JRC POLICY BRIEF
ON TECHNOLOGY INFRASTRUCTURES

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CONCORDi 2021

Industrial Innovation for competitive sustainability

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Background

- TIs are **mostly managed and hosted by Research Performing Organisations –** i.e. mainly RTOs and Technical Universities

- TI managers have the key role to create, operate, maintain, upgrade, and decommission TIs, **requiring very high and sustainable investments that industry cannot afford**.

- TIs are open to **public and private users including large companies and SMEs** to integrate innovative technologies into new products, processes and services.

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Background

- TIs are **enablers for technology transfer** from basic research to the market, especially to SMEs, **and for regional development**, i.e. Smart Specialisation Strategies

- TIs are essential to **boost industry competitiveness** and to deliver on the **Green and Digital Transitions**, need of a high-level dynamism and new quality of infrastructures.

- There is a **thin boundary between RIs and TIs**, where sometimes the same facility can play both roles depending on e.g. the TRL level of projects carried out, and an RI could also evolve into a TI as the knowledge and technology maturates.

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Policy Context

Staff Working Document on TIs (2019)

- **Visibility**: enable users to find the services and facilities they need (consolidating existing mappings)

- **Prioritisation**: streamline and coordinate targeted actions between EU, national and regional levels

- **Accessibility**: enable quick and easy access to TIs (access conditions, IPR, cost, etc.)

- **Networks**: connect TIs together to share competences and best practices

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Policy Context

- ***EC Communication on a new ERA for Research and Innovation*** (Sept. 2020)
  Governance Structure: mapping, gap analysis, prioritisation, recommendation of common access conditions

- ***Council Conclusions on the New European Research Area*** (Dec. 2020)
  EU Strategy for Technology Infrastructures

- ***EC Proposal for a Council Recommendation on a Pact for Research and Innovation in Europe*** (Ju. 2021)
  Policy Agenda for the new ERA

- ***Council Recommendations for an ERA Policy Agenda*** (tomorrow - 26 Nov. 2021)

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Methodology and Focus

- **JRC – EARTO Workshop on Technology Infrastructures**
  - ➢ *30 September 2021 (49 experts)*

- **JRC – EARTO Questionnaire on Technology Infrastructures**
  - ➢ Target: TIs managers and operators from RTOs, Technical Universities and other relevant PROs.
  - ➢ *23 September to 13 October 2021*

- **EARTO Policy Event & Innovation Awards 2021**
  - ➢ Towards the new EU Strategy on Technology Infrastructures as key ERA Action to deliver the green & digital transition
  - ➢ *27 October 2021*

The role of TIs in the RD&I Ecosystem (1/1)

- TIs are essential to the **well-functioning of efficient European RD&I ecosystems**.

  - ➢ **A better integration of TIs in policy initiatives** at European, National and regional levels could further leverage their potential.

- TIs are not just physical or digital infrastructures, they also **require interdisciplinary competences and complex technological know-how and experts** to operate them.

  - ➢ An alignment with the **European Skills Agenda** would enable to avoid gaps.

- The TI landscape is very **diverse**. Streamlining and analysing **the existing European mappings of TIs** would enable to:

  - ➢ better understand their specificities, refine and create further typologies of TIs, and

  - ➢ better **tailor-made and evidence-based policies and investments.**

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The role of TIs in the RD&I Ecosystem (1/2)

- **RIs and TIs have each their own specificities.**

  ➢ The EU Strategy for TIs should **draw inspiration from ESFRI processes** when relevant, and design **dedicated ones** when needed - e.g. different stakeholders involved, bottom-up and value-chain approach for roadmapping of needs.

- **RIs and TIs need to be taken as part of an ecosystem** and not per opposition or disconnected.

  ➢ There is a whole continuum between RIs and TIs, and their (complementary) services need to be combined.

  ➢ **Links between ESFRI and the future EU Strategy for TIs** need to be built from the onset.

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Ensuring TIs Long-term sustainability (2/1)

- **TIs' managers foresight capabilities -** i.e. understanding both where the research forefront is going and identifying the future needs of industry - should be further leveraged in dedicated policy.

- **TIs' future users (public & private) need to be involved** throughout the creation process to **ensure their long-term use**. These actors should be part of the governance structure of the new EU Strategy on TIs to ensure its success.

- A sound **business model** ensuring the **long-term sustainability of the TI** is essential from the onset of the TI's creation process.

