



**e-Framework**

for education and research

# **Integrating Everything: the JISC-DEST e-Framework for Education and Research**

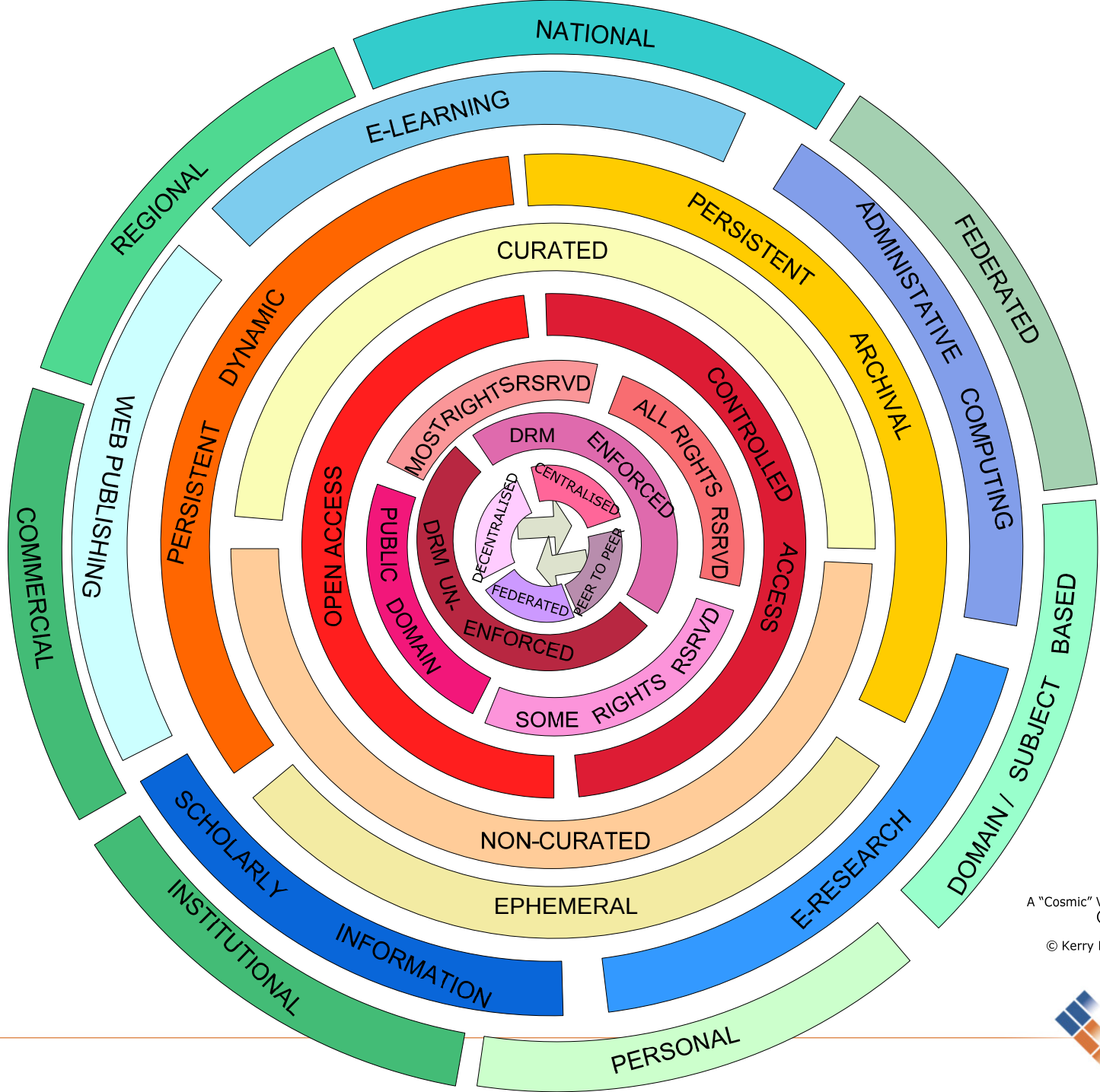
**Kerry Blinco**

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**Co-Manager e-Framework Operations Group**

**E-Framework and Standards Manager, RUBRIC Project, DeC University of Southern Queensland**

- Service oriented approach
- JISC / DEST e-Framework
- Services and References Models
- What does this mean for Repositories?



A "Cosmic" View of the Repositories Space  
(Wheel of Fortune)

© Kerry Blinco & Neil McLean, 2004

# What do we mean by:

e-learning

administration

**“INTEROPERABILITY”**

grid

collaboration

e-research

simulation

digital libraries

portal

performance support

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e-learning

repositories

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**“INTEROPERABILITY”**

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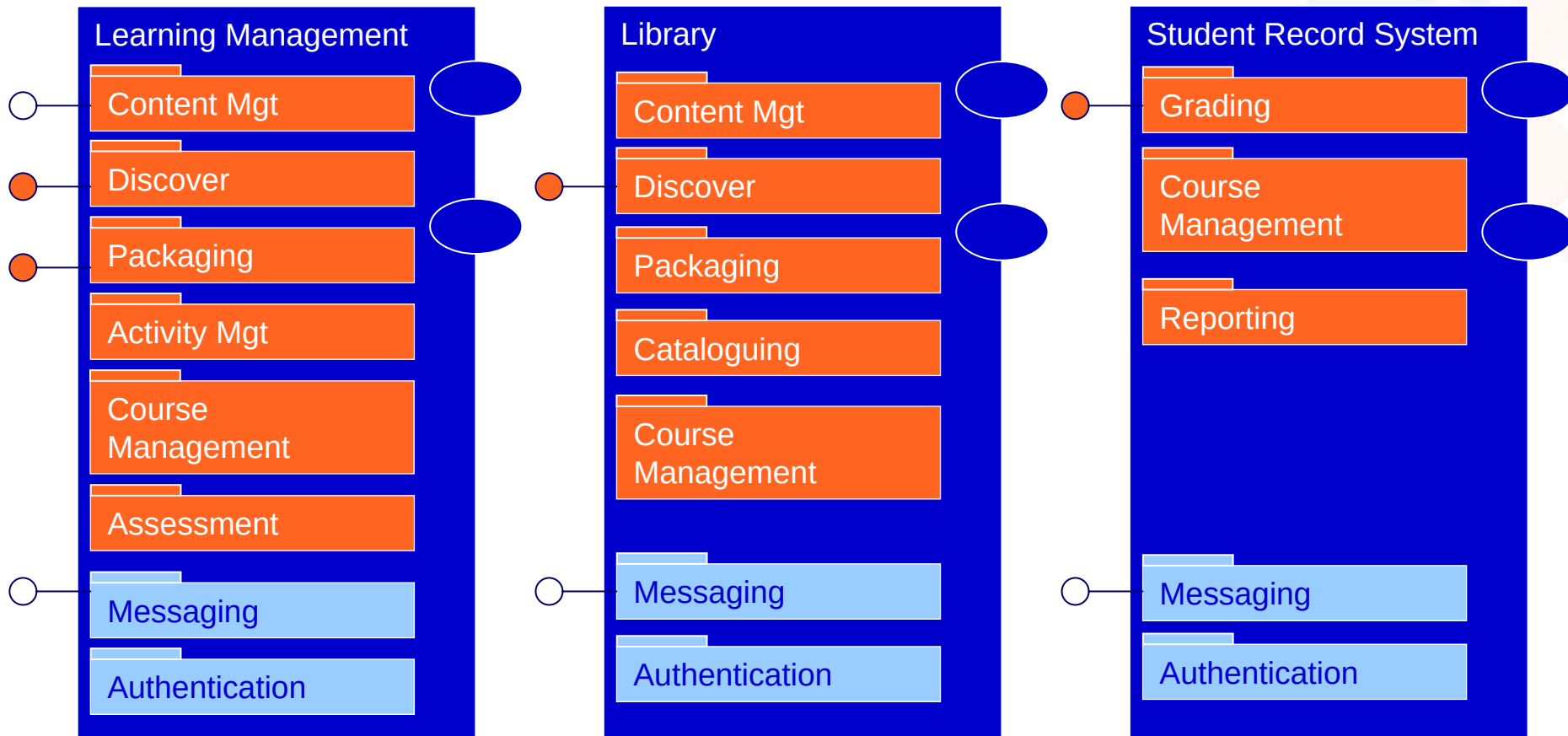
digital libraries

