Open Source Sustainability
A DuraSpace Update

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Topics

1. Introduction
2. Sustaining the open source project
3. Sustaining the open source organization
4. Conclusions
5. Questions/Discussion
The Rise of Open Source

Gartner Survey Reveals More than Half of Respondents Have Adopted Open-Source Software Solutions as Part of IT Strategy
- February 8, 2011

- http://www.gartner.com/it/page.jsp?id=1541414
“To be sustainable a project must meet its own costs.”

-OSS Watch, http://www.oss-watch.ac.uk/resources/sustainableopensource.xml

“However, there is more to sustainability than cost.”

-Markow’s Corollary
Sustainable projects vs. Sustainable foundations
A look at some open source project models...
Open Source Project Models

1. Traditional Community-Driven
   • Meritocracy
   • Transparency
   • Open to all
   • Volunteer
   • User/corporate sponsorships
   • Key risk: Deliverables and schedules not iron-clad
Open Source Project Models

2. “Community Source”

- e.g., Kuali Model
- Decision makers invest in a seat at the table
- Managed resources
- Hierarchical, directed development structure with more predictable outcomes.
- Key Risk: Diversity might be limited
Open Source Project Models

3. “Open Core”

- For-profit vendor owns the intellectual property
- Core open source application is often accompanied by proprietary version, which comes with licensing or support fee
- e.g., “Community” vs. “Enterprise” versions
- Requires dual licensing
- Key risk: Could be insular; self-interest outweighs community
The DuraSpace Open Source Project Model - A Hybrid

- Not-for-profit
- Combination of traditional meritocracy and occasional “managed projects”
- Community-driven
- Transparent
- Strong technology input from the DuraSpace organization
- Many umbrella services offered by DuraSpace
What do open source projects need in order to thrive?
DuraSpace Incubator Criteria

- Active, diverse, growing developer community
- Representative governance
- Equitable decision-making, conflict resolution
- Release plans developed and executed in public
- Clear roadmap
DuraSpace Incubator Criteria

- Project wiki is current, contains documentation
- Project website is current
- All non-sensitive information is publicly accessible
Other Factors

- Market forces
- Currency of the technology
- Adoption cycles
- Trust
- Openness of developer community
- Quality
- Responsiveness
How does DuraSpace support its projects?
DuraSpace Umbrella Services
for Open Source Projects

- Legal home
- Guidance on licensing
- Governance model
- Developer resources
- Mentoring
DuraSpace Umbrella Services -2

- Technology expertise
- International exposure
- Exposure to potential contributors
- Recognition and Reputation
- Marketing and Communications
DuraSpace Umbrella Services -3

- Webinars
- Education
- Peer support
- Inclusion in conferences
- Community programs
DuraSpace Umbrella Services -4

- Service Providers
- Administrative support
- Identify grants
- Advocacy
DuraSpace and project sustainability - an update
At least +250 new instances each year
Our community has great depth and breadth
Dspace – New Features

- Dspace 1.8
- Reordering of bitstreams/files
- Virus-checking on submission
- SWORD v.2 compatibility
- Configurable reviewer workflow
- Curator’s Toolkit (suite of services)
- Improved configuration management
- Integration with DuraCloud
Dspace 2012 Roadmap

- Simplify development, make it easier for novices to build tools
- Simplify underlying codebase
- More RESTful interfaces
- Incorporate Dryad Project features
Fedora – New Features

- Fedora 3.5: Improvements to configuration, deployment
- Adopted Spring framework for greater flexibility, ease of integration
- FeSL improved to allow for alternative policy storage engines, easier installation
- CloudSync supports synchronization with DuraCloud
Fedora 2012 Roadmap

• Improve performance and stability for existing users in upcoming Fedora 3.6 (targeted for spring)

• Work on Fedora 4.0
  – Support for large, horizontally scalable deployments
  – Significant internal changes
  – Support across multiple servers for use in grid or cloud deployments
Community Participation is Key

- Developer contributions
- Documentation, training materials, advocacy, present at conferences, etc.
- Leadership, advocacy
- Institutional Sponsorship
Sustainability of Open Source Parent Organizations
Four Case Studies in US Higher Education

- Jasig
- Sakai
- Kuali
- DuraSpace
Many Commonalities

- Open source
- Initial seed funding for project/org
- A non-profit organization--501(c)3—shepherds the projects
- The organization provides umbrella services to the projects
- Board of directors
- Supported by the community
- Commercial partners
Many Differences...
Functional Area

