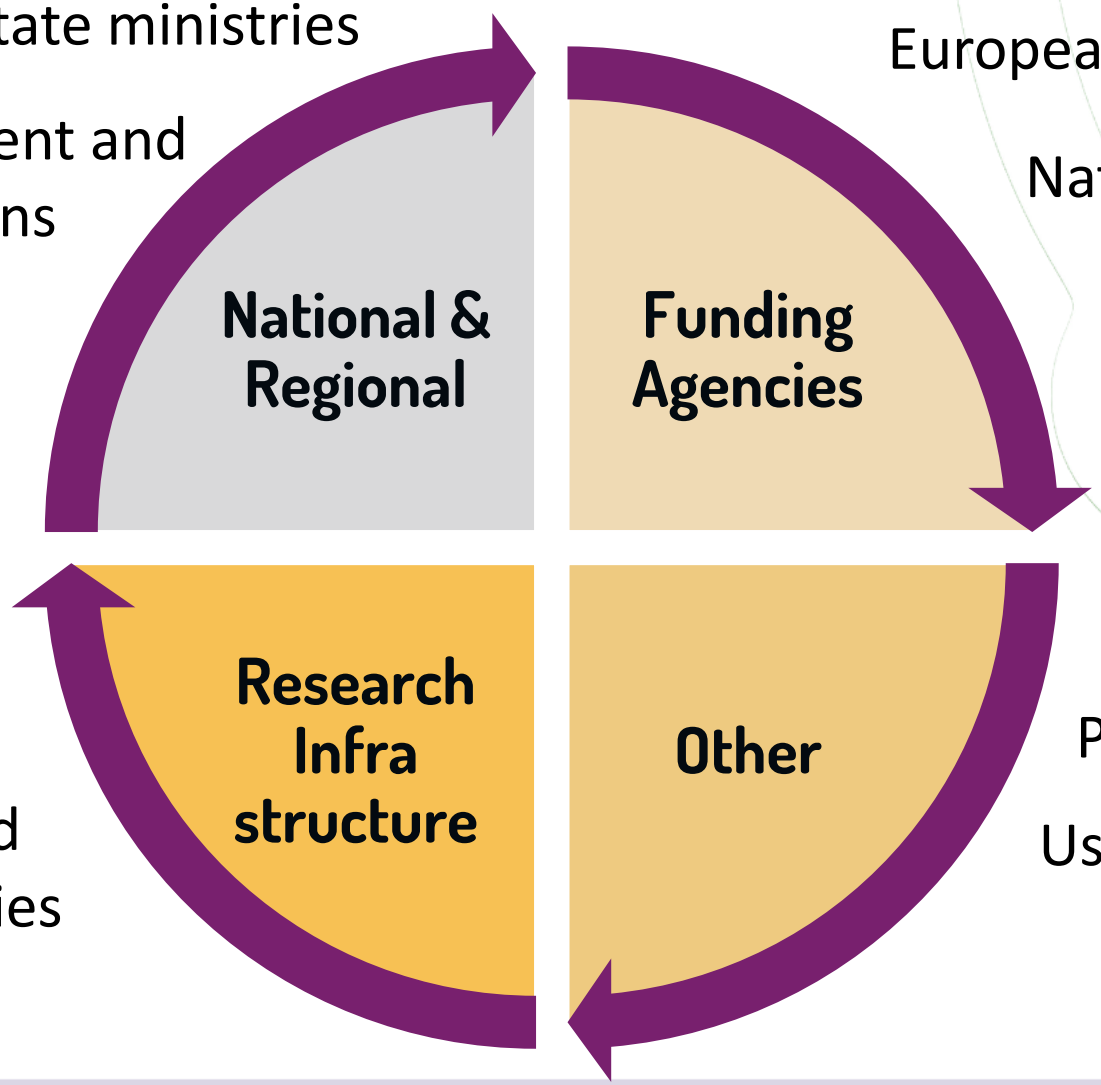
9 Allocate a quota of the fixed costs to the service → **allocation key**