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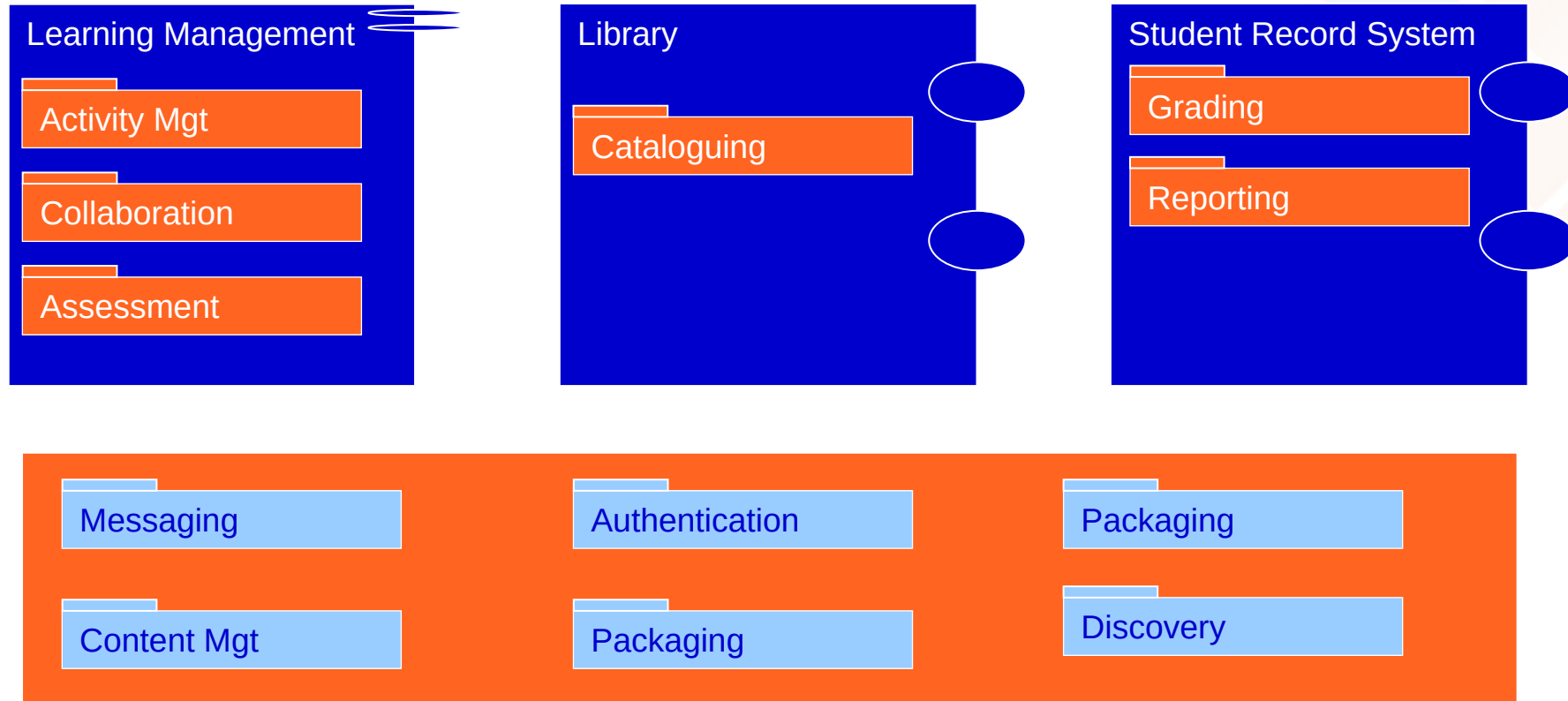
# A service oriented approach to interoperability....

# Typical University Environment



- Overlap of functions and data within components means significant data replication required to keep components synchronised.
- Virtually impossible to implement single sign on, for example, in this type of environment.

# Service oriented approach

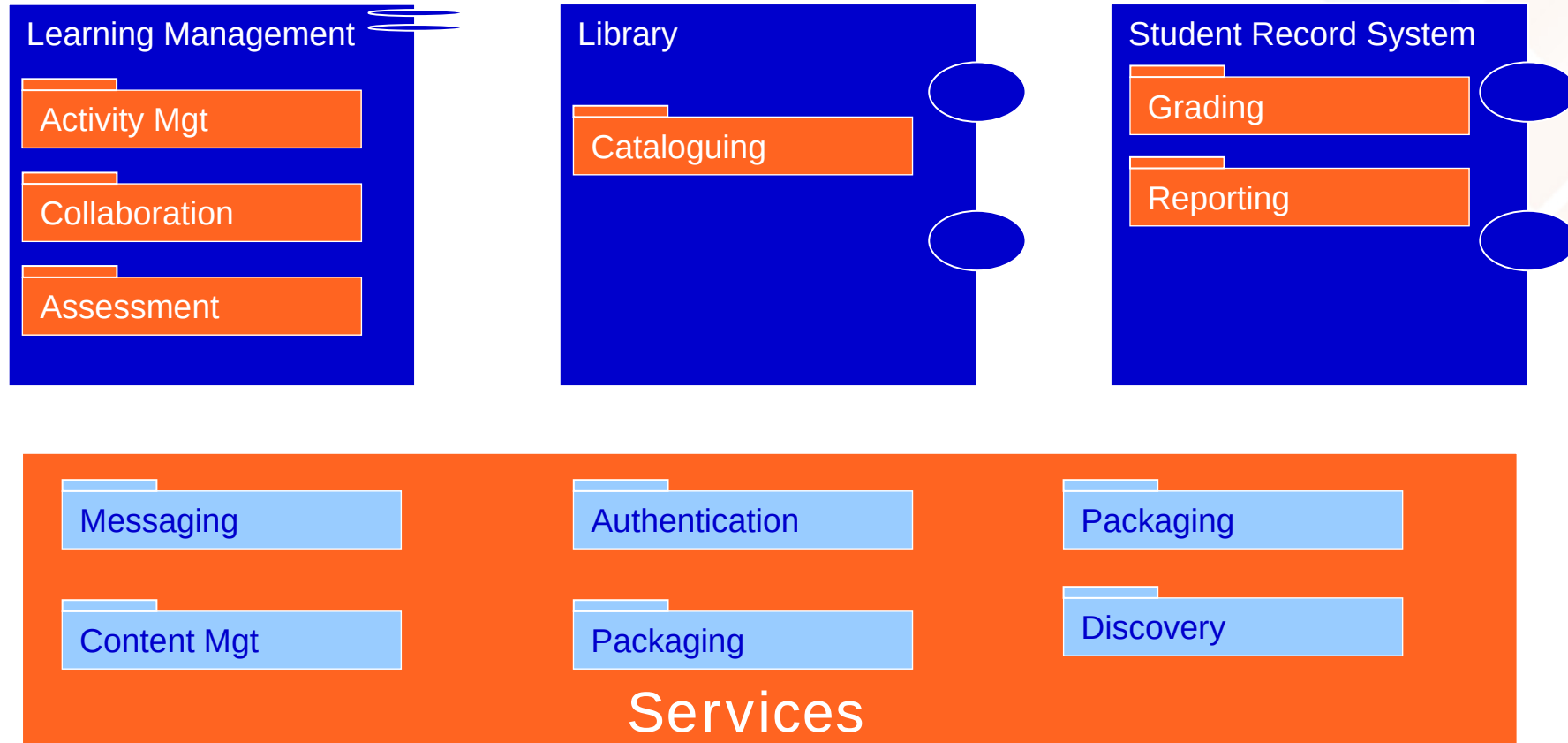


■ No need to replicate data; all applications use the same common data sources.

