

Supporting modern scholarly communication with enhanced publication management systems

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Modern times... modern research

Modern research features a collaborative approach and strongly promotes immediate access, share and re-use of research results and their experimental context including scientific publications, raw and curated data, data processing workflows, etc.

Scholarly communication: what's wrong with it?

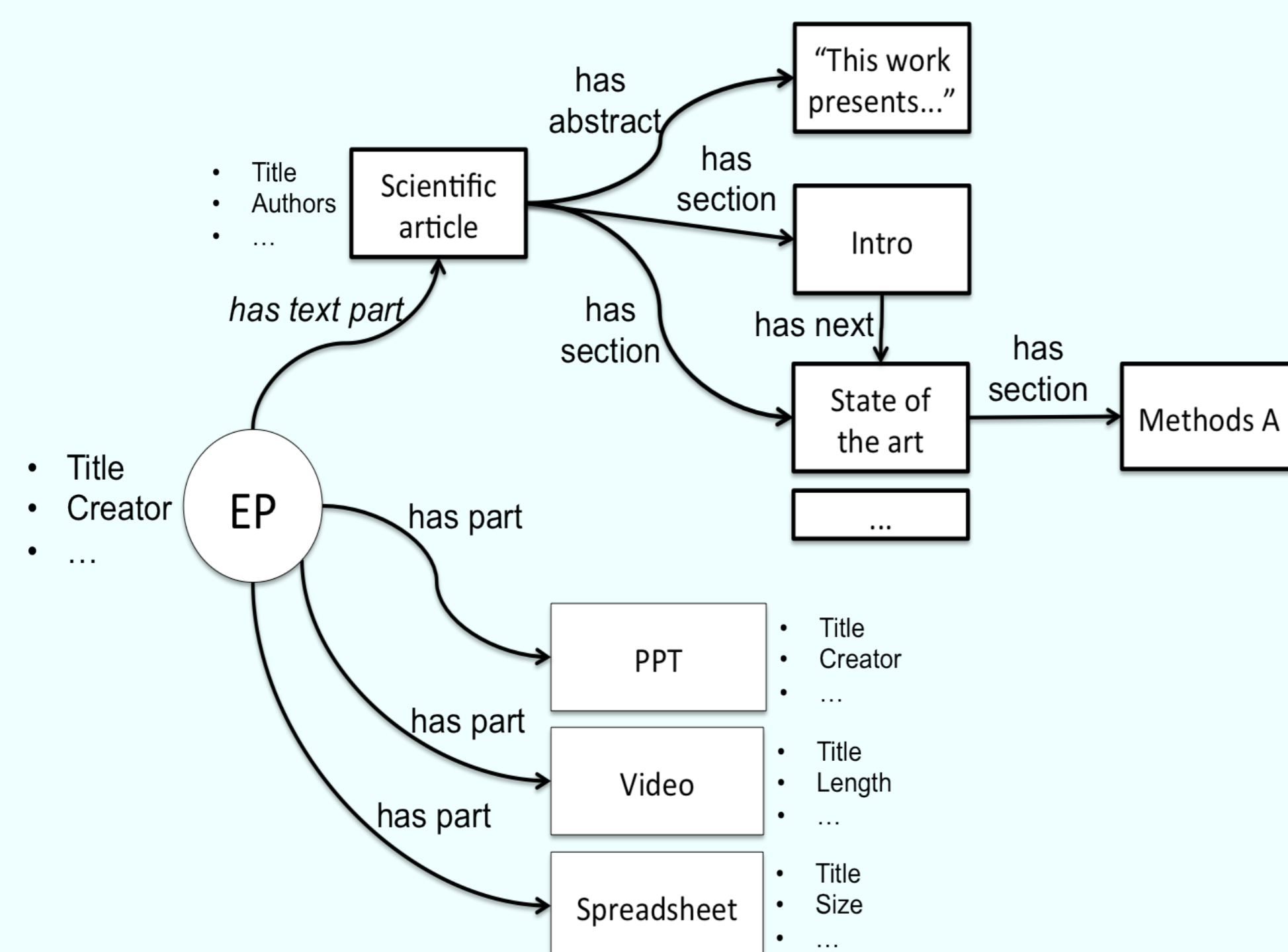
Traditionally, the information unit of scholarly communication is the scientific publication, while other research outcomes are not included, or only marginally included, in the scholarly communication chain. Either print or digital, traditional publications cannot cope with the new requirements of e-Research.

No publication is an island!

Research described in a publication is easier to validate, interpret, and re-use if the publication is contextualized and semantically linked to related research material and already existing scientific knowledge.

Information systems for enhanced publications

Enhanced publications are digital objects composed of one mandatory textual narration part (the description of the research) and a set of semantically connected sub-parts.



