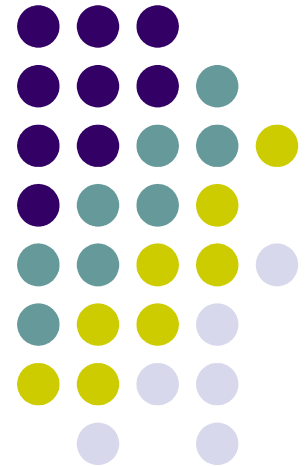
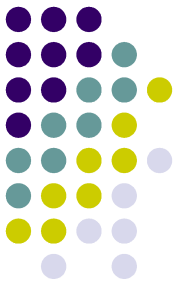


suit of Developing a Sustainable DSpace Open Source Project

OSS-Watch:
Open Source and Sustainability
Programme, 10-12 April 2006



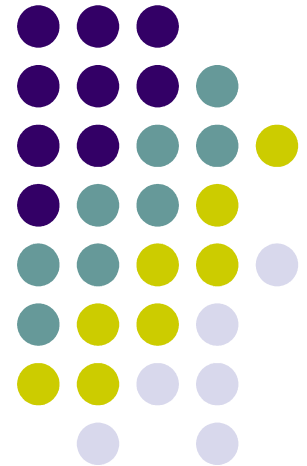
What Does It Mean to Be Sustainable?



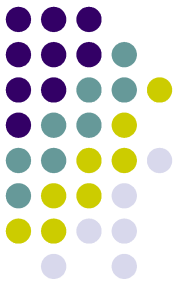
- What are we trying to sustain?
- And for how long?
- Sustainability isn't a checklist, it's an ever-changing, ever-adapting plan
 - Value to the market/user base
 - Active developer community
 - Opportunities for commercial involvement
 - Collaboration infrastructure
 - Coherent legal structure
 - Sensible governance structure

DSpace

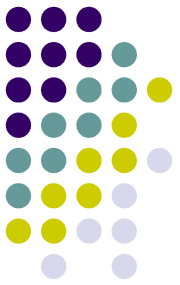
A Case Study



What is DSpace?

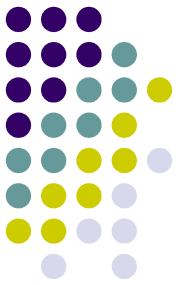


- A technology platform that...
 - Captures
 - Digital research material in any formats directly from creators
 - Describes
 - Descriptive, technical, rights metadata
 - Assigns persistent identifiers
 - Distributes
 - Delivers via Web, with necessary access control
 - Open and visible archive
 - Preserves
 - Large-scale, stable, managed long-term storage (bit preservation)
 - Active research and development in preserving access to content



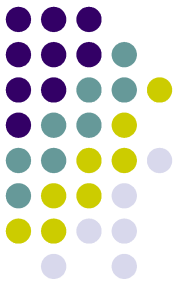
What is DSpace?

- A service...
- ...often in the form of an institutional repository:
 - Open access to scholarly research
 - Preservation archive
 - Theses repository
 - Learning object repository
 - Student works portfolio
 - Non-traditional material
 - Virtual publishing system
 - ...



What is DSpace?