■ Individual components smaller so easier to create and maintain.

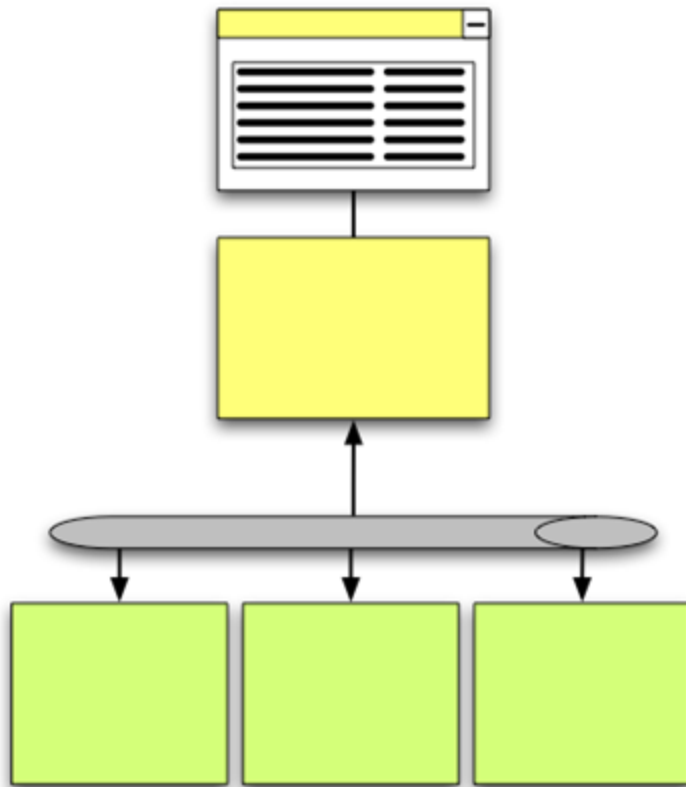


# Service oriented approach



**Services** need well defined interfaces so all components can access them.

# How do services help build applications?



- Presentation and workflow constructed from multiple shared services
- Data and business function encapsulated in services

# “soa” vs “SOA”

- “soa” – service oriented approach  
a system design methodology using networks of loosely-coupled, communicating services.
- Implementations of e-Framework components use “SOA” Service Oriented Architecture where appropriate  
software architecture for a service-oriented approach implemented using a particular technology, e.g., CORBA, web services.

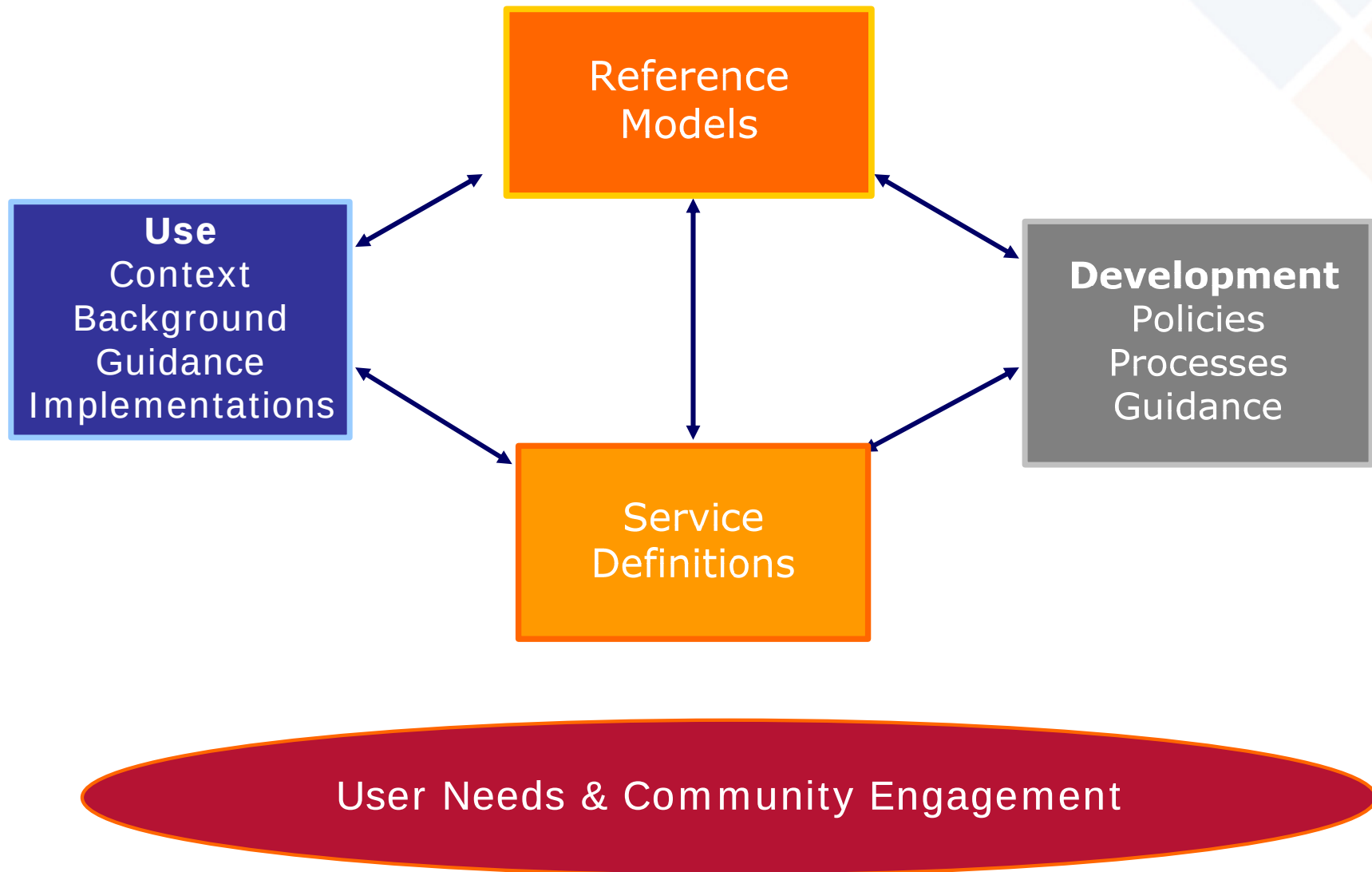
- A collaborative initiative by:
  - **JISC** The Joint Information Systems Committee (UK)And
  - **DEST** The Department of Education Skills and Training (Australia)
- Evolving, sustainable, open standards based, service oriented technical framework
- Developed from the ELF, expanding to e-research, information environments etc
- Defining vocabularies, notations and methodologies
- Coordination with funding programs of partners – eg Repositories Programme in the UK, FRODO and MERRI projects in Australia
- Developing relationships with other interested bodies- NZ, SURF, DLF, standards bodies