- **Jasig** – Variety of projects (e.g., uPortal, CAS, Bedwork)
- **Sakai** – Teaching, learning, research; LMS/CLE
- **Kuali** – Administrative software
- **DuraSpace** – Preservation and access to scholarly, scientific, cultural record
Community

- **Jasig** – Developer centric, more traditional
- **Kuali** – Functional/technical councils, “pay to play”, proffered resources
- **Sakai** – blend of volunteerism and managed projects
- **DuraSpace** – community volunteers, managed work (e.g., DuraCloud, grant work)
Open Source Process

- **Jasig** – traditional meritocracy and volunteerism
- **Kuali** – directed development; predominantly US participation; some off-shore development
- **Sakai** – blend of volunteerism and managed projects
- **DuraSpace** – blend of volunteerism and managed projects
Staffing

- **Jasig** – 1 F/T executive director; no paid project staff
- **Kuali** – 3.5 foundation resources; funded project resources
- **Sakai** – 3 (?) foundation/project resources;
- **DuraSpace** – 10 organizational resources (central, services, projects), part-time contractors
Sustainability Strategy

- **Jasig** – Membership model
- **Kuali** – Projects funded by institutions, also contribute to foundation
- **Sakai** – Membership model
- **DuraSpace** – Sponsorships, grants, services

* Planning to merge this year
DuraSpace Sustainability Strategy - A Closer Look
DuraSpace Resource Allocation

- Strategic and operational oversight
- Communications and marketing
- Technology leadership
- Community programs
- Building/supporting services
  - DuraCloud
  - DuraCloud for Research
  - Professional development
Evolving Revenue Streams

2009 revenue source

- **Moore Grant**: 77%
- **Other grants**: 23%
- **Other sources**: 0%

Legend:
- Moore Grant
- Other grants
- Sponsorship
- Services
2010 revenue sources

- 52% Services
- 31% Other grants
- 14% Sponsorship
- 3% Other grants
- 3% Moore Grant
2011 revenue sources

- **46%**: Services
- **29%**: Moore Grant
- **20%**: Sponsorship
- **5%**: Other grants

April 3, 2012
DuraSpace Sustainability Strategy

Increase our value proposition by

- Offering *services*
- Adding *software projects* to our portfolio
- Responding to *grant* proposals
- **Empowering** our community
- Building *partnerships* that strengthen our community
- Expand our *sponsorship* programs
Offering Services...

- DuraCloud – launched in 2011; archiving and preservation
  - Suite of preservation and access services
  - Soon: Trial of significantly reduced pricing, fixed cost per terabyte, annual subscription
Offering Services -2

- DuraCloud for Research (DfR)
  - Currently in development – grant from Alfred P. Sloan Foundation
  - Serves researchers, curators/archivists
  - Provides safe backup in the cloud, metadata collection, data management and visualization, hand-off to archivists
Offering Services -3

- Professional Development
  - “Hot Topics” Curated Webinar Series
  - DSpace and Fedora KnowledgeBase
  - Interactive conference call series (planning by Gold sponsors)
  - May offer some in-depth courses
Adding Software Projects...

• The DuraSpace Incubator
  – Help new/existing initiatives become self-sustaining projects
  – Mentor and provide umbrella services to projects consistent with our mission.
  – “Graduating” projects become part of the DuraSpace family
Responding to Grants...

- ...that further our mission
- ...that enhance our projects
- Risk: Distraction
Empowering our Community...

- Community outreach and marketing activities
- Technology training (KnowledgeBase)
- Dspace Community Advisor Team (DCAT)
- Dspace Ambassador Group
- User Groups
- Hydra Steering Committee
Building Partnerships...

Examples:

- Registered Service Provider program
- Founding members of National Digital Stewardship Alliance (NDSA)
- Digital Preservation Network (DPN)
- Smithsonian Institution Office of Research Information Services
- San Diego Super Computer (SDSC)
Building Partnerships -2

- Internet Archive - Permit archive-it users to back up web collections to DuraCloud, deploy services
- Internet2 – NetPlus services
- Chronopolis – DuraCloud integration: DuraCloud users backup snapshot to Chronopolis
Expanding Sponsorships...

- Community Sponsorships – 28% growth last year
  - Will offer new incentives to institutions for sponsoring DuraSpace
- Beginning new Corporate Sponsorship program in 2012
Conclusions

- Variety of open source project models
- Project sustainability subject to many variables
- Organizational sustainability: Expenses are a factor of services/resources
- DuraSpace strategy: diversify revenue sources
- Community is key; community support is essential
Questions

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