**Repository Redux: The Fedora Futures Project**

Proposal for a General Track Presentation at Open Repositories 2013

Fedora has been an unqualified success in the repository arena. More than twelve years since its inception, the project has seen three major releases, has hundreds of adopters worldwide, was part of the genesis of the annual Open Repositories conference, and is stewarded by an independent, non-profit organization chartered in part to maintain its vitality. Its architecture has proven itself to be both flexible and extensible, and it’s an integral component in countless systems where object durability is a key objective. An extensive network of committed institutions and individuals has invested in the project, and remains committed to its enduring success.

But despite the project’s demonstrated value and track record, numerous challenges lie ahead of the Fedora community. New demands to support research data management, the need for horizontal scalability and the pull of web-based architectures are stretching the capacity of the system. And while the level of documentation and testing has increased admirably in the 3.x line of releases, deploying and administering the system can remain a challenge, especially for institutions without deep technical resources. The code base is aging, and the pool of active developers is approaching the point of being uncomfortably small.

Fedora’s several front ends, in the form of eSciDoc, Hydra and Islandora, have brought both energy and adopters to the Fedora community, yet each project was individually wrestling with making their common back end keep pace with the rapid changes and demands of their user bases. Systems reflecting emerging Web architectures (in the form of linked data, service oriented architectures and NoSQL data stores, e.g.) show promise for addressing some of the same challenges that Fedora tackles, and present competing approaches to Fedora-based architectures.  And while the level of energy and investment in Fedora remains quite high as a successful open source project, it appeared on the downslope.

Over the past eighteen months, several members of the Fedora community began to raise questions about the direction and future of the project. While Fedora has considerable strengths, it seemed that much of the project’s momentum and future value was at risk unless a new course of action was plotted. In discussions that coalesced at Open Repositories 2012 (OR12), the essential question emerged: *how best to preserve the Fedora’s community and architecture, while refreshing the code base to meet the emerging challenges of today’s repository landscape?*

Out of mutual concern for the future of the project, at OR12 a grassroots coalition of a half-dozen Fedora institutions and DuraSpace, committed to an in-depth comparison of their roadmaps for Fedora, and given sufficient alignment, investment to kickstart a three year effort to write Fedora’s next version.

Through two meetings and regular teleconferencing in Fall of 2012, this group formulated a common vision for Fedora 4 that revolves around three principal objectives:

1. to preserve the strengths of the current Fedora architecture and community
2. to address the needs for robust and full-featured repository services (that are now mature and well-understood, compared to six or twelve years ago)
3. to provide a successful platform for our common use for the next 5-10 years

Increasing the utility and usability of Fedora is an explicit goal; the next Fedora work for all sizes of institutions (from large to small), for both traditional needs around institutional repositories (et al.), as well as emerging needs around research data management. The project will also emphasize retaining Fedora’s preservation-friendly feature set, recognizing that durability will continue to be a paramount concern for the project’s stakeholders in the next decade.

Technically, the project will address several current pain points. These include improving scalability and performance; adding in more flexible storage options; enhancing audit trail and event capture; unpacking the “core” repository functionality into a much more confined core, with integration to modules and other systems provided by robust API’s.

Organizationally, the project will provide a forward migration path for current Fedora institutions. Development will be conducted in a lean fashion, steered by a designated product manager, with biweekly releases. Developers will include both current Fedora committers and a greatly expanded pool of contributors, drawing from a much wider set of contributing institutions. Ongoing integration and smoke testing from the wider Fedora community (and particularly institutions with their own front-ends) will help ensure a relevant and responsive development effort, aligned and in pace with the community’s needs.

In December of 2012, the project stakeholders officially launched the Fedora Futures project, in conjunction with an announcement at the December CNI Membership Meeting in Washington D.C.  The group includes representatives from projects like Hydra, Islandora, APTrust, and eSciDoc, plus DuraSpace and a range of institutions. Throughout the first half of 2013, this group of committed project stakeholders has been conducting aggressive outreach to other members of the Fedora community; while the effort has started small, Fedora’s greatest strength is arguably that it serves as a focal point for common development and support. For the project to achieve its objective and Fedora to continue delivering its value for the next decade, the entire community must engage in the effort at a level that has not been equaled since the early days of the project. Community engagement and governance were the focal points of a DuraSpace Summit held in March 2013, with an eye to promoting both the collective stake in Fedora as well as its resourcing and governance. In a heartening sign of early progress, the initiative has already brought major new adopters to the Fedora community, based on interest in Fedora 4’s architecture and functional goals.

At the end of the day, Fedora 4 represents an unrivaled opportunity for the research and repository community. While our collective needs are greater and more acute than ever, so too is our understanding of the needs and architecture for a repository system, and the value of a common platform. This project gives the chance to capitalize on the last ten years of development in this space, and to build the platform for research and knowledge management for the next ten.

This session will give an overview of the Project’s genesis, progress to date and plans for the next 2 years. This will include a review of the issues and challenges inherent in developing a sustainable community-based approach to an open source software project, a high-level review of the Pilot framework and technical components. Fedora can serve as a model for many open source efforts in libraries, and the Fedora Futures Project is an excellent case study in the evolution of an open source product and community. Speakers for the session will include members of the Fedora Futures Steering Committee and the Fedora community who have contributed as Sponsors of the Project.