# Why?

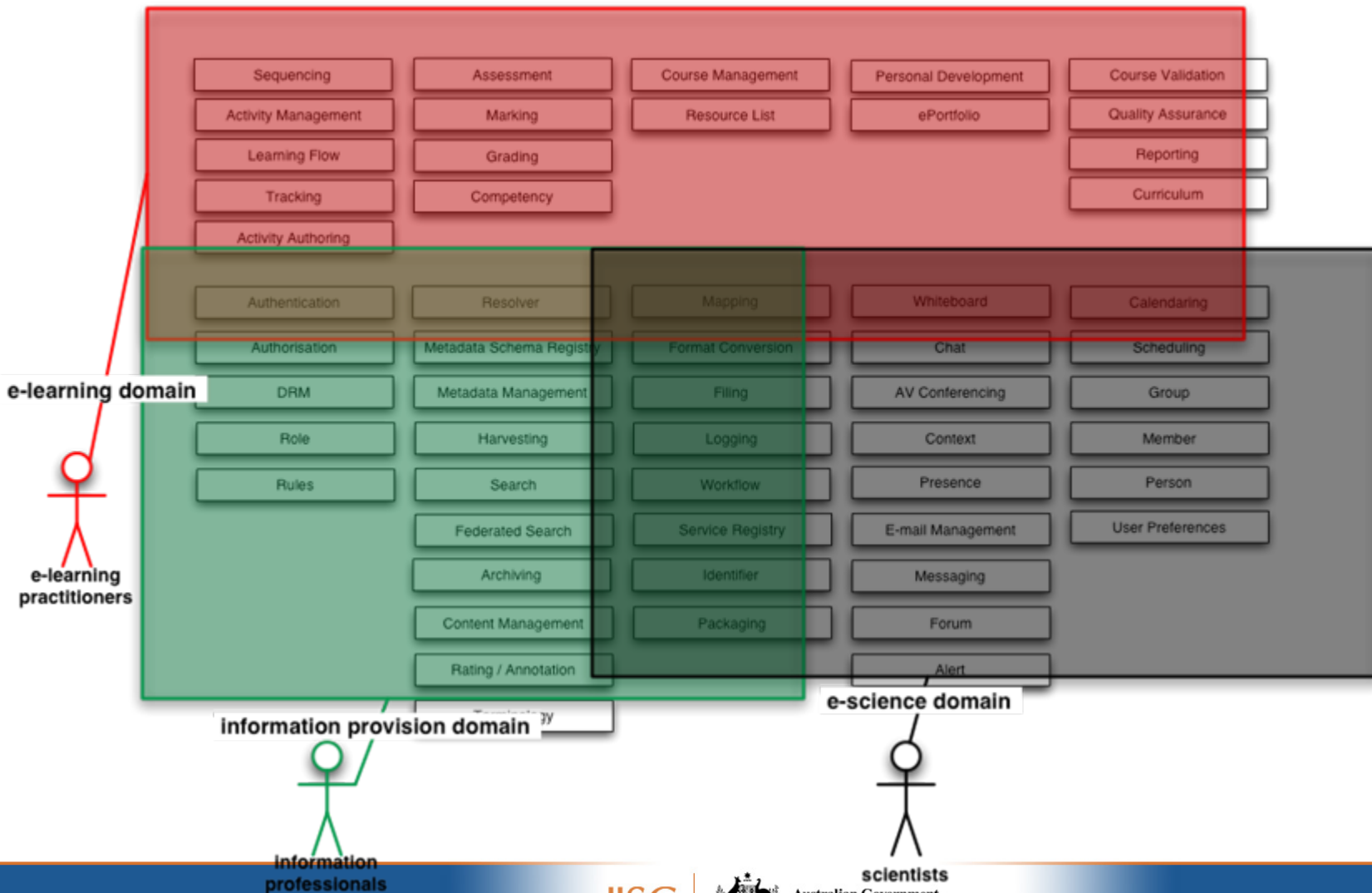
- To help us plan across domains
- To help conversations about developing ICT across libraries, learning, research, admin.
- A shared vocabulary and common ground
- Trend towards modular approach – flexibility
- Share costs to change and develop
- Identify gaps and needs
- Ability to build on previous work

- is not a static document
  - every aspect of the framework itself is developed iteratively
  - it mainly tracks and structures technological developments
- is not a prescriptive blueprint
  - tracks multiple solutions for the same component
  - designed to provide the components for specific architectures, but is not the architecture itself
  - provides structure to small, 'grassroots' development

