

Collaborative Open-Source Software: Panacea or Pipe Dream for Higher Education?

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ONLINE PROFESSIONAL DEVELOPMENT EVENTS

The Academy's Systems Dilemma

- » Higher Education is in *dire need* of a sustainable, affordable software model
- » Buy vs. Build model has failed
 - We've been unable to build our own for quite some time
 - » Most locally built applications are being replaced
 - Vendors don't meet all our requirements and force us to modify code or build workaround code

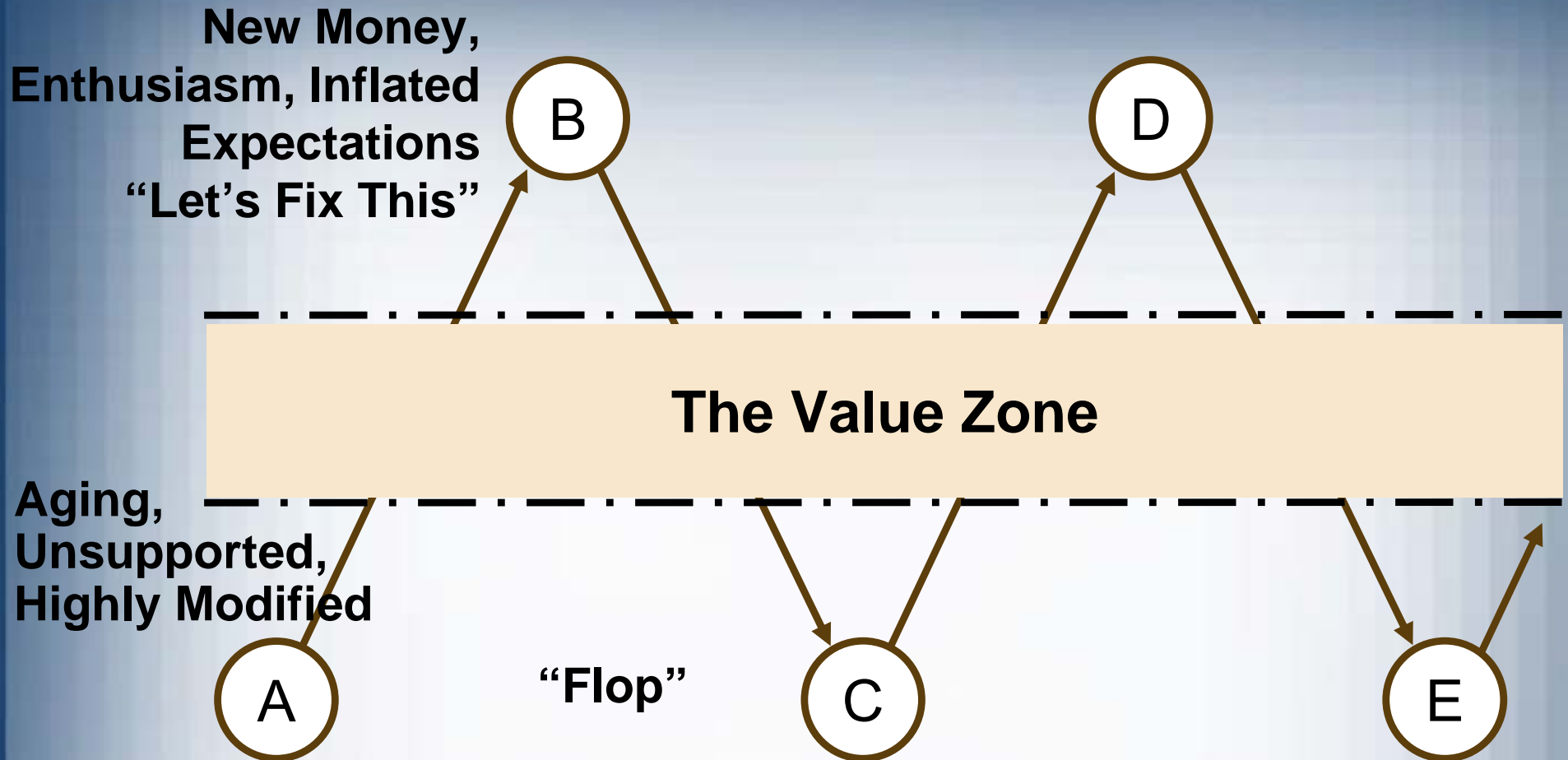
The Systems Dilemma

- » The software market is not focused on higher education goals and needs
 - Many feel the higher ed market is too small to sustain a healthy vendor environment
- » New uncertainties in the commercial vendor space
 - Emerging consolidations
 - Depressed investment climate
 - Migration away from products toward services

Our Dilemma (cont'd)

- » When we can afford to purchase 'vended' systems it is often difficult to find funds to sustain them
 - Version upgrades often resemble full implementations
- » It is very difficult to build and sustain 'vanilla' implementations of vended systems
 - The worst enemy? Ourselves and new regulations?
- » Closed source code
- » Proprietary standards
- » Very few open source companies in the academic application software market