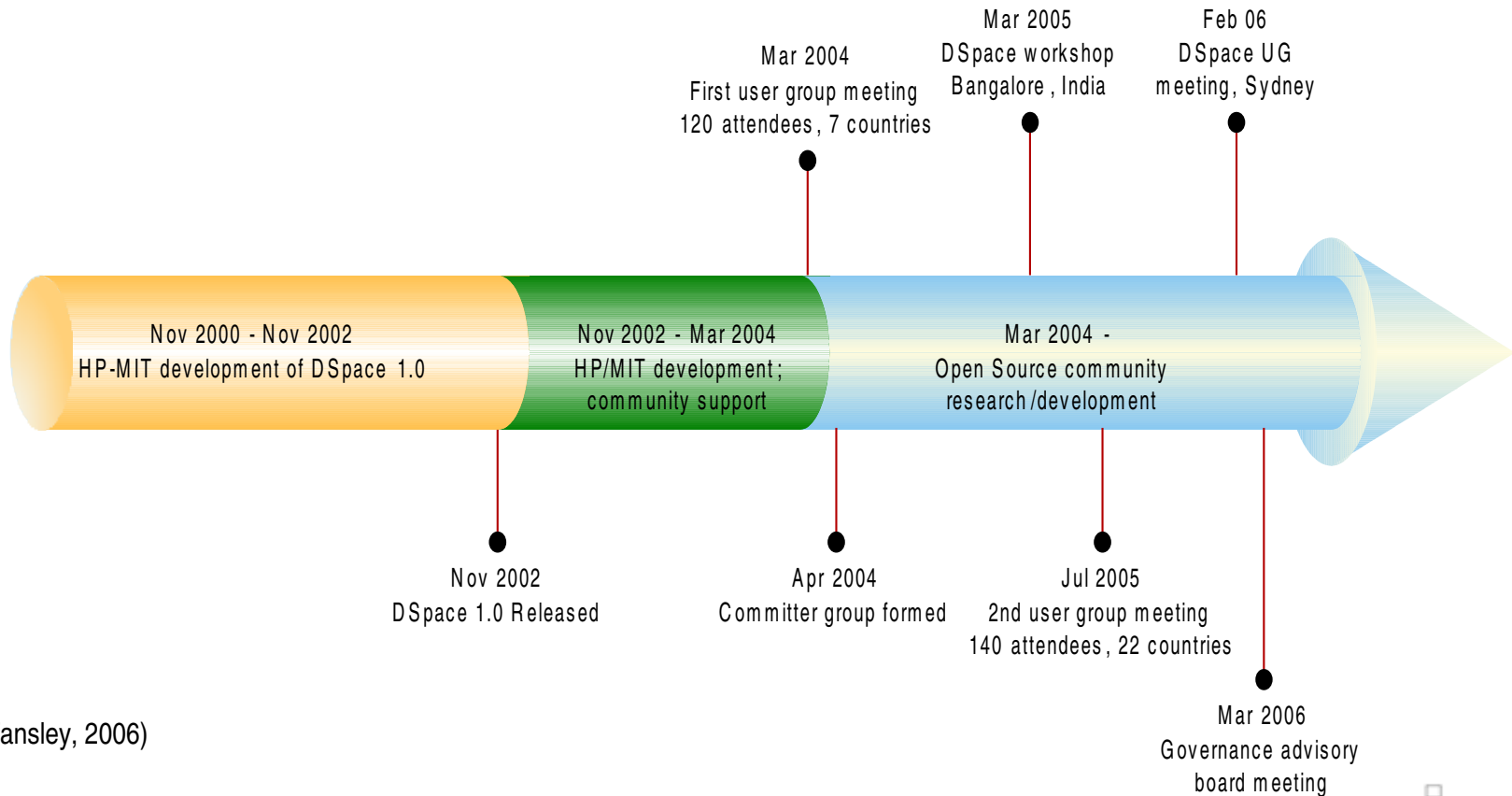
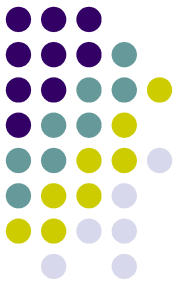
- An open source community...
 - 137 registered “live” (production) sites
 - Representing 47 countries world-wide
 - About half are US or UK
 - Rest are widely distributed
 - About 400,000 total content items
 - 60 developers contributing
 - Support from commercial service providers



Who is Using DSpace?