An example of enhanced publication composed of semantically linked parts

Systems for the management of digital publications are evolving into "enhanced publication information systems" for the purposes of:

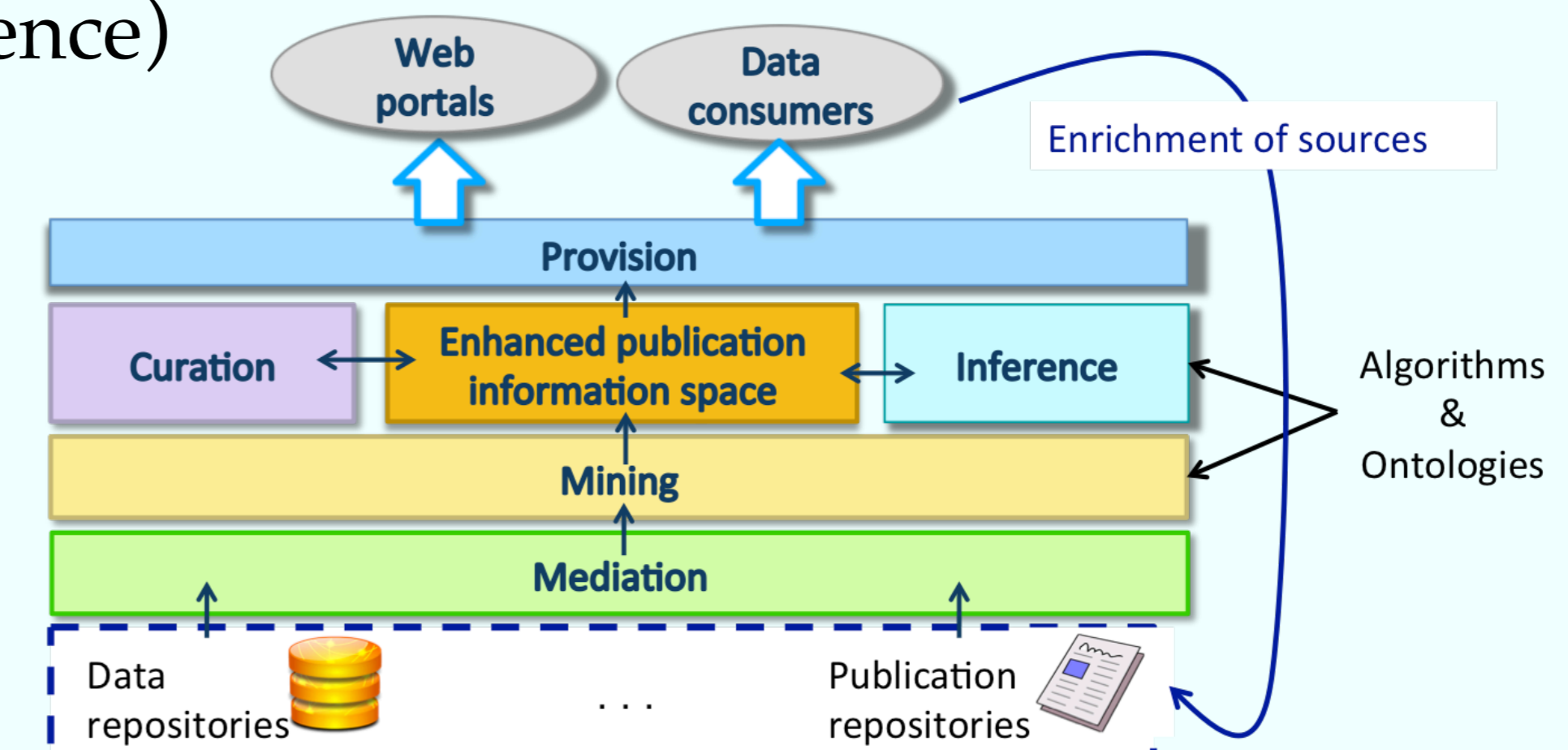
- Packaging with **supplementary material**;
- Improving **readability** and **understanding** of research;
- **Link** publications to research data (and vice versa);
- Supporting **validation**, **reproducibility**, and **replicability** of experiments.

Those systems are usually tailored to a specific use-case, and the solutions they implement are not easy to re-configure for other user communities or their evolving requirements. Instead, their realisation and maintenance entail non-negligible costs.

Enhanced publication management system: building the framework

An enhanced publication management system provides an **extensible general-purpose framework** with functionalities addressing common, high-level requirements. The system can be configured based on

- The data model of the enhanced publications to manage;
- The export protocols to activate;
- The algorithms for content processing (e.g. mining and inference)



Enhanced publication management system: high-level design

Contributions & expected benefits

- Definition of domain-independent requirements may help understand where scholarly communication is going and how it is evolving;
- Easier realisation and maintenance of reliable information systems for enhanced publications;
- Support for the transition of organisations offering traditional Digital Libraries systems to enhanced publication systems, thanks to import functionalities based on standards;
- Improved support for community requirements that evolve in time.

Literature

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