



e-Infrastructure

Impact and metrics

10th e-Infrastructure concertation meeting

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European Commission
6 March 2013, Brussels*



Metrics in new Framework Programme

Specific Programme Implementing Horizon 2020

Specific objectives (Article 3)

*"The specific programme shall be **assessed** in relation to **results and impact** as measured against **performance indicators**"*

Metrics in the Commission

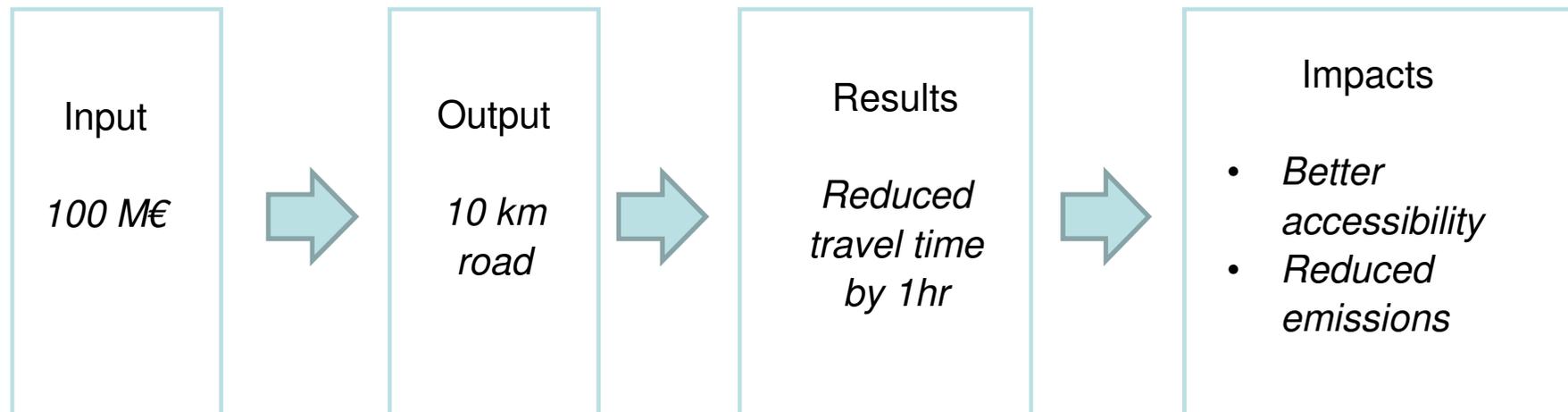
To enable DG CONNECT to better monitor progress and better fulfil its mission

- Better regulation
- More transparency
- More accountability
- More accurate quality control



Metrics theory

linear example from transport





Back to 2010: 8th e-Infra concertation meeting in Geneva

Session (5 hours!) on socio-economic impact evaluation of e-infrastructures

Presentations from invited speakers and projects (incl. ERINA+, eNventory, IMPACT study) followed by panel discussion

Findings

Quantitative ex-post impact evaluations lacking, measuring impacts challenging, need capturing data over long periods, no "one-size-fits-all" methodology,...

*There are **distinct groups of indicators** related to e-Infra impact assessment: infrastructure-related, usage-related, affordability-related, knowledge-related etc.*

*Impact assessment is a **sustained effort** requiring continuity*





Back to 2010: Recommendations

- A process for the **continuous measurement of the impact of each e-Infrastructure** initiative needs to be deployed in order to ensure a continuous adaptation of the infrastructure to the changing user needs and realities.
- Evaluation should adopt a **holistic approach** with micro-meso-macro assessments and applied to short, mid and long term.
- Impact assessment should **not** be **over complicated** but at the same time results should **not** be **based on a single indicator**.
- The **input vector** of impact assessment has to measure the "**quality of experience**", the (negative) impact if the e-Infrastructure was not there and the way that the e-infrastructure empowers researchers.
- The **output** of impact assessment should **not** be **seen in isolation**. It has to reveal the unique selling point and the indirect impact spillover. The challenge is to derive a "convoluted" impact at "higher level", e.g. real macroeconomic and regional development indicators.



Actions from 2010 to 2013 (1)

✓ *Three projects** :



ERINA+ - proposed methodology for socio-economic impact assessment of projects



eNventory – developed tools for a European eInfrastructures Observatory to monitor the development of e-infrastructure



e-Fiscal - analyses costs and cost structures of European HTC and HPC e-Infrastructures

***results to be presented in this session**



Actions from 2010 to 2013 (2)

Two studies:

IMPACT* (2010) – Development of impact measures for e-Infrastructures

EPIRIA (in progress) - Evaluation of Pertinence and Impact of Research Infrastructure Activity in FP7

* report available on-line





Public consultation on METRICS

How are we doing?

- We have identified facts & figures to measure our performance : are there any data or indicators that we missed?
- This is a call for **evidence** and for your **opinion**.

<https://ec.europa.eu/digital-agenda/en/news/help-us-improve-our-analysis-and-measurement>

**Public consultation
open until
March 15th !**

bit.ly/DAE_Metrics





Metrics fiches on e-Infrastructures

1. Data-centric science and engineering

Indicators:

- Cross-border data traffic over the research networks
- Number of people involved in working groups active in the framework of the RDA; number of international agreements and standards
- Number of interconnected open access data repositories





Metrics fiches on e-Infrastructures

2. Computational infrastructure

Indicators:

- Amount of computing cycles available to researchers at European level (cross-country)
- Number of TOP20 supercomputers located in Europe
- Number of people trained in use of HPC
- Number of EGI users
- European companies' share of the HPC market (systems and software)





Metrics fiches on e-Infrastructures

3. GÉANT

Indicators:

- Total bandwidth available in GÉANT (Gbit-km)
- Share of the network that is dark fiber
- Data traffic between National Research and Education Networks (NRENs)
- Data traffic between EU and RoW (rest of the world)
- eduRoam authentications per month



Metrics fiches on e-Infrastructures

4. VRCs and e-Science environments

Indicators:

- Data traffic over the research networks
- Number of disciplines / research communities / users that have "gone digital"



Questions

- On the level of the programme as a whole:
 - *How to measure impact in terms of "increased efficiency and creativity of research"? In terms of "seamless digital ERA"?*
 - *What are appropriate metrics for outputs / results / impact?*
- At the level of each of the 4 priorities:
 - *Are the metrics the Commission suggests appropriate?*
- At the level of each project:
 - *Should each project be asked to define its own metrics?*
 - *Should we also have common metrics across projects?*





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How are you doing?



***Sharing
is
caring!!!***