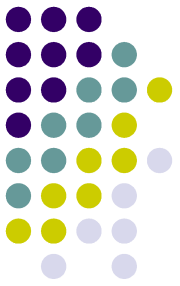
- Colleges and universities (libraries, other departments)
- Research institutions
- Government agencies
- Companies and corporations
- Service organizations, consortia
- Private collectors

DSpace Project History



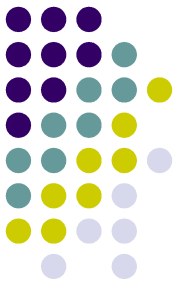
(Tansley, 2006)

DSPACE's Path Toward Open Source and Sustainability



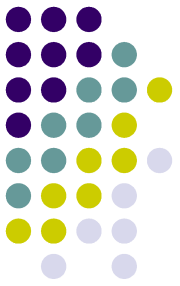
- Stage one: Release of open source software
- Stage two: Transition to a community project
- Stage three: Development of a governance structure

Stage One: Release of DSpace as Open Source Software



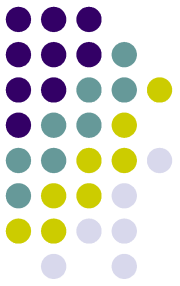
- November 2002
- DSpace 1.0
 - Production-ready software
 - Developed by HP Labs and MIT Libraries
 - Broad functionality

Stage One: Release of DSpace as Open Source Software



- Why did HP and MIT want to do this?
 - Drive DSpace development
 - open source development model
 - Share maintenance and support for the software
 - Build critical mass of content
 - support useful interoperation and research test bed
 - Leverage distributed expertise
 - e.g. in metadata and digital preservation

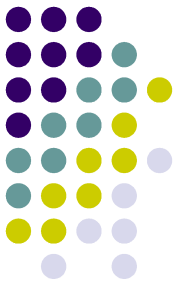
Stage two: Transition to a Community Project



- Sponsored or spinout project
 - “A sponsor of an internally developed software project releases their code to the public under an open source software license and invites an external community to join the project.”
 - E.g. Eclipse (IBM), OpenOffice (Sun) and Mozilla (Netscape)
- Community project
 - “publicly initiated by one or more individuals, independent of their employment context, to recruit developers to contribute to software that is still in its infancy”
 - E.g. Linux, Apache, Debian, GNOME

(Source: O'Mahony and West, 2004)

Stage Two: Transition to a Community Project

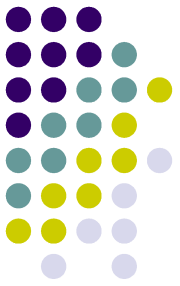


November 2002

- Phase One:
 - HP and MIT continue as primary developers and supporters of DSpace
 - Adopters focus on implementation and collection of content
 - But they also complain... “why can’t DSpace do x?” and “when are you going to add y?” (vendor syndrome)
- Phase Two:
 - Adopters go “live” with production DSpace services;
 - They begin to contribute support to new users; and
 - They contribute bug fixes and feature enhancements.
 - DSpace “committer” group is formed
 - Commercial service providers emerge