10 Document the methodology you used and the cost analysis

Key components of sustainability

- Cost Management
- **Diverse Revenue Streams**
- Stakeholder Engagement

Revenue streams for access to services funding



State ministries

Regional government and administrations

National agencies

National research organisations

European Commission

National agencies

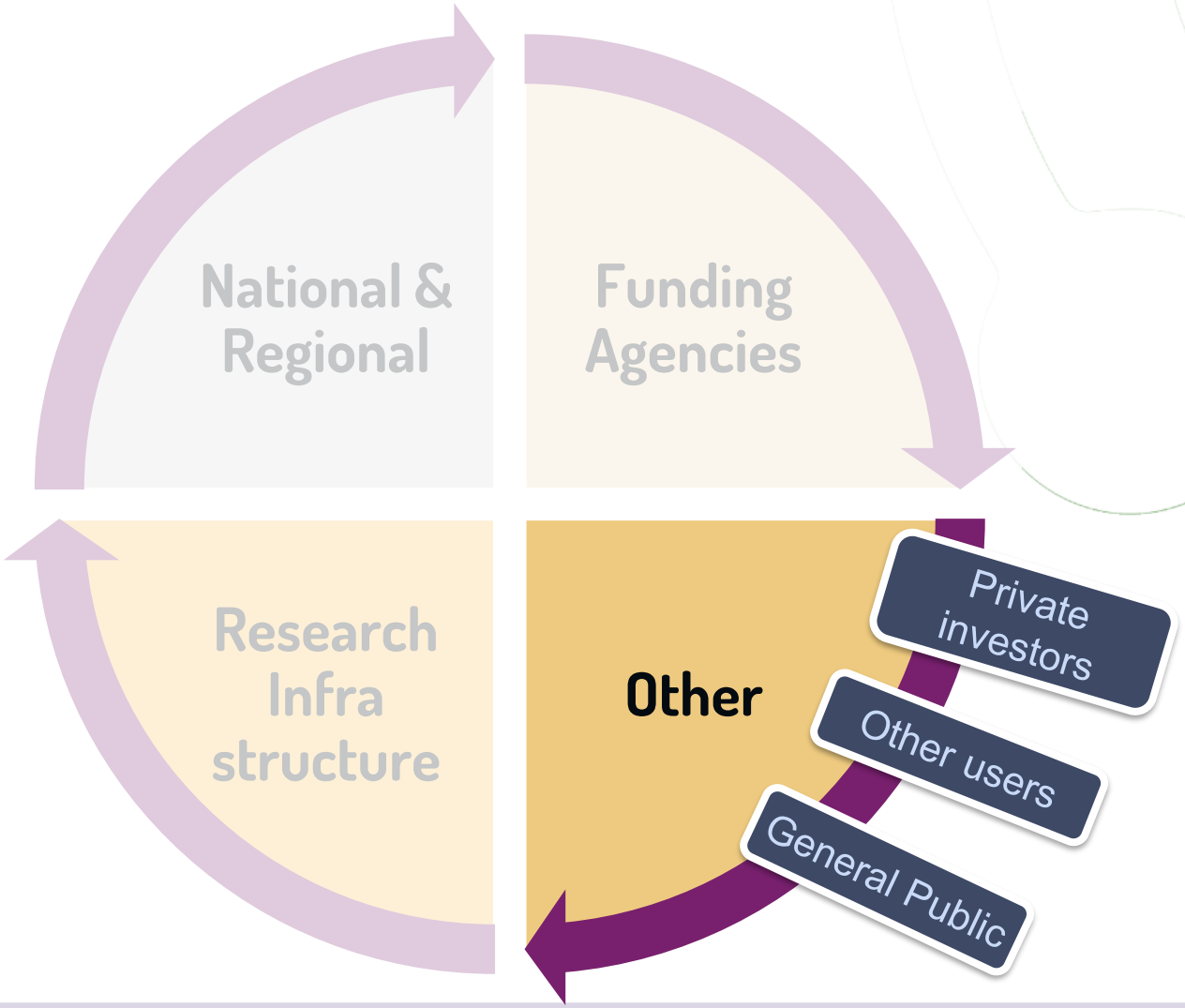
Other international (EPA, OECD, UNESCO, ESA, EEA. ..)