Academia's IT Dilemma: An Painful System Life Cycle



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Caught in the Middle

New ERP Software

Higher Education

Legacy Software

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Why Traditional IS Approaches Fail Us

- » They are not collaborative: vendors build software and hand it to us on a silver platter
- » They are not open source so we have to rely on vendors for maintenance and enhancements
- » They are not open standards so we have to build numerous point-to-point interfaces
- » They are all built on different data models

Why Open Source Projects Succeed

- » Involvement of passionate, intelligent, true believer, über techies
 - To solve an interesting problem or to show it can be done
 - Willing to stay up all night writing code to fix a bug or add a feature
 - They like to involve the community
- » Often a ubiquitous problem in need of a solution
- » Traditional "bottom up" approach that often works for infrastructure and middleware

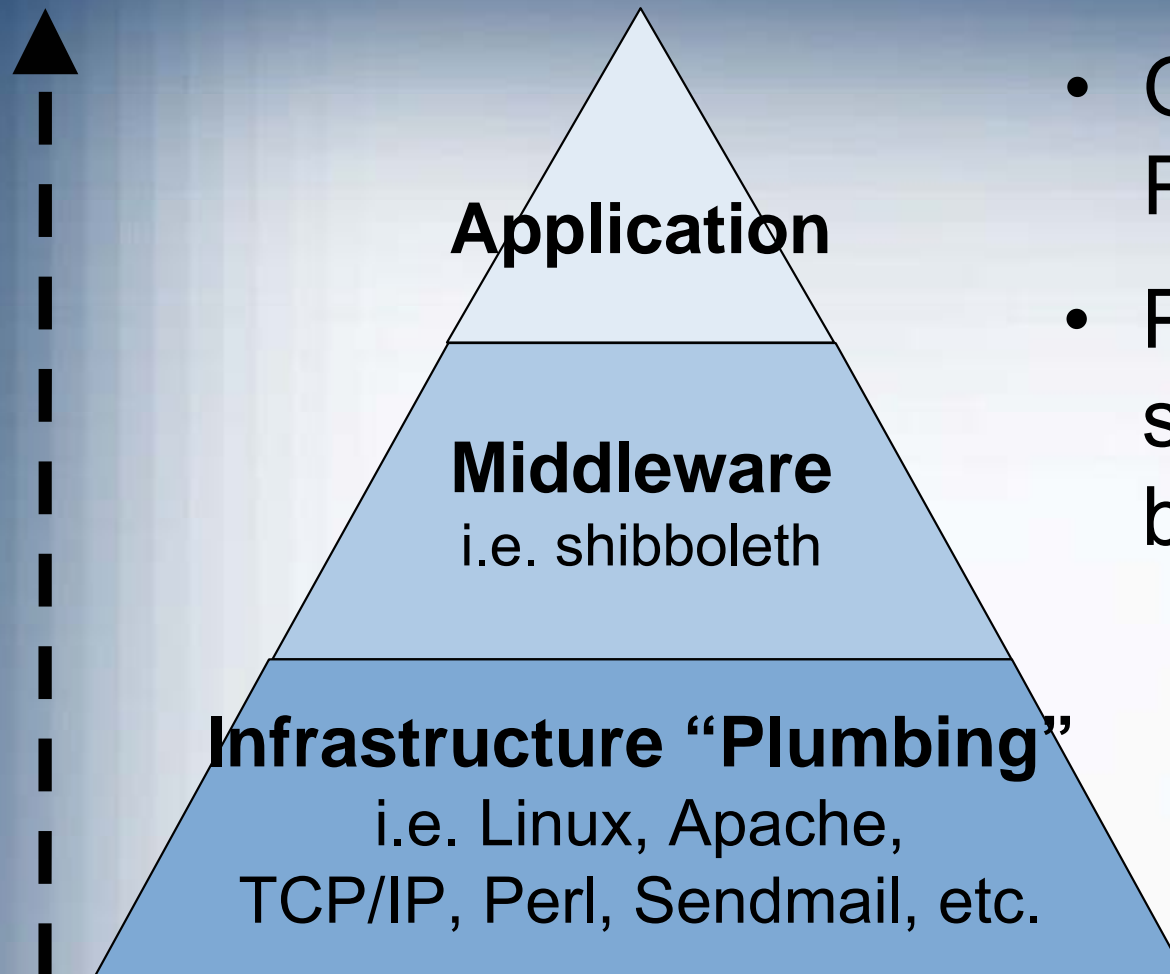
Strengths of Open Source

- » Many people looking at and contributing code leading to fewer bugs and security problems
- » May have better support options because the code is available to everyone
- » Flexible - often can do exactly what you need and want
- » More likely to conform to open standards so you can choose; and choose from an array of components