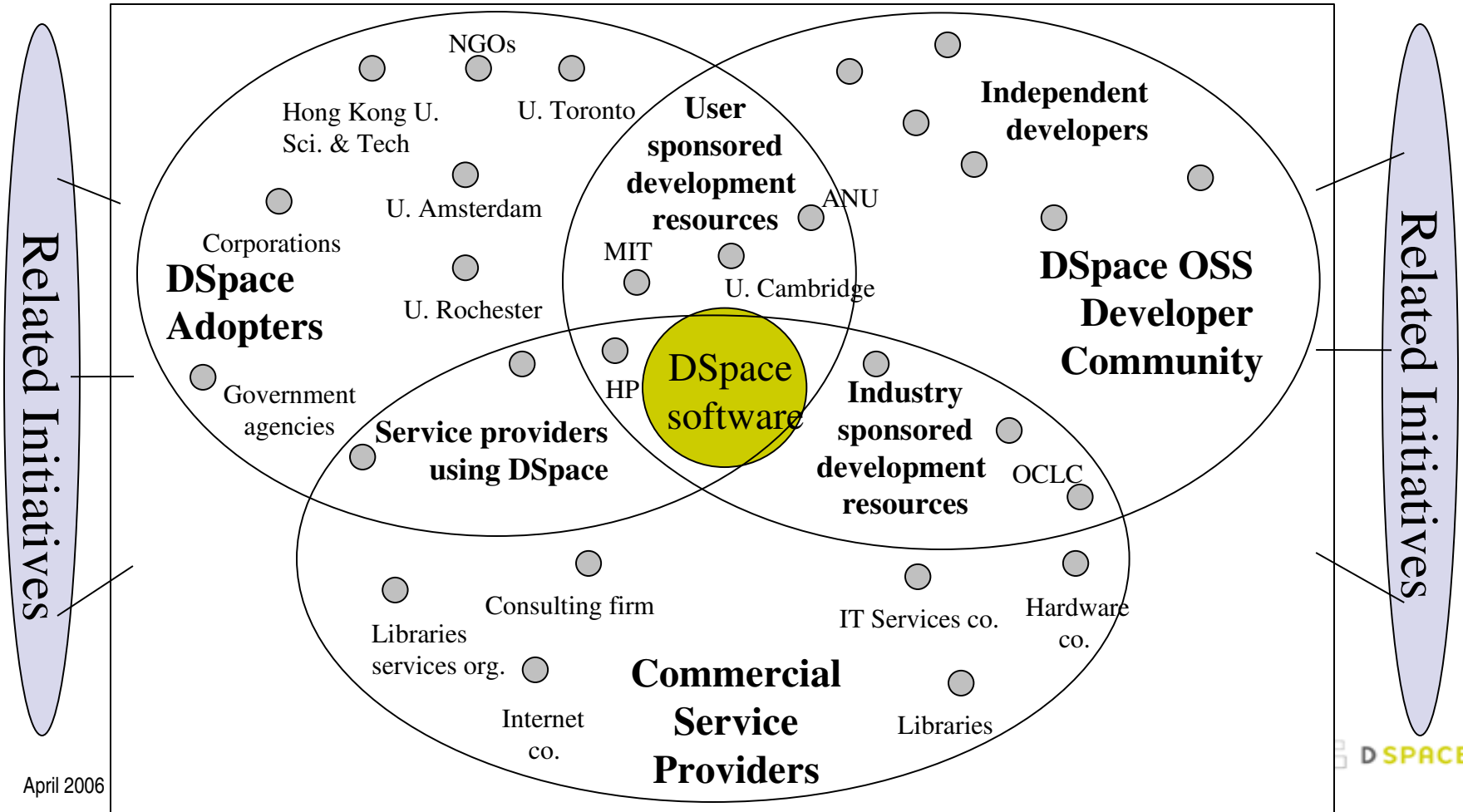
July 2005

April 2006

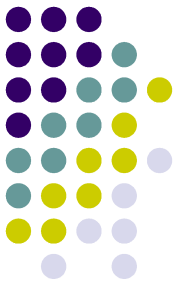


The DSpace Open Source Community

Present and future...

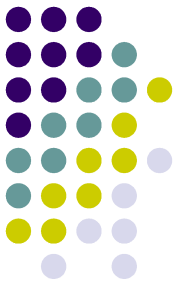


Stage Three: A governance structure



- Investment in DSpace grows
- The community expresses a need for more project structure and stability
 - Sustaining DSpace core development and support
 - Roadmap planning, QA, release management
 - Better documentation, training
 - Collaboration infrastructure
 - Outreach to other projects and initiatives
 - Marketing and community building
 - Liaison with DSpace Service Providers
 - Legal oversight (IP, liability, licensing)

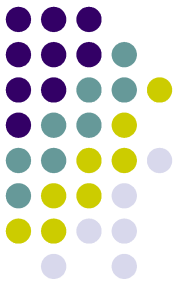
Formation of an ad hoc Governance Advisory Board



- Governance planning process agreed to at July 2005 DSpace User Group meeting
- Initial meeting held in Cambridge, MA on March 30-31, 2006