# The e-Framework will contain:

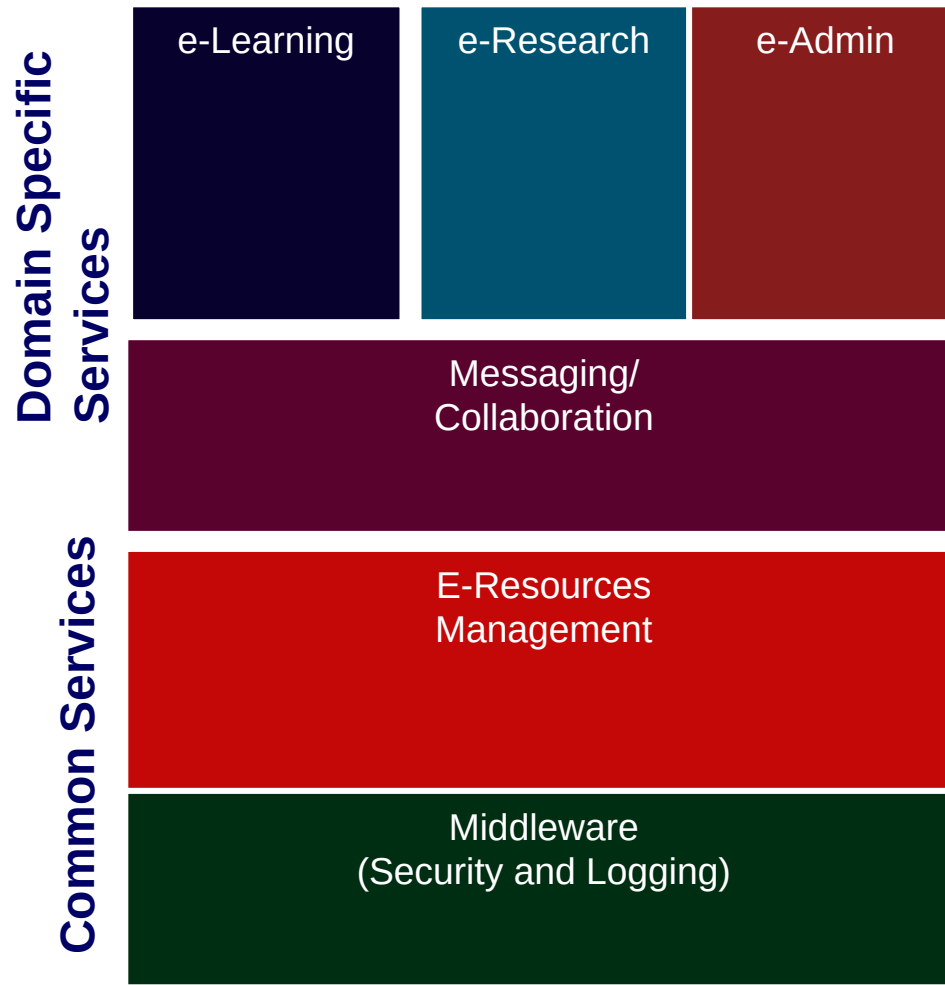


# Services metaphor

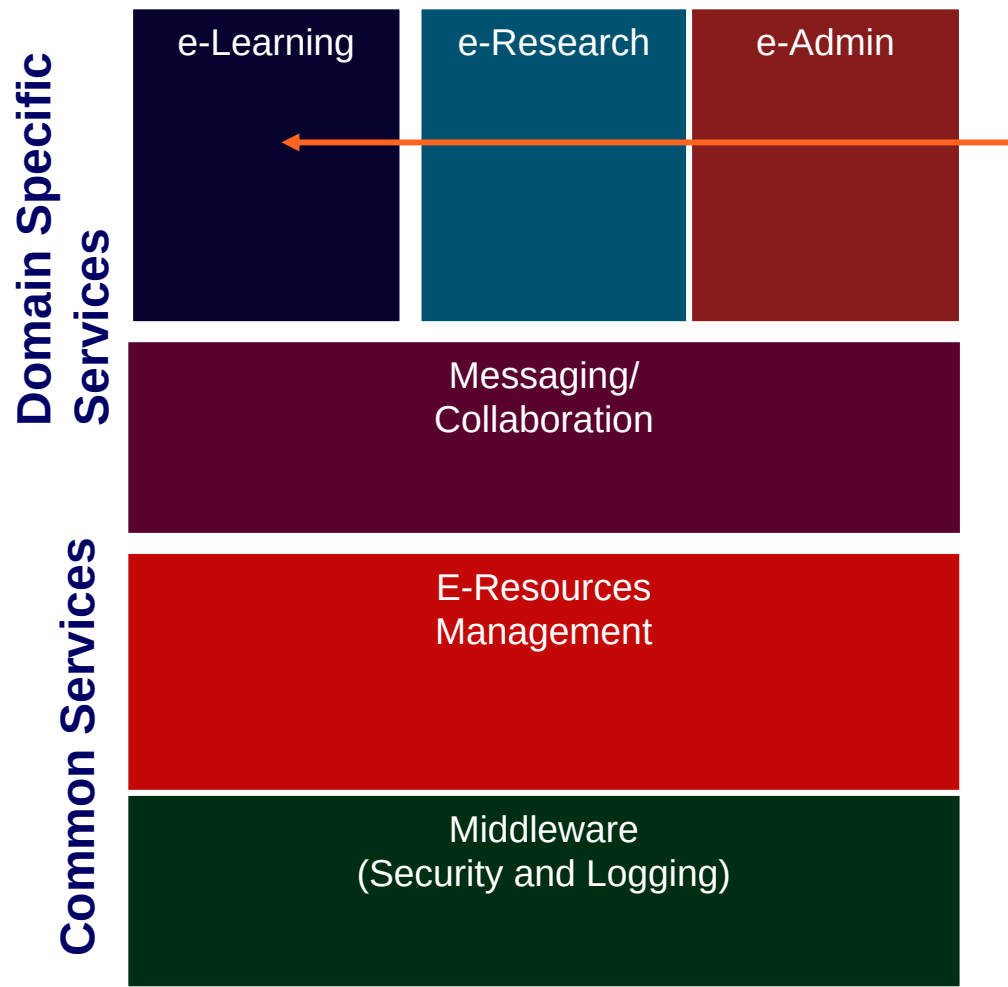




# “Domain” view of services

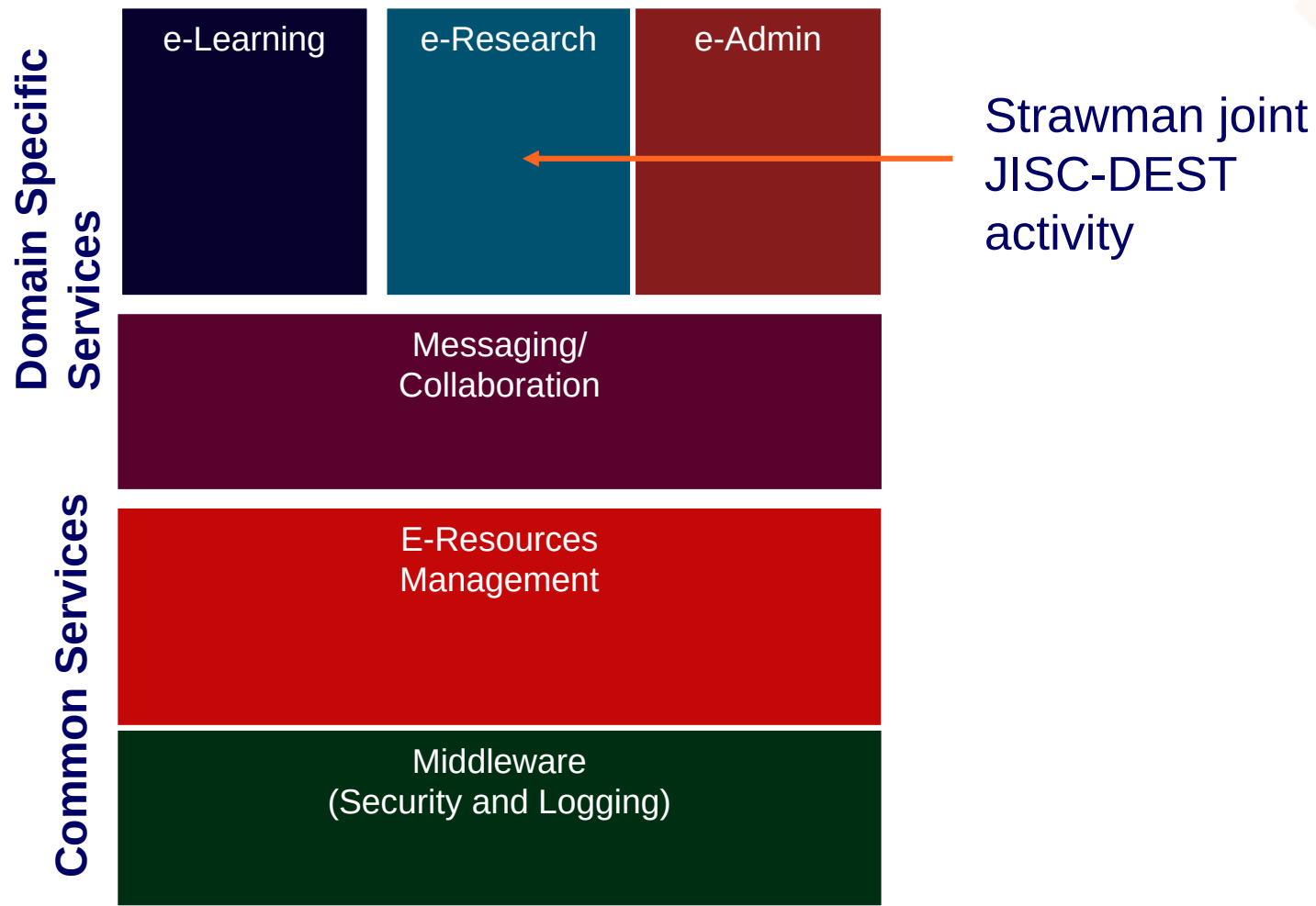


# “Domain” view of services

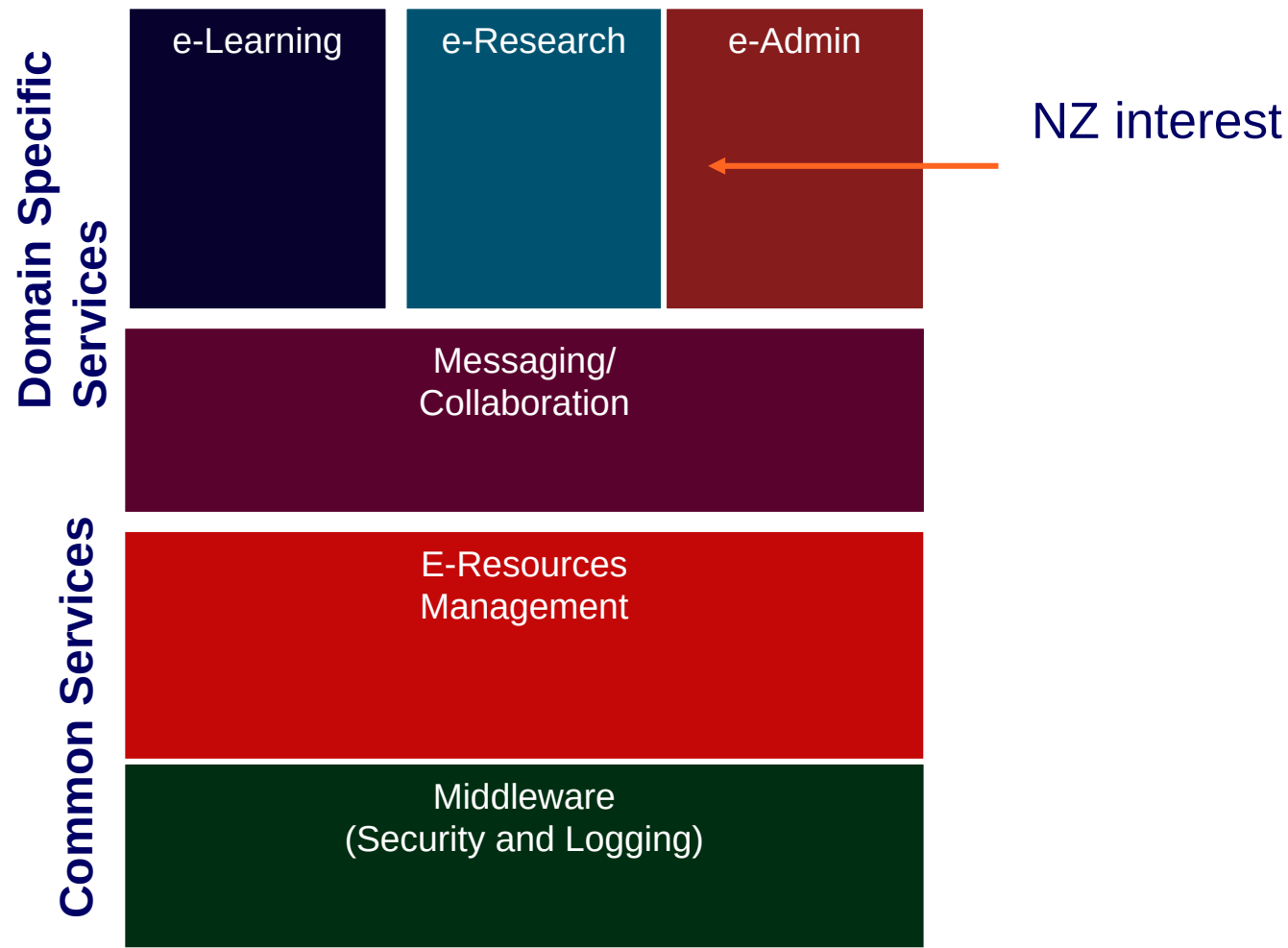


Most developed –  
further iteration  
required

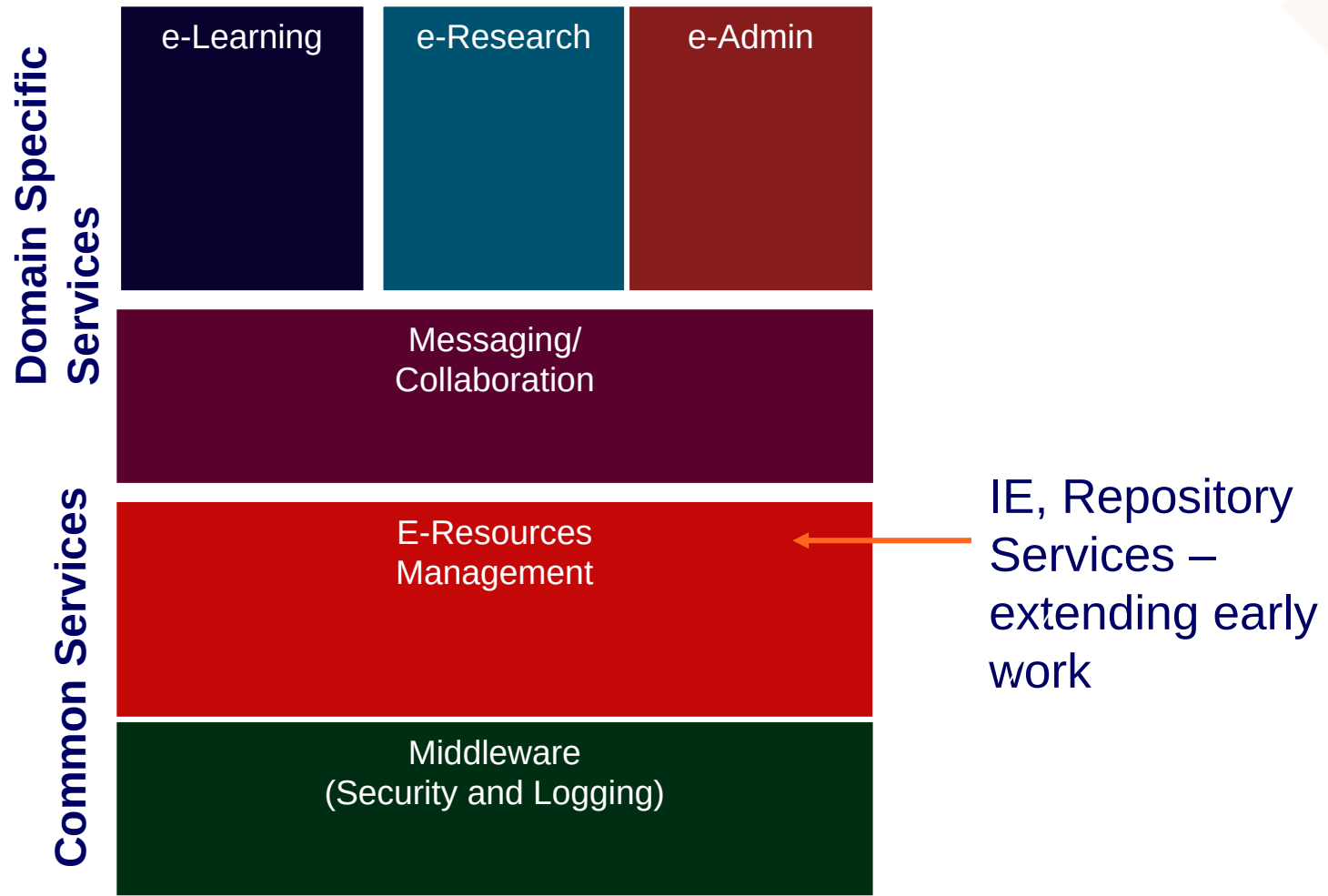
# “Domain” view of services



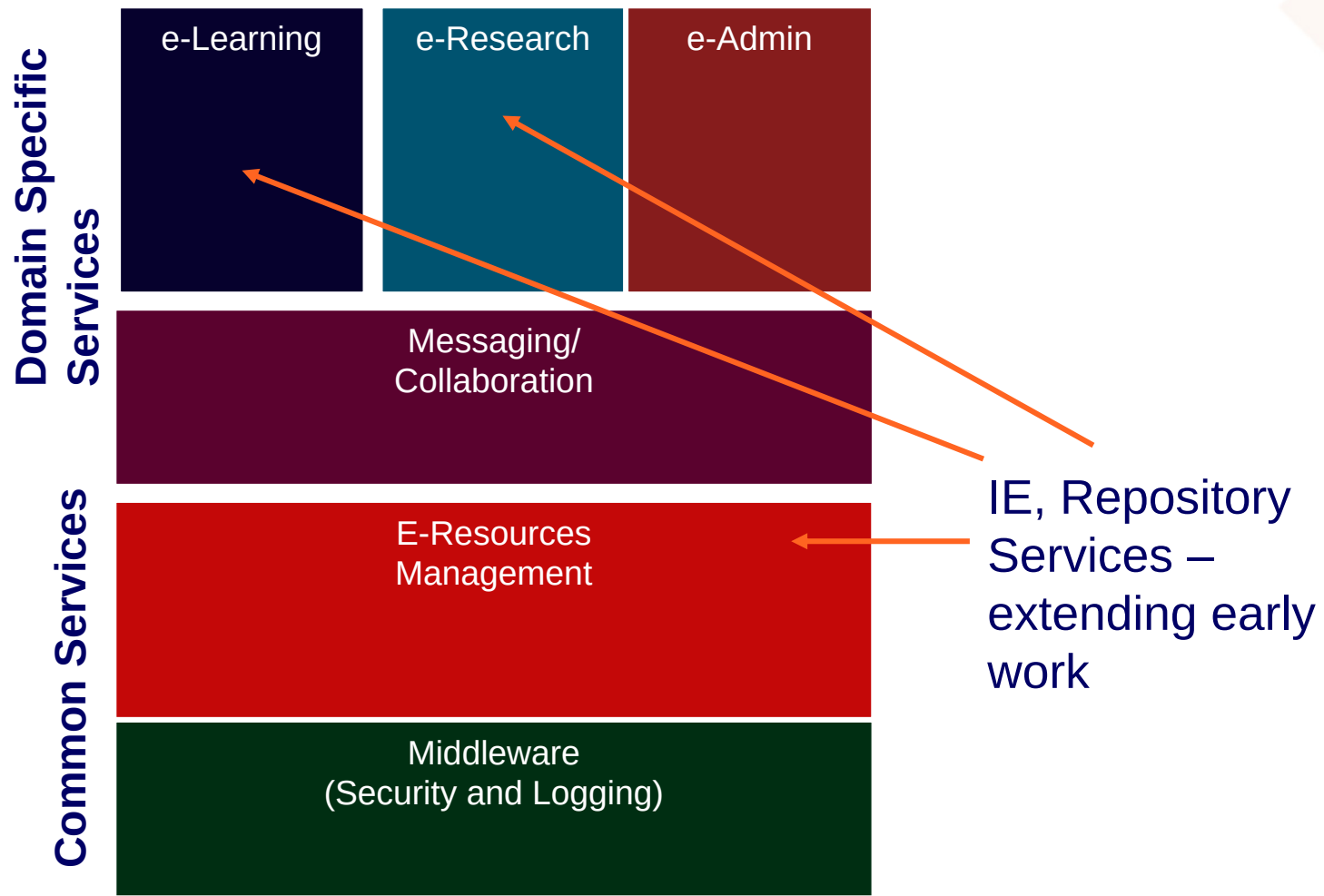