  - ➤ TIs need to be developed and upgraded at the same pace than the technologies and the products that are developed and tested: fast.

  - ➤ **More certainty around public funding cycles would leverage TIs' capabilities**.

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Ensuring TIs Long-term sustainability (2/2)

- Need for a **clear pathway of grant-based public support for capital investments** (CAPEX) for TIs, adapted to the speed needed for technology development.

- Creating synergies for a **more structural support to TIs** at European, national and regional levels would be of high added value in the currently scattered funding landscape.

- **Lack of public investment plans** focusing on the **upgrade of existing TIs**.

  ➢ These should be designed in **complementarity** with public investments targeting the **creation of new TIs**.

  ➢ **Importance of a balanced approach** (creating VS upgrading): not keeping existing TIs at the forefront of innovation may result in a **suboptimal use of public resources.**

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Ensuring TIs Long-term sustainability (2/3)

- **The use of TIs can generate high operational costs** (OPEX)**,** difficult to cover especially for SMEs and Academia users.

    ➢ **Publicly funded programmes enabling access to TIs** and covering real operational costs are an efficient way to **foster TIs accessibility** from a wide range of users.

    ➢ **Voucher systems** could be improved and further used to support SMEs' access to TIs.

- TIs also generate **maintenance costs**, which is sometimes coupled with operational costs but not always (in such case it needs to be covered by TI managers' own funding

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Towards an EU Strategy for TIs (3/1)

- **Taking stock of the public policy initiatives and instruments**, that currently exist to support TIs at regional, national and European levels via a **systematic observatory** would provide opportunities for benchmarking and streamlining investments.

- **Streamlining the existing repositories and mappings** of TIs at EU level covering both TIs' locations and the services and facilities on offer:

  ➤ would enable a **better understanding of the TIs' landscape** by policy-makers

  ➤ could be used to **foster accessibility to TIs** (if coupled with an efficient marketing campaign)

  ➤ and **create connections** between complementary TIs.

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Towards an EU Strategy for TIs (3/2)

- **Roadmaping of future needs** for CAPEX investments in TIs should be organised:

  ➢ with a **sectorial value-chain and bottom-up approach and** the involvement of TIs stakeholders,

  ➢ **by identifying the future needs for TIs in existing roadmaps** linked to current EU instruments and actions - e.g. European Partnerships, ERA Industrial Roadmaps, Industrial Alliances, etc.

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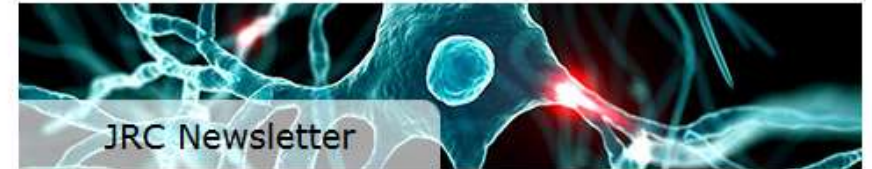
Towards an EU Strategy for TIs (3/3)

- A mechanism to draw from sectorial roadmaps and **prioritise and/or coordinate investments in TIs at European level** in strategic sectors would be valuable to maximise the use of public funds.

- An agile Advisory Board for TI Strategy should include **experts responsible for TIs within national ministries**, as well as **TIs managers** (foresight) and **users** (long-term use).

- The prioritisation mechanism and synchronisation of national/regional TIs' roadmaps needs to **take into account the different types of TIs**:

  ➢ for TIs of European scale & market niche: **duplication should be avoided** to achieve economies of scale and a broader user-base,

  ➢ for TIs of regional focus: **replication at regional level is key** to ensure accessibility and gaps should be avoided to bridge the innovation divide.

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Towards an EU Strategy for TIs (3/4)

- A **standardised framework to harmonise the conditions for access to TIs** could be put in place on a voluntary basis (incl. IPR, Data management, etc.).

- The creation of an **EU quality label for TIs** could also be explored to enhance their visibility.

- Creating **thematic networks of TIs with a value-chain approach at EU level** would enable to:

  ➢ better integrate and structure the European landscape for TIs

  ➢ support **pan-European access** to TIs.

  ➢ foster **knowledge transfer and capacity building** across regions,

  ➢ spread excellence and expertise in order to overcome the European innovation divide.

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Thanks

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Any questions?

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