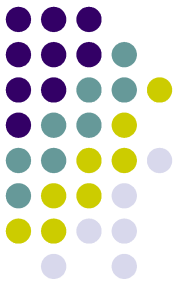
Governance Advisory Board

Members



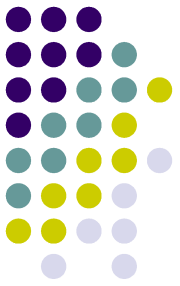
- **Chair:** Mr. Chris Rusbridge (Director, Digital Curation Centre, UK)
- **MIT representative:** Ms. Ann Wolpert (Director, MIT Libraries)
- **HP representative:** Mr. Nick Wainwright (Research Director, Digital Media System Department, HP Labs)
- **Outside experts:**
 - Dr. Clifford Lynch (Executive Director, Coalition for Networked Information)
 - Dr. Siobhan O'Mahony (Assistant Professor of Business Administration, Harvard Business School)
- **Commercial service providers:**
 - Dr. Matthew Cockerill (Publisher, Biomed Central)
 - Mr. Peter Walgemoed (Director, Carelliance BV, Netherlands)
- **DSpace Adopters:**
 - Dr. Adrian Burton (Project Leader, Australian Partnership for Sustainable Repositories)
 - Ms. Susan Gibbons (Assistant Dean for Public Services & Collection Development, University of Rochester)
 - Ms. Geneva Henry (Executive Director, Digital Library Initiative, Rice University)
 - Dr. James Hilton (Associate Provost for Academic, Information & Instructional Technology Affairs, University of Michigan)
 - Ms. Carole Moore (University Chief Librarian, University of Toronto)
 - Dr. A.R.D. Prasad (Associate Professor, Documentation and Research Training Centre, Indian Statistical Institute)

Charge

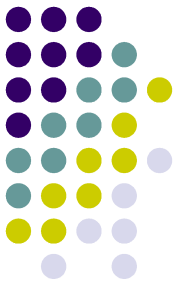


- The charge of the DSpace Governance Advisory Board is to recommend:
 - A mission for DSpace, that defines its target user base/membership and aspirations for advancement of the platform
 - A governance structure and associated staffing models and funding strategies, including...
 - A set of central services to the DSpace community, and
 - A destination or a legal owner for its intellectual property

