How do Federated Research Data Infrastructures (FRDIs) work? Knowledge Exchange looks into it

This poster presents overview of the evolving FRDIs landscape in Europe. It draws from a study commissioned by Knowledge Exchange which interviewed experts from a range of disciplines, from FRDIs in the six KE member countries.

The report from the study is available at www.knowledge-exchange.info/event/federated-RD-infrastructure

What drives FRDIs?

Two broad sets of factors drive the emergence and development of federated infrastructures: top-down push factors, and bottom-up demand from users.

Top-down
Push factors reflect broad social and political imperatives, such as big societal concerns; requirements of national public policy; and drivers from research players: funders, universities, infrastrucre providers, etc.

Bottom-up
Demand factors reflect different research cultures, which vary considerably, from highly collaborative to communities who may find it more difficult to embrace an e-research culture.

Crossover also between push and demand, whereby national or international players ascertain needs and expectation of research communities that they serve.

Major challenge for the development of FRDIs:
- Complexity and fragmented nature of research data environments.
- Difficulties in addressing different legal, administrative, regulatory policy and funding environments and also in ascertaining different user needs.
- Slowness of cultural change, identifying resources of finance, ensuring compatibility of standards.

FRDI practices and services

FRDIs characterised by wide range of practices and services, which vary according to nature of each initiative and evolve dynamically in the light of researchers’ needs. No single model of service provision, no universal template for all infrastructures. Some FRDIs recognise importance of a holistic approach to their service offer, articulated around the entire research data lifecycle, including curation. They provide means of allowing easy, intuitive and seamless access to distributed resources. Other factors that FRDIs address include AAI; usability/interoperability; data standards; security; ethical and legal issues; sharing and linking; openness; as well as storage and curation. Training programmes and nurturing of skills feature for some infrastructures.

Impact

Many infrastructures have processes in place to evaluate impact, either through measuring usage in a quantifiable way, or through formal review mechanisms. Achieving cost-effectiveness is also seen as an important benefit. However, quantifying measurement of success remains difficult.

Lessons for EOSC

Emergence of EOSC is welcomed, particularly since it has same rationale as national infrastructures, albeit on pan-European scale. EOSC’s future success depends on consensual formulation of well thought-out business/finance model and solid governance structure. EOSC should also ensure that it puts user needs at its centre. It might add most value if it evolves as aggregator of existing services, rather than as provider of new, centralised tools.