

Author: Małgorzata Paszkowska

PCG Academia

 <https://orcid.org/0000-0002-5583-4833>

 <https://www.linkedin.com/in/malgorzatapaszkowska/>

Sameness Where It Matters, Uniqueness Where It Counts with Community as a pillar – A CRIS Perspective

Extended abstract

Introduction and contribution

Open-source CRIS platforms are increasingly positioned as public digital infrastructure that must simultaneously **deliver interoperability, sustainability and room for institutional differentiation**. This presentation explores an evidence-informed account of how a shared open-source CRIS core can reconcile these sometimes-competing demands without relying on a single institutional exemplar. Drawing on aggregated, cross-institutional implementation experience from a community of DSpace-CRIS deployments supported by PCG Academia, the presentation describes architectural patterns, governance measures and community practices **that preserve a common technical foundation while enabling local customization**.

Beyond technical and procurement aspects, this contribution stresses that **community engagement is not a peripheral add-on but a core mechanism for deciding where sameness should be enforced and where uniqueness should be encouraged**. Active community activities like shared roadmaps, working groups, documentation platforms and community stewards create the social processes that translate architecture and standards into durable, reusable outcomes.

As a concrete, named reference point for the community dimension, the **presentation will draw on the activities and outputs of the DSpace Poland User Group** including targeted workshops, ‘functionality labs’ for co-design, user-group meetings and public webinars that disseminate repository best practices, open science principles and reusability approaches and will show how these activities map to reuse and sustainability outcomes discussed in the paper.

The contribution highlights measurable indicators and governance levers that practitioners and policy makers can apply immediately and it situates those findings in relation to the Barcelona

Declaration on Open Research Information. The intended audience includes RIM/CRIS practitioners, repository engineers, service providers and policy stakeholders seeking pragmatic, transferable approaches for building sustainable open CRIS infrastructures.

Background and related work

Policy statements such as the **Barcelona Declaration positions open, interoperable research information as public infrastructure and call for measures to avoid vendor lock-in and to enable reuse**. Technical standards (notably CERIF) and API-first approaches are frequently referenced as necessary conditions for interoperability. Separate literatures address:

- a) technical interoperability and data modelling
- b) open-source governance and community sustainability, and
- c) procurement and policy safeguards against lock-in.

Few contributions synthesise measurable implementation evidence with concrete community governance and procurement practices. This work addresses that gap by linking architecture, measurable deployment patterns and community processes that secure institutional freedom and ecosystem sustainability and interoperability.

Methods and evidence base

The findings that will be presented use a mixed-methods synthesis combining:

- a) implementation records from a cohort of DSpace-CRIS deployments supported by the provider and community ecosystem;
- b) architecture and codebase reviews focused on extension points and modularization;
- c) conclusions from workshop outputs with institutions that implemented DSpace, community maintainers and institutional stakeholders;

From this source material we derive measurable indicators **such as the distribution of UX component customizations across sites and the proportion of customization implemented as modules versus core edits**. These indicators are compared with community practices to derive evidence-based recommendations. Indicators are compared not only with architectural patterns but also with the intensity and structure of community engagement, allowing us to examine how community activity influences technical reuse and sustainability outcomes.

Key findings

1. **Modular architecture enables low-friction divergence.** When deployments adhere to clear separation of upstream core, feature modules and local configuration/themes, sites achieve strong local differentiation while keeping core upgrades and security maintenance tractable. **The typical pattern uses concentrated customization at the presentation layer and in well-defined adapter modules, rather than widespread core modifications.**