# “Domain” view of services



# “Domain” view of services



# “Domain” view of services



# Reference models

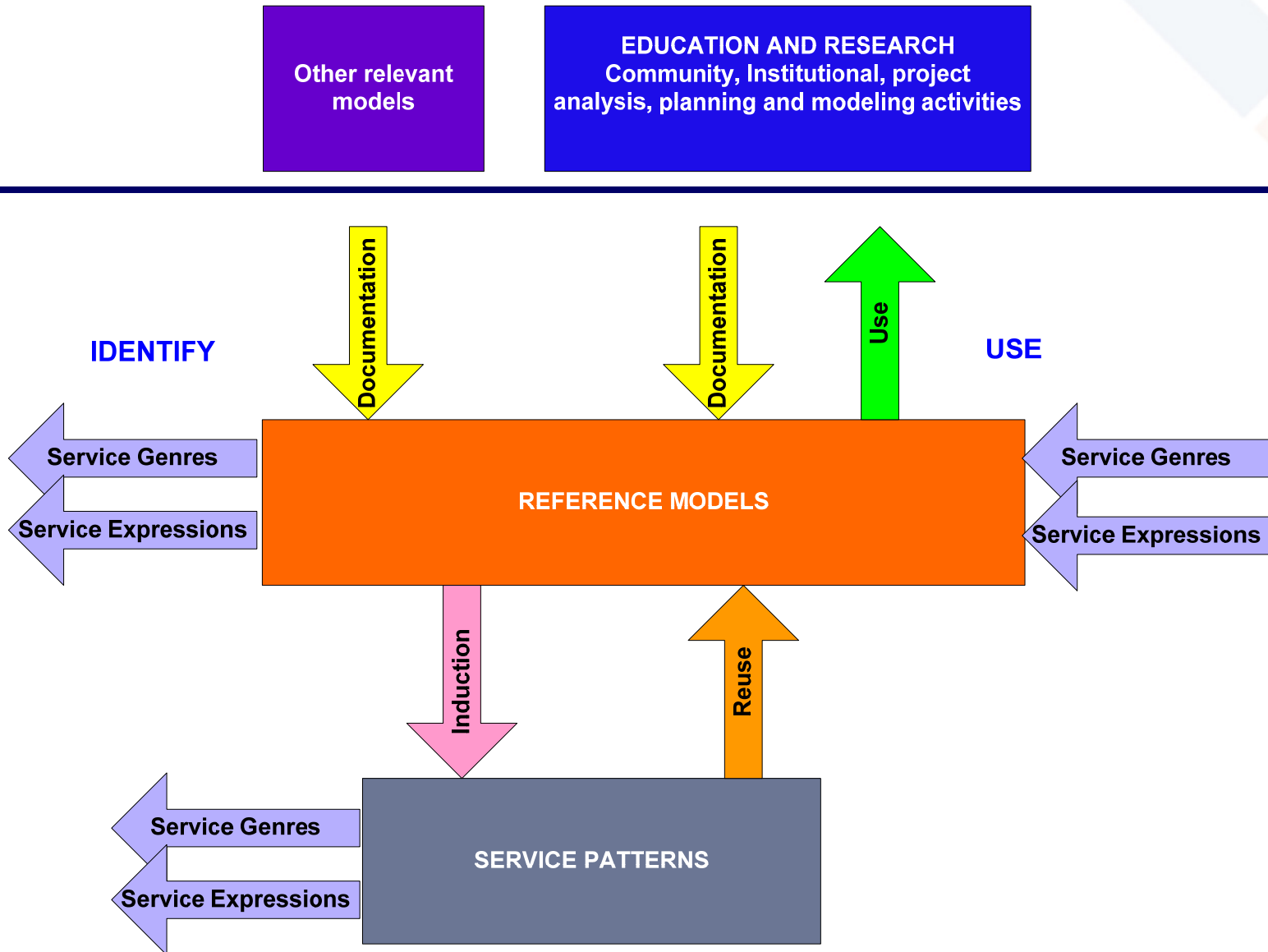
- aimed at a particular business process or workflow
- defined by services that they combine
- joins services with requirements
- different levels of granularity, some high level and abstract, some detailed and targeted at implementation
- no limit on the number of reference models in the framework
- can overlap with other reference models
- may be used to design implementations

## ■ For example:

- *Name:* time management
- *Domains:* e-learning, e-science, e-admin, digital library, repositories
- *Description:*
  - The time management reference model deals with the problem of sharing and co-ordinating the schedules of people and resources in an organisation.
  - It describes a workflow in which various actors can view schedules, edit them, or request an edit in them.
  - The purpose of the model is to make it easier to co-ordinate people and resources such as rooms, equipment and documents