Why Open Source Projects Fail

- » Open Source in itself does not guarantee success
- » Lack of passion in the developer community
 - The problem isn't interesting an longer
- » Inadequate depth or commitment of developer community
- » No true "ownership" of the problem and solution spaces
- » Inadequate support structures for those who can't tolerate risk

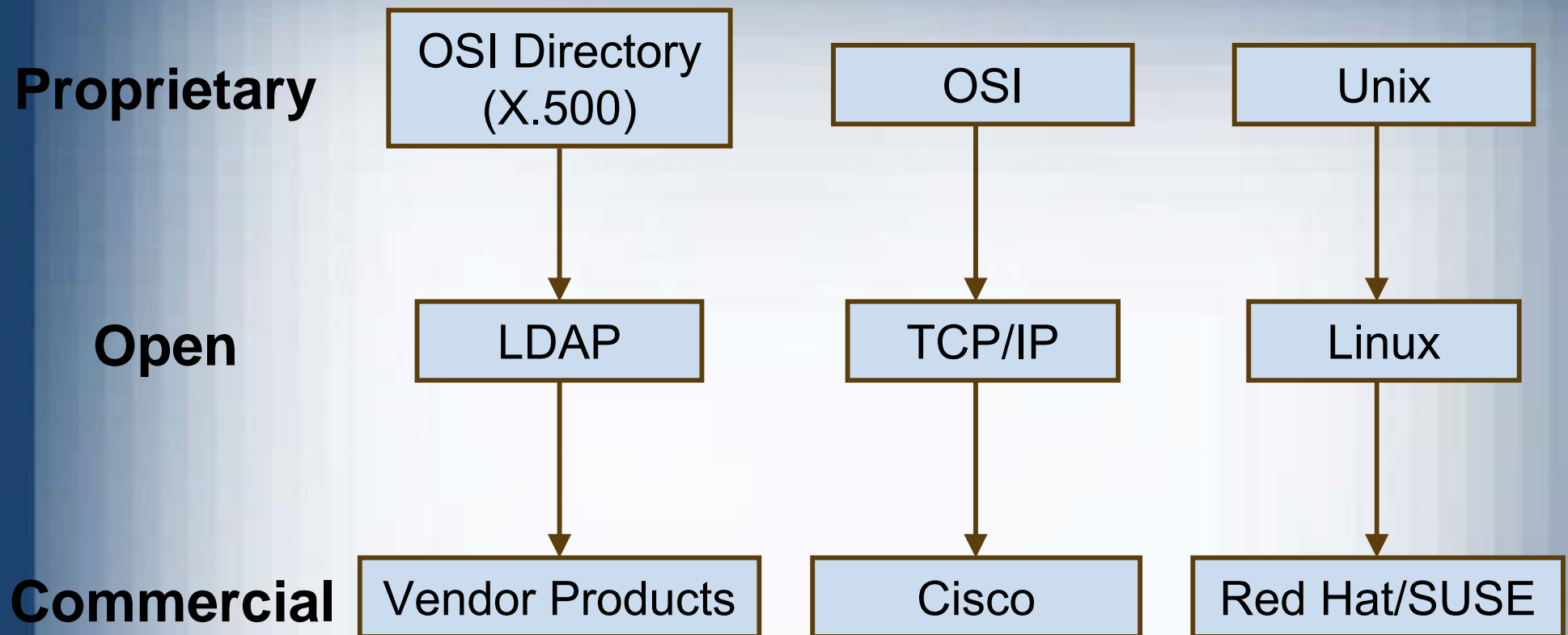
Academia's IT Dilemma: Open Source



- OS Techies build Plumbing
- Proprietary software vendors build applications

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An Instructive Historical Perspective on Open Source/Standards



Successes and Failures

» Successes

- TCP/IP
 - » gated
- Linux
- Apache
- Perl
- Sendmail
- Darwin
- uPortal

» Failures

- WLN/BLIS
 - CMS projects
 - Game Launcher
 - Vizacc mini-ERP
- ## » TBD
- Sakai
 - Chandler
 - Kualu

The Academy's Systems Dilemma

Is Collaborative Open Source the Solution?



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Collaborative OS Software

- » **kə`laeb.ə.r.ə.tiv** (adj.) : To work together for a special purpose
- » Open-Source Software: Source code is distributed in public domain or copyrighted under an OS license
- » Collaborative OS: Producer universities and (possibly) vendors work together with stakeholders on innovative software that fulfill academic priorities



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OS vs. Collaborative OS

Trait	Open Source	Collaborative OS
Collab.	International	Inter-Institutional
Policy & Direction	Lead Programmers	Lead Institutions
Financing	None (Volunteers) / Software Vendors	Foundations & Institutions
Distribution	Usually Free	Free, consortia
Standards	Open	Open / Closed
Layer	Infrastructure	Application
Focus	Software Engineering	Process Engineering