Creating a DSpace Mission Statement



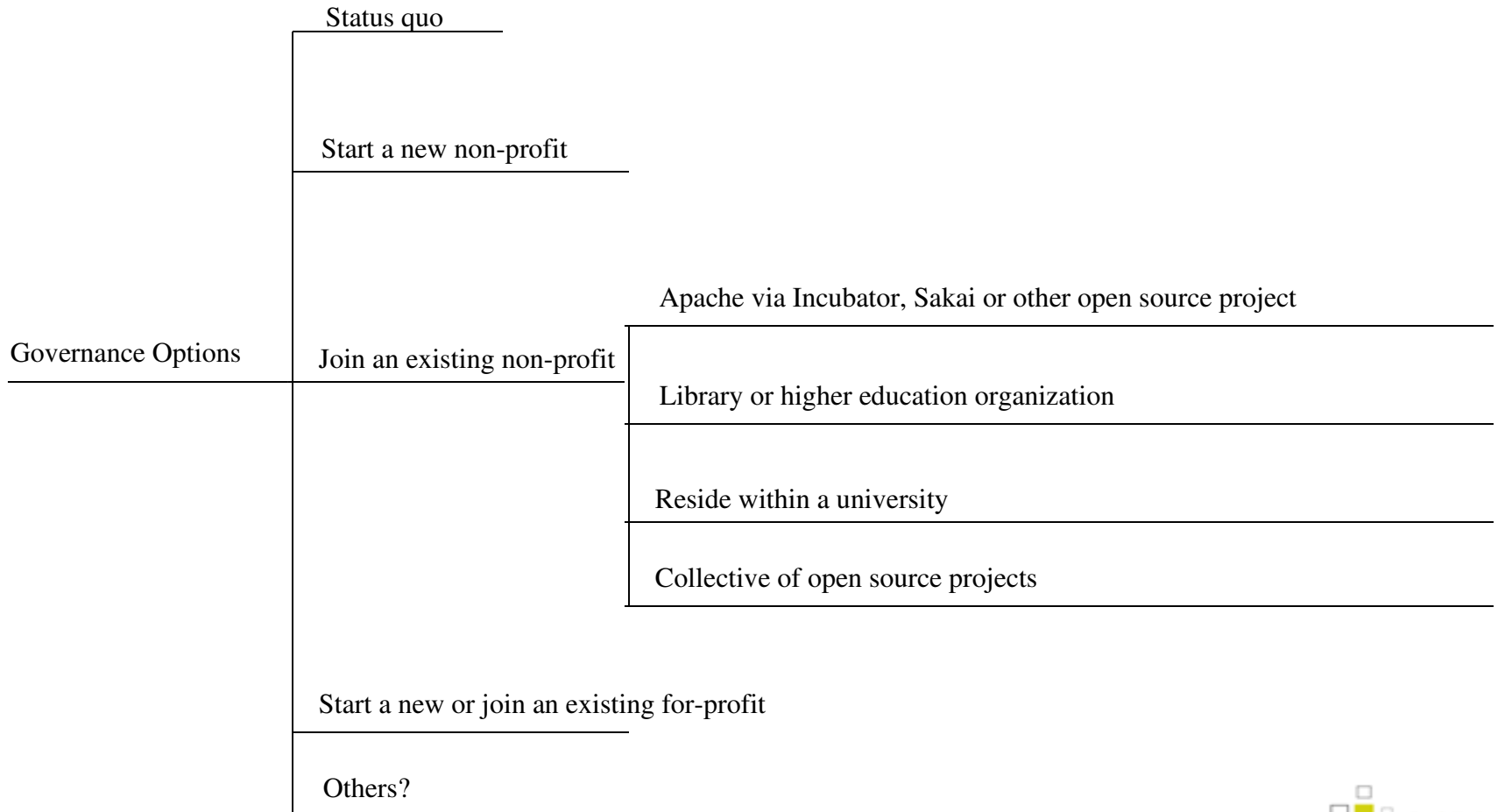
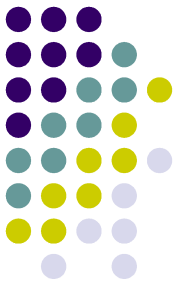
- What are the opportunities or needs that we exist to address? (the purpose of the organization)
- What are we doing to address these needs? (the business of the organization)
- What principles or beliefs guide our work? (the values of the organization)

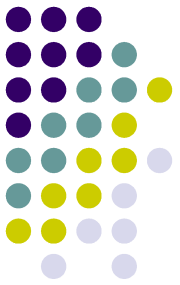


What Makes DSpace “Unique”?

- End-user application
- Features/functions decided by domain experts, not programmers
- Higher education market, library adopters
- New application space: “institutional repositories”
- Involvement of founding sponsors

Governance Options

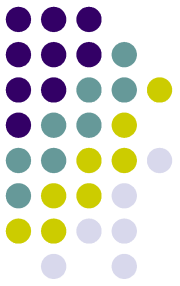




Status Quo

- Can the current situation continue to work?
- Pros:
 - MIT and HP provide legal coverage
 - MIT and HP provide resources, leadership and general support
 - Low cost and informal approach for community
- Cons:
 - No mechanism for collective representation and governance
 - Community cannot enter into agreements collectively
 - Risk: will DSpace live beyond the efforts of its founders?

