Integrating Identity Management – Aspirations and Issues

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Presentation for Open Repositories 2006, University of Sydney, 2nd February 2006

Overview

- Aspirations for repositories
- Where are we today – identity and access?
- What could the future be?
- Any reason for optimism?
  - Directory/SSO
  - Shibboleth
  - XACML
  - Open Source Software
- MAMS

Some Aspirations

- Staff and students can share a compound (multi-part) resource (eg, PhD) where some parts are openly available, and some parts require restricted access

  (Restrictions could be by country, institution, time, role, discipline)

- A researcher can share a valuable, restricted availability dataset with colleagues at partner institutions and/or discipline peers – easily, securely, automated

- A librarian can manage access policies for protected resources in a single, unified way regardless of the type of resource, repository software, location of resource, etc

Some Aspirations

- IT managers can provide a central, secure identity service which provides Single-Sign-On to all applications and repositories, and application/repository owners don’t manage identities, just access policies based on attributes

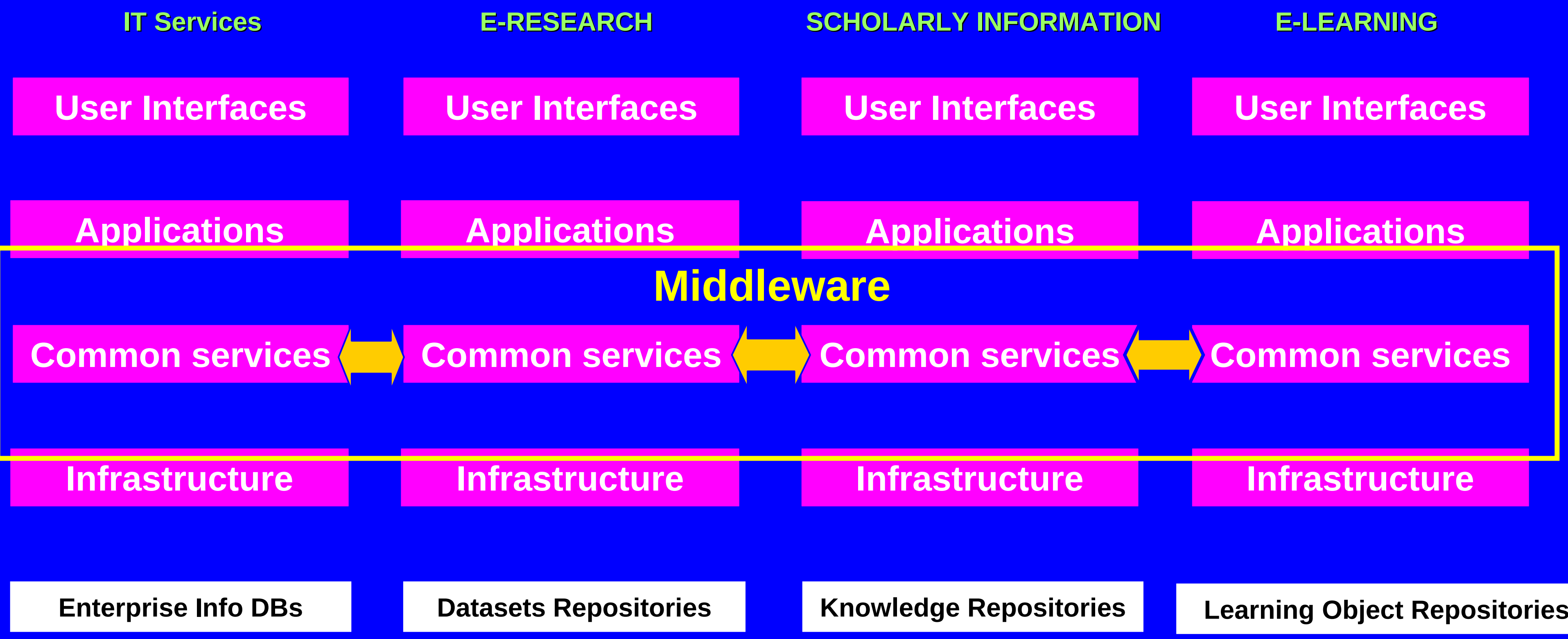
- Access to federated search facilities that work across many repositories; including the new problem of “authenticated federated search” across protected repositories

- Solve DRM without lock-ins, preserve privacy and maintain openness wherever possible and appropriate

Two More Aspirations….