Collaborative OS: Dev. Cycle

Closed

BEA Web Portal
/ MS SharePoint

Blackboard

SAP / Oracle
/ PeopleSoft

**Collaborative
OS**

uPortal

Sakai

Kuali

**Software Vendor /
Support Provider**

TBD

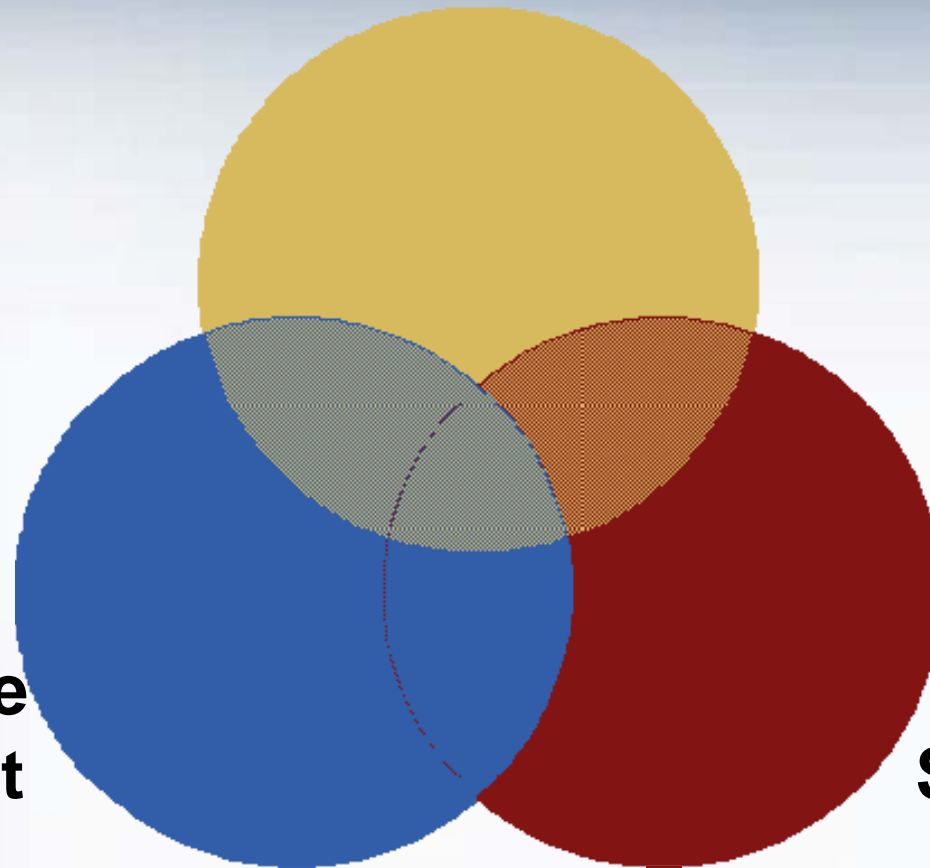
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Collaborative OS: New Paradigm

Open Source



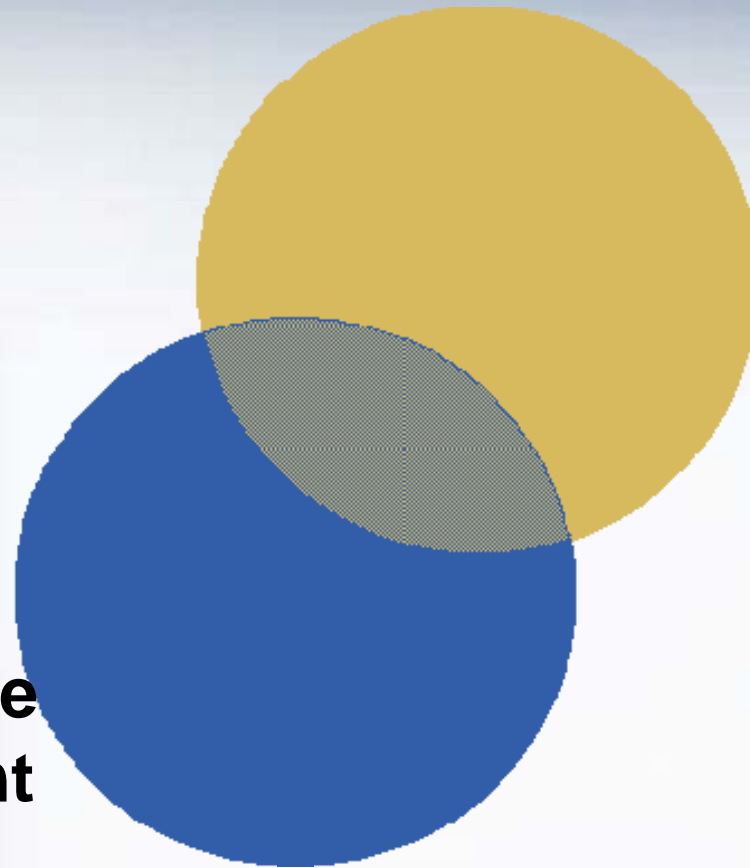
Collaborative
Development

Open
Standards

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Collaborative OS: New Paradigm