Private investors

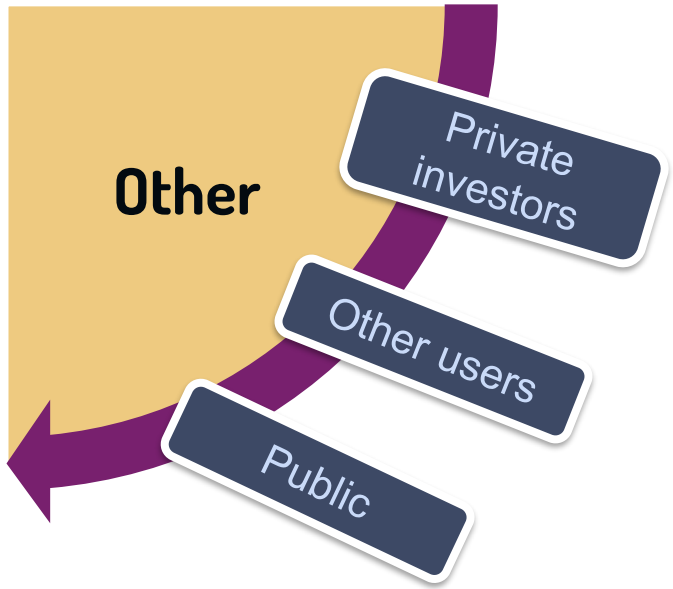
Users

RI Member and observer countries

Revenue streams for access to services funding

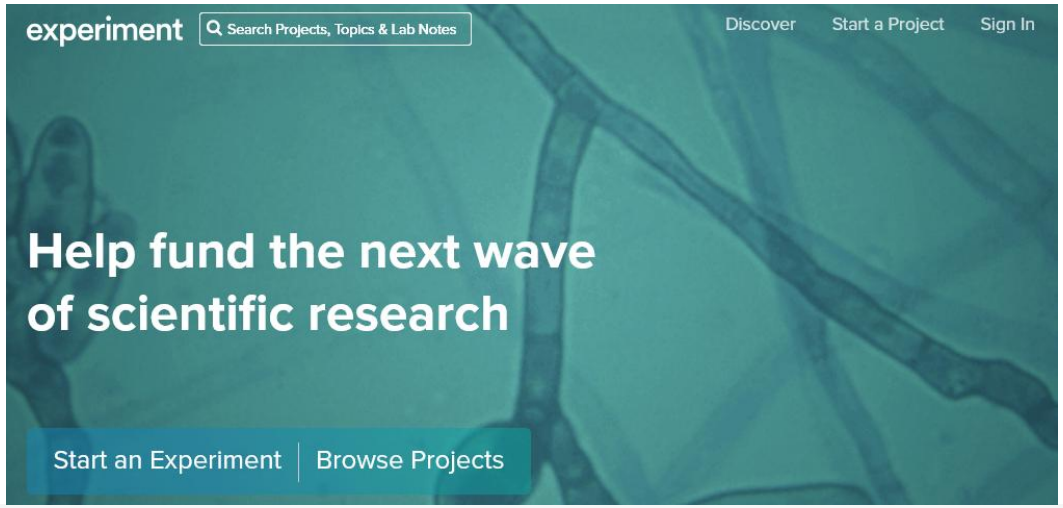


Other funding



- ✗ Fee-based access for efficient use of RI resources
- ✗ Engaging user funds:
  - Exploiting innovation potential and use of RI services by private sector
  - Streamlining public research funding: using research grant funding towards access
  - Additional contributions from non-member countries
- ✗ Other?? → be creative!
- ✗ Fundraising?

Fundraising!



Statistics

48.6%	3,403	1,326	1,358	28	75,138
Project Success Rate	Projects Launched	Projects Funded	Projects Failed	Live Projects	Researchers
$12,162,347	$12,614	$142	22,965	55,425	3,555
Total Pledged	Weekly Pledged	Average Pledge	Lab Notes Published	Backers	Repeat Backers
60	46,449	4,785	$3,574	23,151	20
Published Papers Funded	Comments	Stickers Mailed	Average Project Size	Monthly Active Users	Categories