2. **Standards and exportability are effective operational safeguards.** The adoption of a CERIF-compatible data model combined with published export formats (CERIF XML/JSON, DublinCore) and standard APIs materially reduces the risk of functional lock-in.
3. **Community mechanisms multiply reuse and reduce duplication.** Shared development roadmaps and structured community peer review processes help institutions reuse existing solutions more effectively and motivate them to contribute their improvements back to the shared codebase, rather than maintaining isolated local changes. The emergence of community stewards and visible contribution processes correlates with faster uptake of reusable UX components and lower per-site development overhead.
4. **Community activities determine the boundary of sameness vs uniqueness.** Decisions about what must remain common and what can be customized are not purely technical but are shaped through community dialogue and governance. Structured forums, working groups and design discussions provide the space to collectively agree which elements such as data models, APIs and upgrade paths require strict alignment on which layers, such as UX, workflows and presentation, can reflect institutional identity. Community-maintained patterns, shared examples and peer review of extensions, often curated and promoted through national user groups such as the DSpace Poland User Group, allow institutions to draw inspiration from one another while avoiding unnecessary divergence. In this way, community engagement becomes the mechanism through which the ecosystem continuously recalibrates the balance between standardization and innovation.
5. **Procurement and governance matter as much as code.** Contractual clauses that specify open formats, contribution obligations, licensing terms and source-code escrow along with good procurement frameworks materially strengthen institutional agency. These administrative measures work together with modular architecture to create a socio-technical shield against vendor lock-in.
6. **Empirical patterns across deployments provide actionable signals.** Aggregated metrics show that the majority of site-specific changes occur in UX components and integration adapters, with a minority of projects requiring core edits. Reuse rates for publicly shared modules grow when the community maintains a discoverable registry and clear submission/review processes. These empirical signals enable grounded trade-off decisions: where to invest in shared modules vs bespoke work. Institutions that actively participate in community exchanges demonstrate higher reuse rates and lower duplication of effort, confirming that technical sustainability is strongly correlated with structured community involvement.

Practical recommendations

Based on these findings, we offer a compact, actionable checklist for institutions, funders and providers seeking to deploy or scale open CRIS infrastructures:

- **Architectural discipline:** enforce strict separation of upstream core and local extensions; adopt theme- and module-based customization; prefer configuration over code changes where possible.
- **Standards-first governance:** adopt CERIF-compatible models for canonical data interchange; publish API contracts and include conformance testing in acceptance criteria.
- **Community investment and structured activity:** treat community engagement as a strategic investment rather than voluntary add-on work. Allocate time and resources for participation in working groups, shared roadmap development, documentation platforms and peer review processes. Sponsor and help organise targeted activities such as user-group workshops, functionality labs, regular meetings and public webinars (examples provided from the DSpace Poland User Group) and designate community stewards responsible for curating reusable modules and facilitating cross-institutional dialogue. Recognize that these activities directly influence the ecosystem's ability to determine where sameness is necessary and where uniqueness adds value.
- **Procurement safeguards:** include contractual rights to data export in open formats, clear contribution expectations, and IP/licensing terms that enable reuse and provider change and system allows handover process to the new vendor or institution after contract termination
- **Measure and publish:** track indicators such as proportion of customization implemented as modules, reuse rates of community components, and frequency of upstream contributions; use these metrics to inform governance and procurement cycles.

Relevance, novelty and alignment with euroCRIS priorities

This proposed presentation ensures direct alignment with the euroCRIS values that address sustainability models, community collaboration, interoperability and open infrastructures. **Its novelty lies in synthesising measurable implementation indicators with governance and procurement related recommendations - moving beyond discussion of best practices to provide empirically supported operational guidance. By explicitly demonstrating how structured community activity operationalises the balance between sameness and uniqueness, the presentation adds a socio-technical dimension often missing in purely architectural discussions.** By focusing on cross-institutional patterns rather than a single institutional case, the work offers broadly transferable lessons relevant to diverse national and institutional contexts.

Conclusions

Reconciling shared infrastructure and local differentiation in CRIS deployments is a practical, solvable socio-technical challenge. Modular architecture, CERIF-aligned exportability, community governance and strong procurement safeguards together enable institutions to innovate locally without sacrificing interoperability or becoming vendor-locked. Critically, sustainable open CRIS ecosystems depend as much on people, leadership and community processes as they do on code. Long-term sustainability therefore requires continuous

investment in community activities including user-group workshops, functionality labs, meetings and webinars, that enable shared learning, coordinated evolution and collective decision-making about where uniformity strengthens the ecosystem and where diversity drives innovation. Examples from national user groups such as the DSpace Poland User Group illustrate how these investments translate into measurable reuse, lower duplication and stronger community stewardship.