Open Source

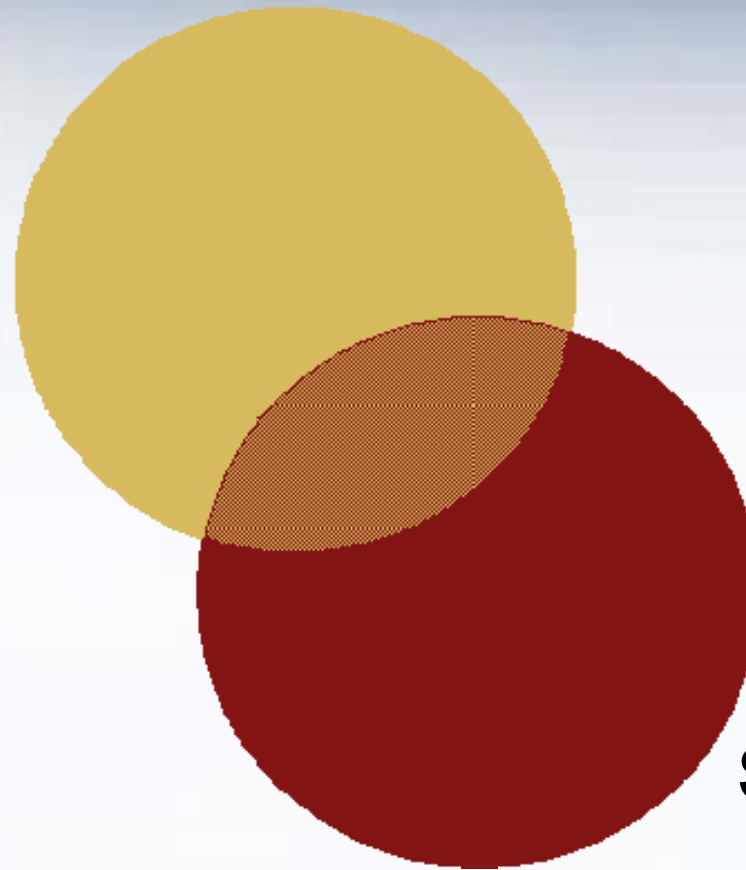


Collaborative
Development

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Collaborative OS: New Paradigm