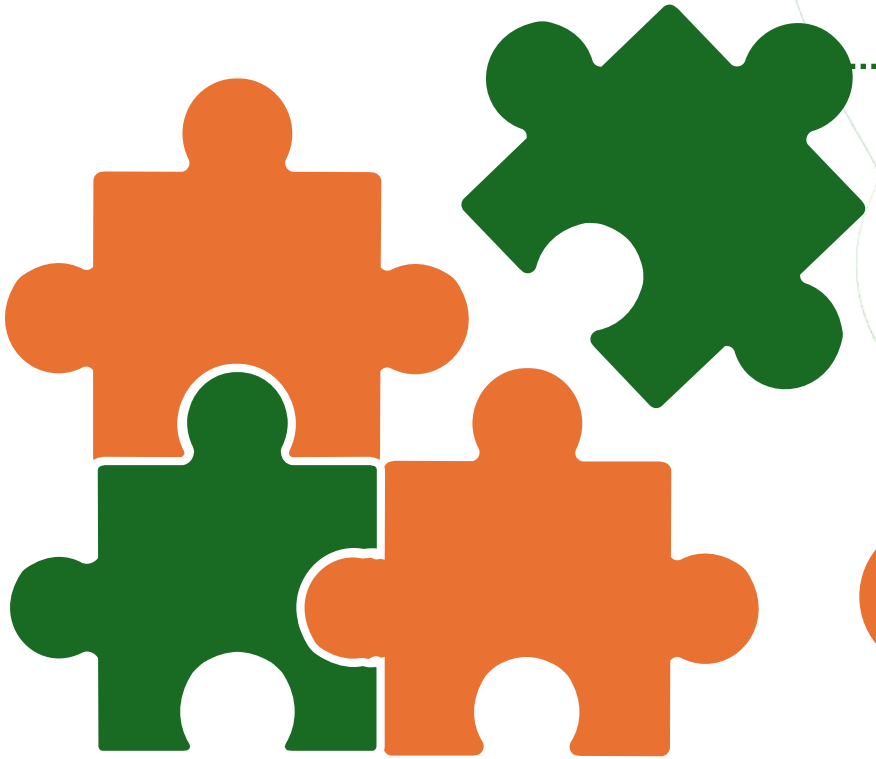
Sustainability of access to RI services

Reasonable Access costing

RI *(additional)* costs incurred for providing services to users.

European and National Roadmaps

Ensure coherent and complementary funding for operations



Realistic funding models

Ensure sustainability based on suitable costing and pricing policies

Revenue streams

There are different funding sources and funding entities

Access Costing & Pricing Policy

- So far EU-funded projects' rules for that
- Need to move to a more efficient cost management
- Common policy for ITINERIS?

Access Costing & Pricing Policy

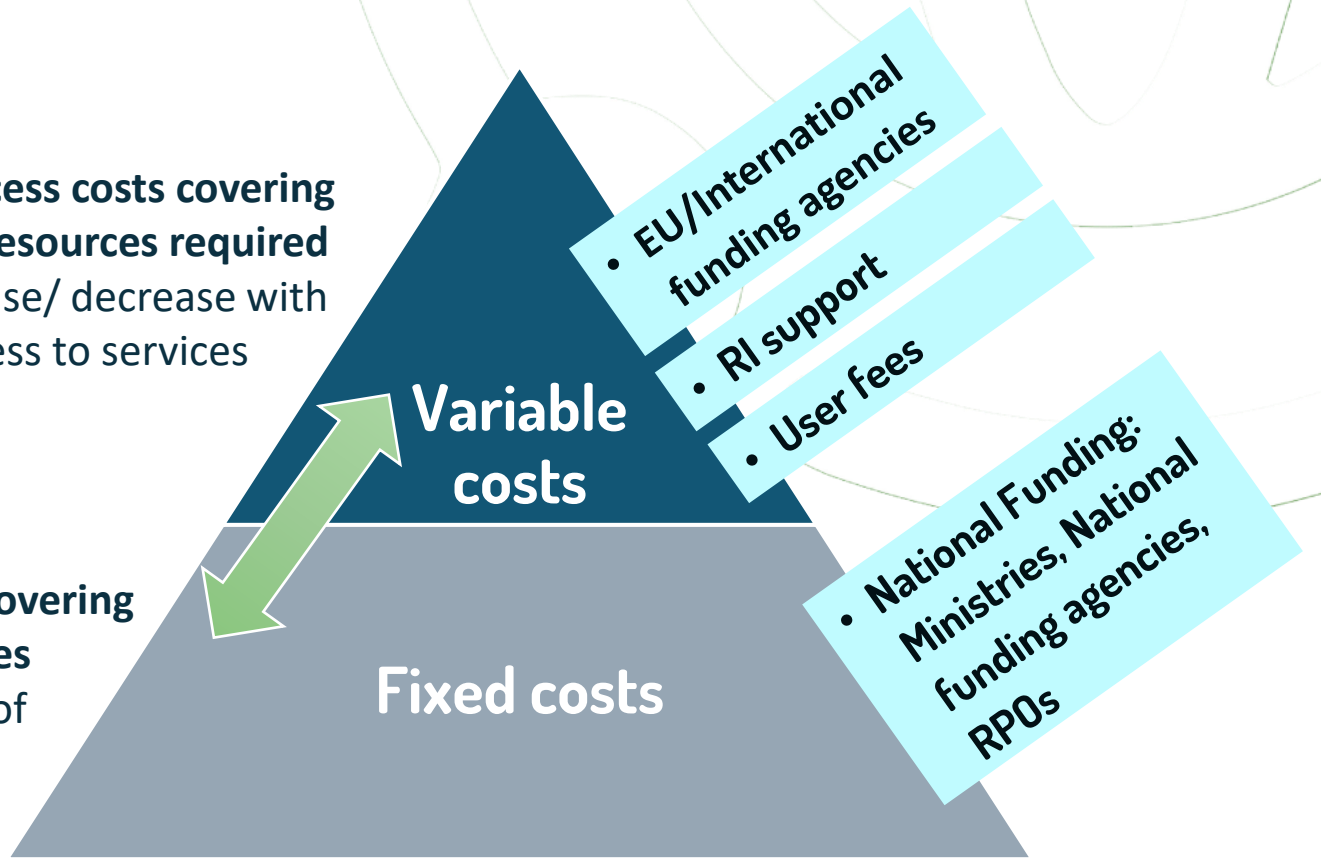
1. Objectives
2. Scope
3. Authority
4. Policy
Agreements
Cost calculation
Pricing
5. Procedural principles
Approvals
Compliance
Support and review
6. Roles and responsibilities
7. Definitions
POLICY APPROVER
POLICY STEWARD
REVIEW
VERSION HISTORY