Start a Non-Profit

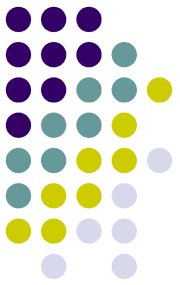


- Pros:

- Protect individuals from liability
- Protect intellectual property
- Enter into agreements collectively
- Collective leadership and project guidance
- Live beyond efforts of founders
- Coordination with commercial ventures

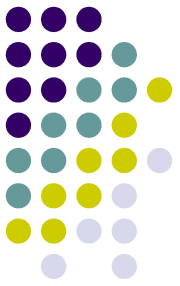
- Cons:

- Sustainability/funding
- Lose legal protection, etc. of MIT and HP
- Risks of a solo venture
- Competition for resources/funding with other open source projects
- Reiterative infrastructure with other OSS HE projects - doesn't take advantage of economies of scale



Join an Existing Non-Profit

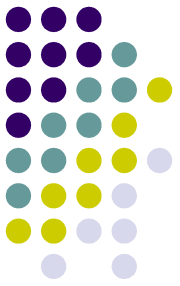
- Options:
 - Library or higher education organization
 - A collective of open source projects
 - Another open source project, like Apache
 - Another university
- Integration:
 - Stand-alone structure
 - Fully integrated



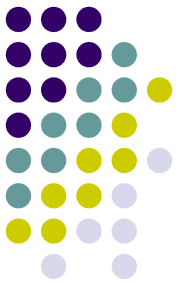
Join an Existing Non-Profit

- Pros:
 - Greater stability than solo venture
 - Less start-up time than a solo venture
 - Access to new users and resources
- Cons:
 - Possible culture or mission clashes or other misalignments
 - Requires resources for due diligence
 - May require ongoing leadership from the community

Start a For-Profit or Join an Existing One

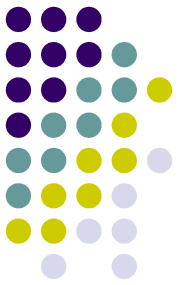


- Examples of business models:
 - Dual license model
 - Service and support
 - Installation and integration consulting
 - Repository hosting
 - Software customization and consulting
- Open issues:
 - Is the DSpace community large enough to sustain a for-profit business?
 - Does a for-profit model run contrary to the community's values?
 - Who would lead such an initiative?



Evaluation Criteria

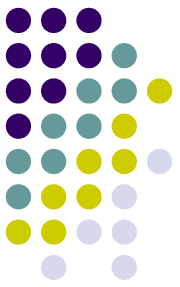
- We used the Balanced Scorecard method:
 - Value to stakeholders
 - Internal business processes
 - Innovation and development
 - Financial stability



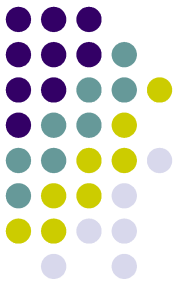
Evaluation Process

- Identified the needs of the key stakeholders
- Defined what makes DSpace and its community “unique”
- Researched existing models and projects
- Identified potential options
- Established evaluation criteria

Governance Advisory Board Meeting Outcomes



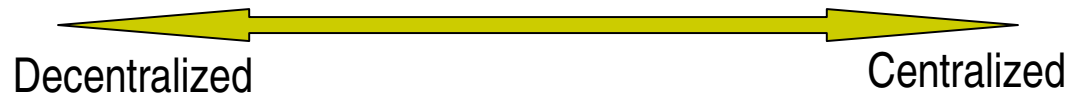
- Drafted a statement of mission
- Made a decision to form an independent foundation and initiated a planning process to accomplish that end
- Formed an interim steering committee
- Addressed the need for a technical working group and initiated a road map and white paper process to support that effort



Next Steps

Create a plan for a DSpace non-profit foundation

Leadership



Development



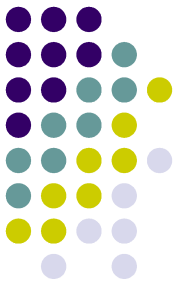
Staffing



Funding



Conclusions



- Sustainability isn't a checklist, it's an ever-changing, ever-adapting plan
 - Value to the market/user base
 - Active developer community
 - Opportunities for commercial involvement
 - Collaboration infrastructure
 - Coherent legal structure
 - Sensible governance structure