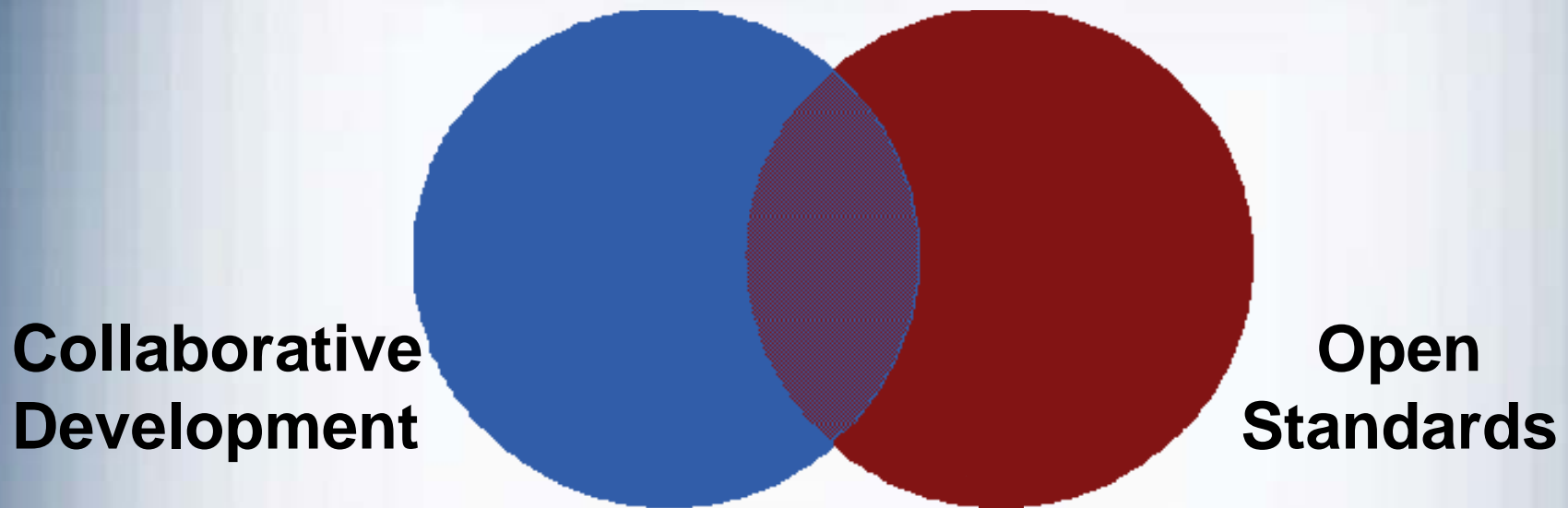
Open Source



Open
Standards

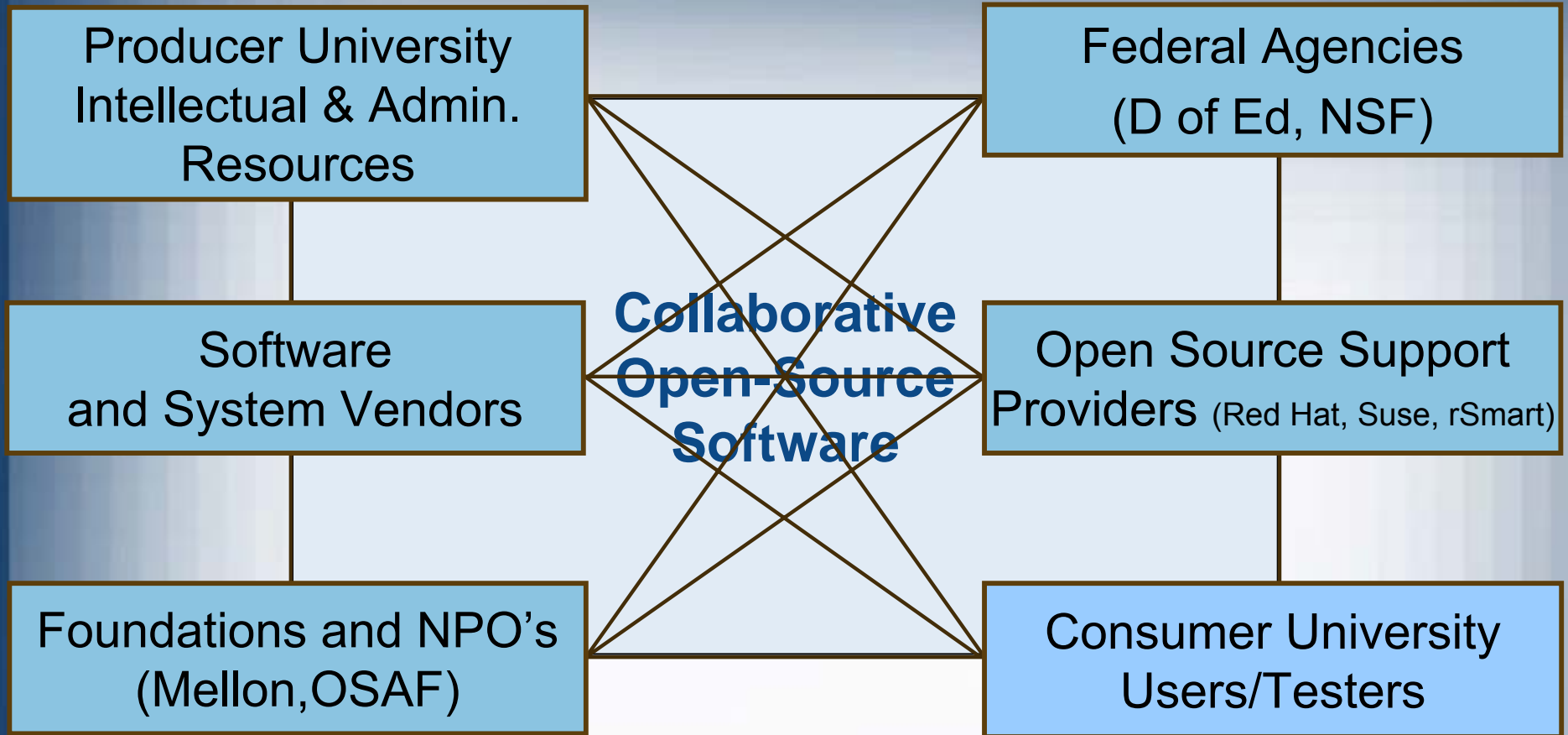
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Collaborative OS: New Paradigm