Some key questions to answer

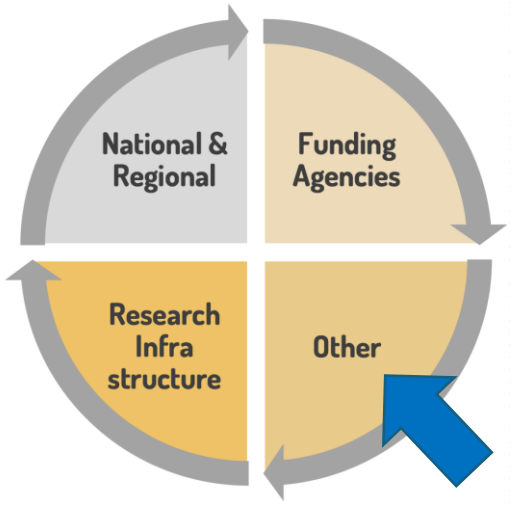
- Access Value vs Access Cost
- Which cost model?

Variable access costs covering additional resources required
→ Increase/ decrease with user access to services

Fixed access costs covering operation of facilities
→ Independent of extent of service provision

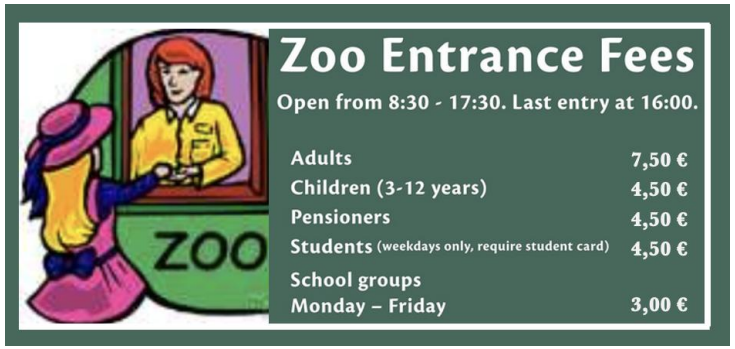


From the access cost model to the pricing scheme



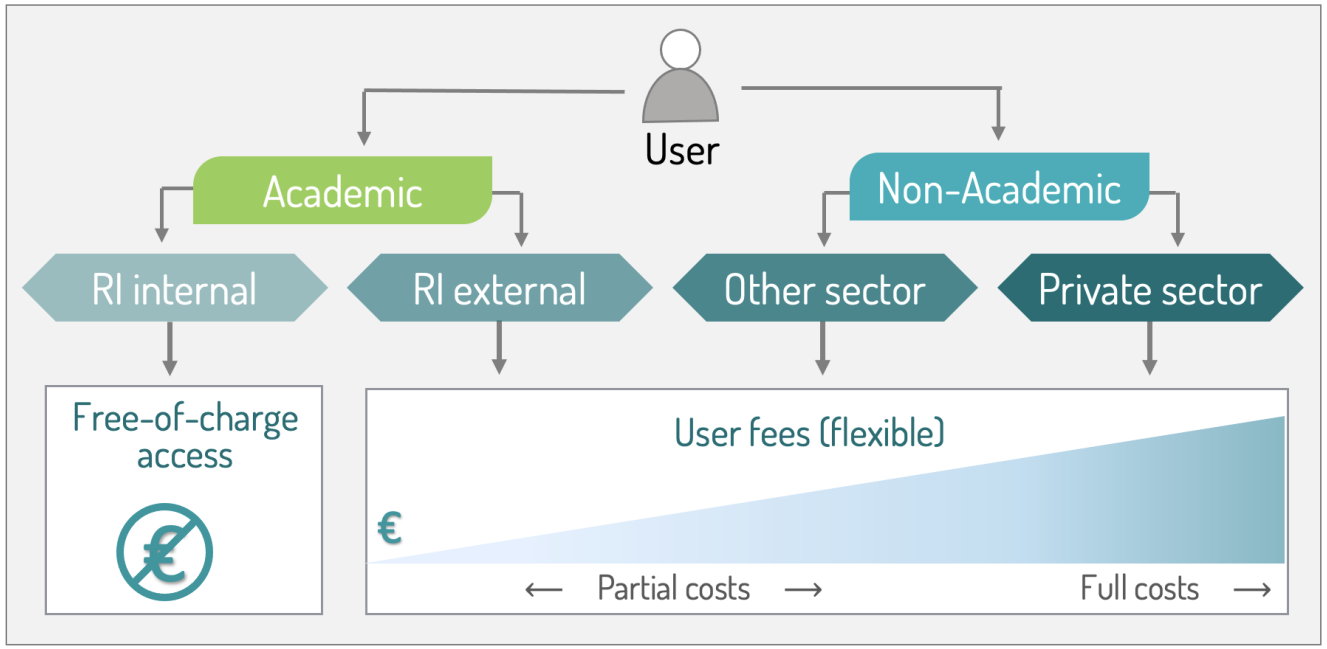
- A pricing scheme allows to set a range of users fees for RI services.
- User fees may cover all or some of the access costs that need to be covered, depending on the applicable access cost model
- User fees represent one potential funding source and typically do not cover the core access funding
- There is no one-size-fits all for RI pricing scheme

Full costs → Access costs model → Pricing scheme



Reflections on RI pricing policy 1/2

User fees may be charged flexibly, depending on the type of user and availability of funding



Free access via available access funding (e.g., agencies, RPOs)

→ Obligation to provide open access to results

Flexible user fees applied, e.g., via available access user funding

Full cost fees

→ Proprietary research , no obligation to provide open access to results

Reflections on RI pricing policy 2/2

- **Pricing rates depend on the availability of and balance with the other funding sources (national/regional funding, agency funding, RI funding)**
- User fees may contribute to closing a gap in funding the access costs.
- The access mechanism should not discriminate on the sole basis of the capacity of the user to pay the user fee.
- User fees are usually charged to
  - private sector users
  - other users (e.g., outside RI member countries),
  - users having specific research grants or home institution funding, or
  - Users requiring specific tailored services.

Key components of sustainability

- Cost Management
- Diverse Revenue Streams
- **Stakeholder Engagement**

Stakeholder engagement

	Identify Stakeholder	Stakeholder Assessment	Plan Communication	Engage Stakeholders
TASKS	• Identify Stakeholder Groups • Identify individual stakeholder representatives • Create initial stakeholder list	• Conduct high-level stakeholder assessment • Prioritise stakeholders • Develop stakeholder map	• Create Stakeholder Communications Planning Sheet • Identify engagement activities • Develop detailed engagement plans	• Maintain plan to support ongoing engagement activities • Execute stakeholder communication plan • Monitor progress
OUTPUT	• Stakeholder list • This is a sample text that can be edit • This is a sample text that can be edit • This is a sample text that can	• Stakeholder map • Engagement Grid • Updated stakeholder list	• Stakeholder communications planning sheet • Stakeholder communications plan	• Updated stakeholder communication plan • Communication & engagement activities • Feedback mechanisms implemented

THANKS!

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