- Identity and Access Management solutions for institutional repositories should also work for:
  - Dataset repositories
  - Learning Object Repositories
  - Online collaborative “Virtual Organisations”
  - Grid/High Performance Computing services
  - Campus portals
  - Etc
- Solutions should work across institutional boundaries (not just within)
  - Therefore open standards are crucial, as the systems will be different

Convergence of Higher Education Domains



IT Services	E-RESEARCH	SCHOLARLY INFORMATION	E-LEARNING
User Interfaces	User Interfaces	User Interfaces	User Interfaces
Applications	Applications	Applications	Applications
Common services	Common services	Common services	Common services
Infrastructure	Infrastructure	Infrastructure	Infrastructure
Enterprise Info DBs	Datasets Repositories	Knowledge Repositories	Learning Object Repositories

Middleware

What is typical today - identity?

- Well managed central directory of identities is rare, mainly a fairly messy set of identity silos across campus
  - Eg, nine different identity silos just within the library
- Identity management processes are weak and inconsistent
  - "Evidence of identity" is uneven, "provisioning" uneven, lots of security holes (but mainly in low risk contexts, eg e-journals)
- Repository systems are hard (or impossible) to link to external directories of identities (…hence silos)
- IP address, not person-based, access to protected content

What is typical today - access?

- Repository software has its own (usually closed) approach to controlling "who gets access to what" (authorisation)
  - Open source software, while helpful, is not necessarily a solution if a repository's authorisation mechanisms are not cleanly separated
- Access to protected resources usually requires personally identifying information (typically a name and password)
  - Privacy implications for search; intellectual property disclosure issues (bio)
- Library-managed protected resources involve a nightmare of access management issues (both contracts and technical)
- **Many researchers have valuable resources/datasets sitting on their desktops because they don't have a simple method for restricted sharing

What could the future be?

- One central identity store (managed by IT Services)
- Single-Sign-On across all appropriate applications
- Able to share (open and) restricted-access resources
  - Easily, automated, preserve privacy where relevant
- Able to easily manage access policies
  - A new key role of the librarian?
- Traditional and authenticated federated search

No more identity duplication or hard-wired access control!

Any reason for optimism?

1. Central Directories/Single-Sign-On
2. Shibboleth
3. XACML
4. Open source software

Directory/SSO

- Examples of one, centralised, well managed directory of identities providing Single-Sign-On now exist in universities
- Most university IT managers have identity projects on their list of priorities (although rarely at the top yet)
  - **Now is the time to push for these projects to start
- Many applications are getting better at working with external identities and SSO (if not, question their future value)
- E-Security concerns are becoming a new driver
- SAML V2 incorporates SSO

Shibboleth (SAML) 101

- Open source software based on an open security standard (SAML – Security Assertion Markup Language)
- Allows an identity system (eg, directory) to pass attributes to service system (eg, repository)
- World-class privacy preservation
  - Core use case: A researcher at University A wants to access a restricted resource in a repository at University B; where the repository needs to know the request comes from a trusted partner institution, but without necessarily identifying the individual
- Shibboleth is crucial, but not the whole solution
  - (Shibboleth manages and transmits the attributes only)

XACML 101

- Open standard for policies to control access (XACML – eXtensible Access Control Markup Language)
  - Open source XACML processor available
- Allows access to repository resources to be controlled by a separate, flexible, easily-edited language
- Can receive SAML attributes to process yes/no access decisions
- SAML + XACML provides an alternative solution to DRM
  - IFFFFFFFF….. web based access control is sufficient for now….

Open Source Software

- Open source software has a range of potential benefits
  - Innovation
  - Total cost of ownership
  - Re-use and adaptation of software
- In the particular case of repositories and access control, open source is useful for two reasons:
  - Access rights associated with resources remain open (no risk of closed rights being used for proprietary software lock-in)
  - Open source allows developers to build access control software modules that are not hard-wired into the rest of the repository
    - Potential for a single access control system and a unified set of access policies, <u>regardless</u> of repository software chosen
      - But – requires repository to allow for modular access systems

MAMS

- MAMS (Meta Access Management System) is a 3 year DEST funded project to solve end-to-end identity/access issues
- Working on Directories/SSO (with IT Managers); Shibboleth (including easy install CD, national testbed federation, ShARPE); Shibbolising repositories; XACML for repositories; authenticated federated search
- Testbed federation is available (400,000 identities so far)
  - Use easy install CD to join (www.federation.org.au for more details)
- Various workshops and roadshows throughout 2006
  - Eg, technical workshop on shibbolising services in February
- The vision described today already works – rollout is the key

Collated Votes for MAMS Service Prioritisation

Subject	Number of votes	Rank
Single Sign-On	129	1
DRM & Repository Access	100	2
Federation Policy	76	3
Virtual Organisations	59	4
Attribute management	57	5
Accountability/Audit	47	6
Visiting Academic	45	7
User Preferences	32	8
Messaging	12	9
Calendaring	10	11
Anonymous Access	11	10
Presence	9	12
AV conferencing	4	13
Whiteboard	1	14