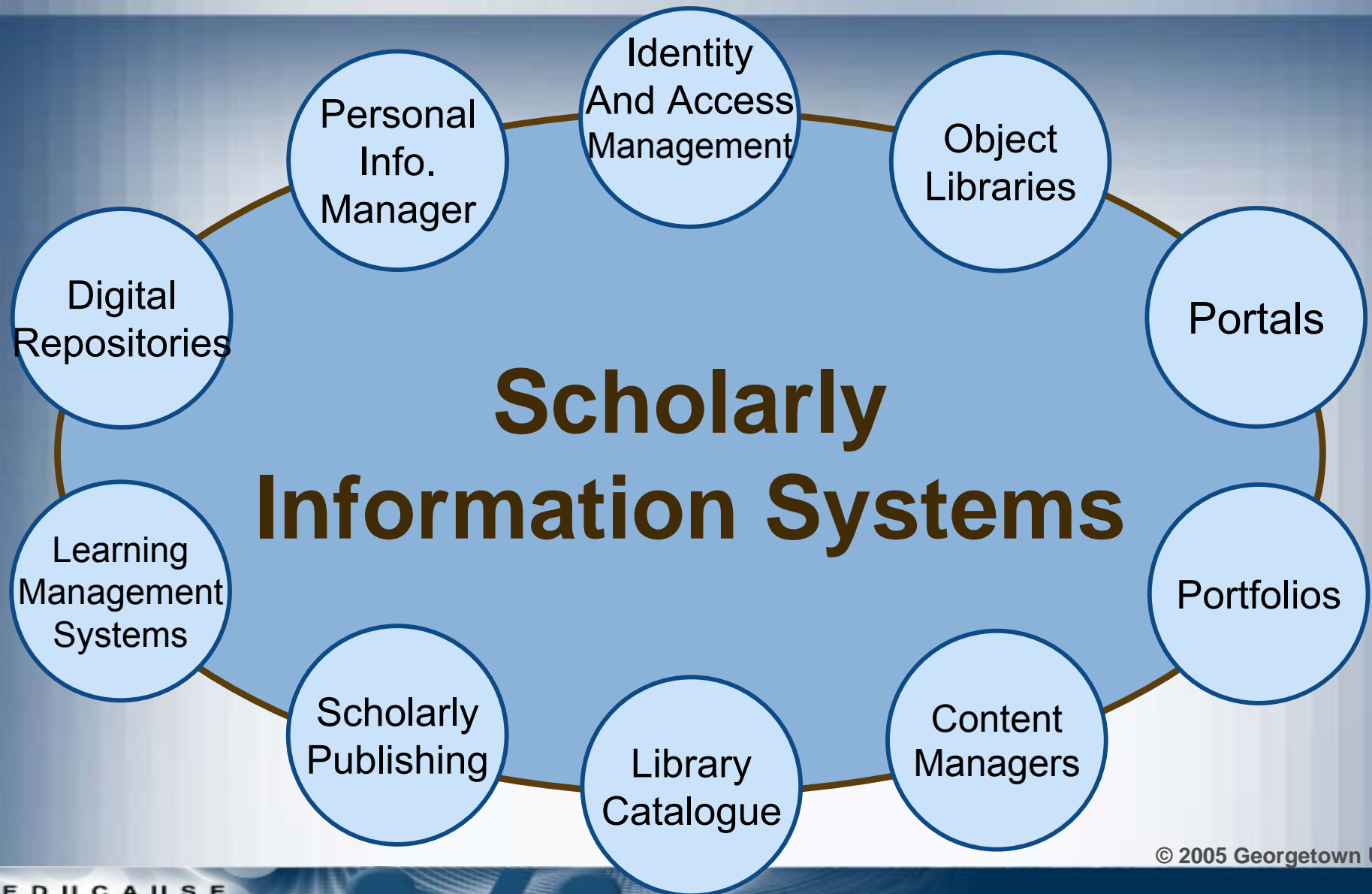
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Collaborative OS Community



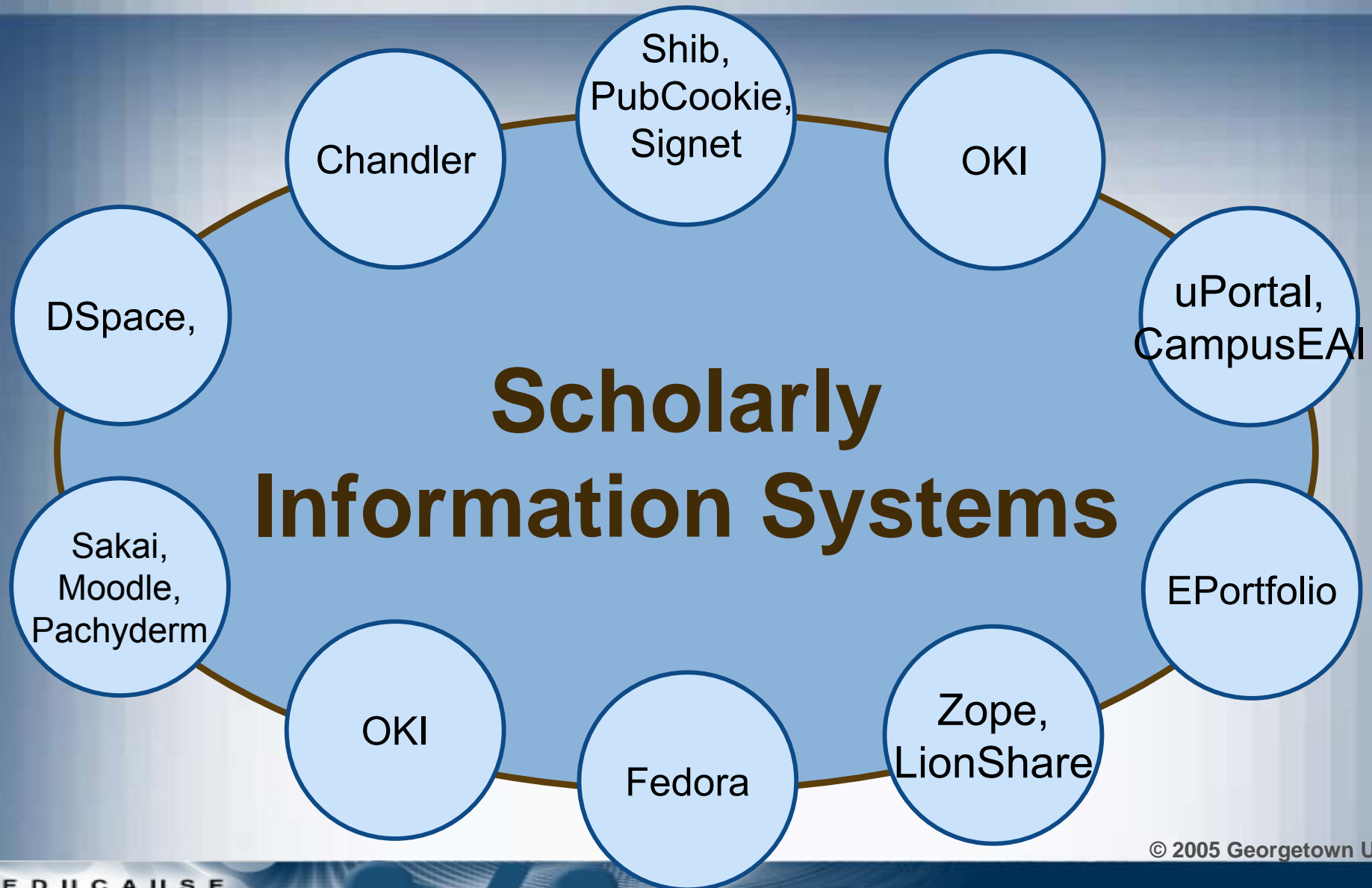
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Collaborative OS Core Focus



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Collaborative OS Core Focus



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Challenges Ahead

» **Standardizing Licenses**

- Proliferation of OS License Models
- Barriers to borrowing code from programs
- Intellectual Property of Contributions

Challenges Ahead

» Need Leadership to drive acceptance of an appropriate model within Higher Education

- What is the role of the CIO?
- Does the current state of the CIO/CFO relationship hurt or help?
- Organizations (EDUCAUSE, UCAID, NACUBO, user groups)
- Presidents and Boards ?????
- Why haven't we created a UCAID for software?

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Challenges Ahead

» *Educating the Community*

- Free ≠ Free deployment, customization, and support
- Lack of information to assess software quality
 - » What is the 'due diligence' model?
- Perception that OS is new and limited
- Risk aversion to new technology

Challenges Ahead

» *Sustainable Economic Model*

- Competitive threats from commercial software developers
 - » Is this really a bad thing?
 - After all, maybe the objective has been achieved
- Funding (investment and sustenance)
- Insufficient network of vendors and OS service providers
 - » Success will require new types of partnerships, revised vendor strategies, and new types of businesses.
 - » Would a higher ed software company make sense? Is it feasible? What would be the model?

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Challenges Ahead

» *Strong Collaborative Community*

- Institutional priorities, accountability, governance models
- Competition between higher education institutions
 - » Will collaboration turn into competition?
 - Is this a matter of whether or when?
- What are the right models for vendor partnership?
- Free riders; what value do the non-producer schools bring?

Challenges Ahead

» *Supporting Software Diversity*

- One size does not fit all
 - » Is OS just another alternative? Or a mission?
- Choice and competition
 - » Live by OS!, die by OS?
- Modular and flexible software
 - » Will we live by our own mantra?
- Good reference architectures and data models

Challenges Ahead

» *Neutralizing Policy and Political Threats*

- Patent litigation, IP claims (i.e. SCO)
 - » The threat is just as damaging as the reality
- Impact of state government acquisition requirements
- Pending national and international legislation
- Open Source Insurance??
 - » <http://www.osriskmanagement.com>

Pipedream or Panacea?

A greater likelihood of using open source to achieve 'value zone' solutions by focusing on our core business:

Scholarly Information Systems

Key elements of the solution space

- » Build an architectural framework and reference data model for student and scholarly information systems
- » Continue to invest in new scholarly information systems using a collaborative, open approach
 - LMS, portfolio, digital repository,
- » Work to 'open up' the student system environment using collaborative development and open source/standards
 - *How can we work with our vendor community to minimize risk ?*
- » Establish a new organizational vehicle from the collaborative community to address the challenges and barriers

Challenges and Barriers

- » Standardizing Licenses
- » Addressing Leadership Issues
- » Educating the Community
- » Creating a Sustainable Economic Model
- » Strengthening the Collaborative Community
- » Assuring Software Choice
- » Neutralizing Legal and Political Threats