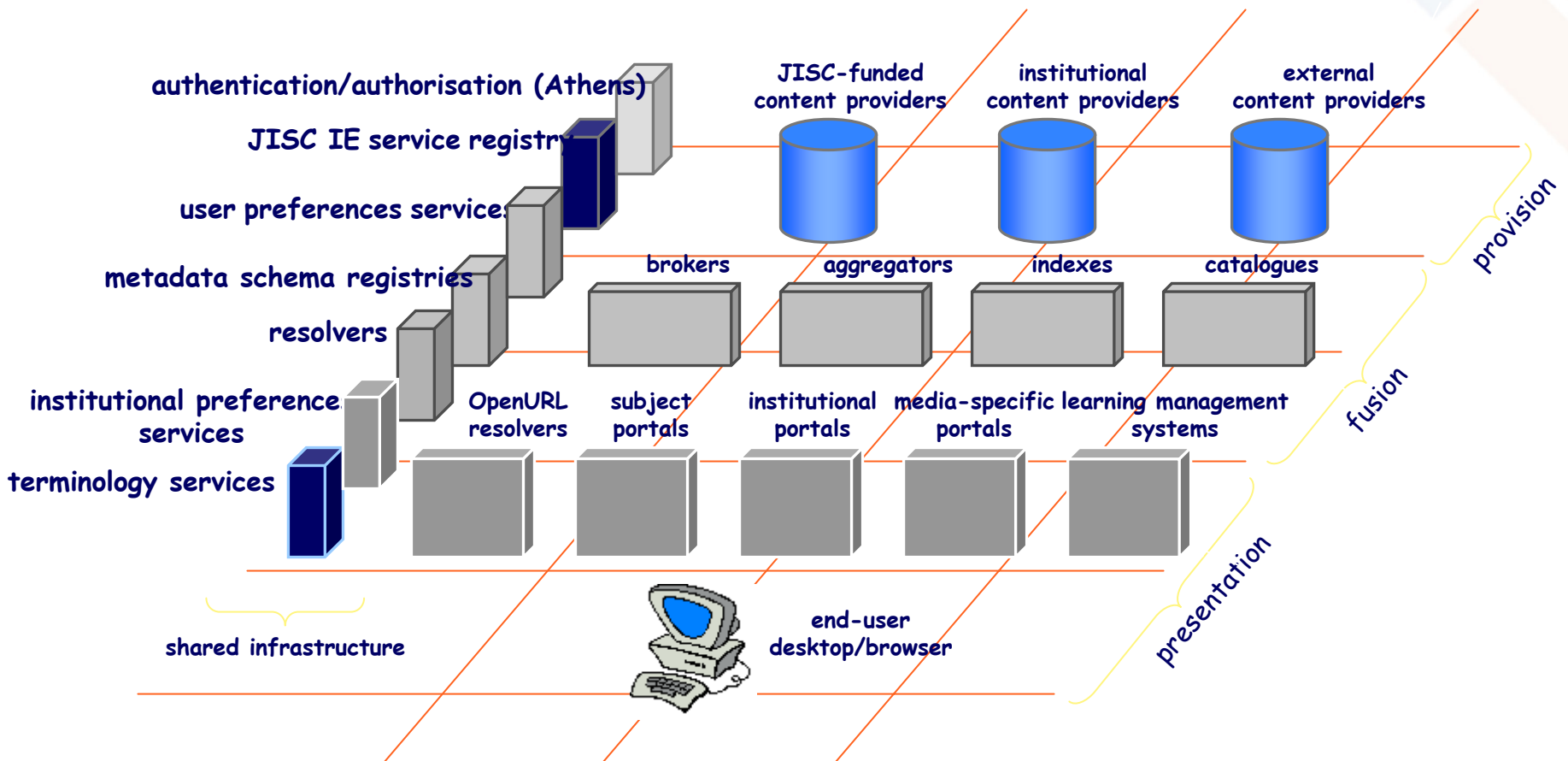
# Why do reference models matter?



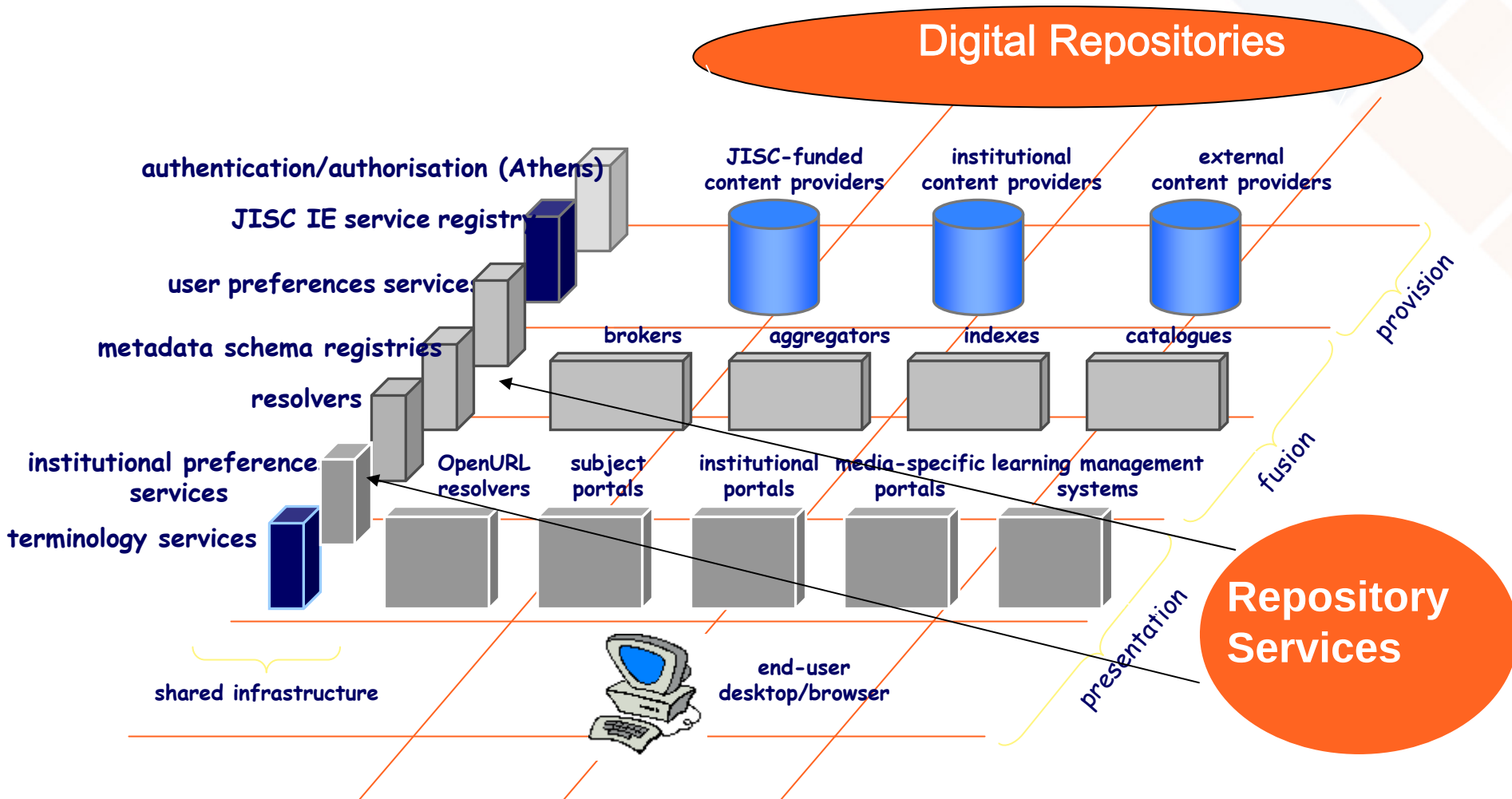
- A number of “reference” modeling and service framework activities in progress

eg: (Not inclusive – also NISO, ISO, activities, ADORE, Lorcan Dempsey’s blog etc)

# The JISC IE Architecture



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# The JISC IE Architecture

Describe collections & services  
Using the IESR schema

OAI PMH repository  
Dublin Core – OAI-PMH-DC XML/  
UK LOM CORE- Dig Repos. Spec

authentication/authorisation (Athens)

JISC IE service registry

user preferences service

metadata schema registries

resolvers

institutional preference  
services

terminology services

OpenURL  
resolvers

subject  
portals

institutional  
portals

media-specific learning management  
systems

end-user  
desktop/browser

shared infrastructure

Harvest using OAI PMH  
version 2.0

JISC-funded  
content providers

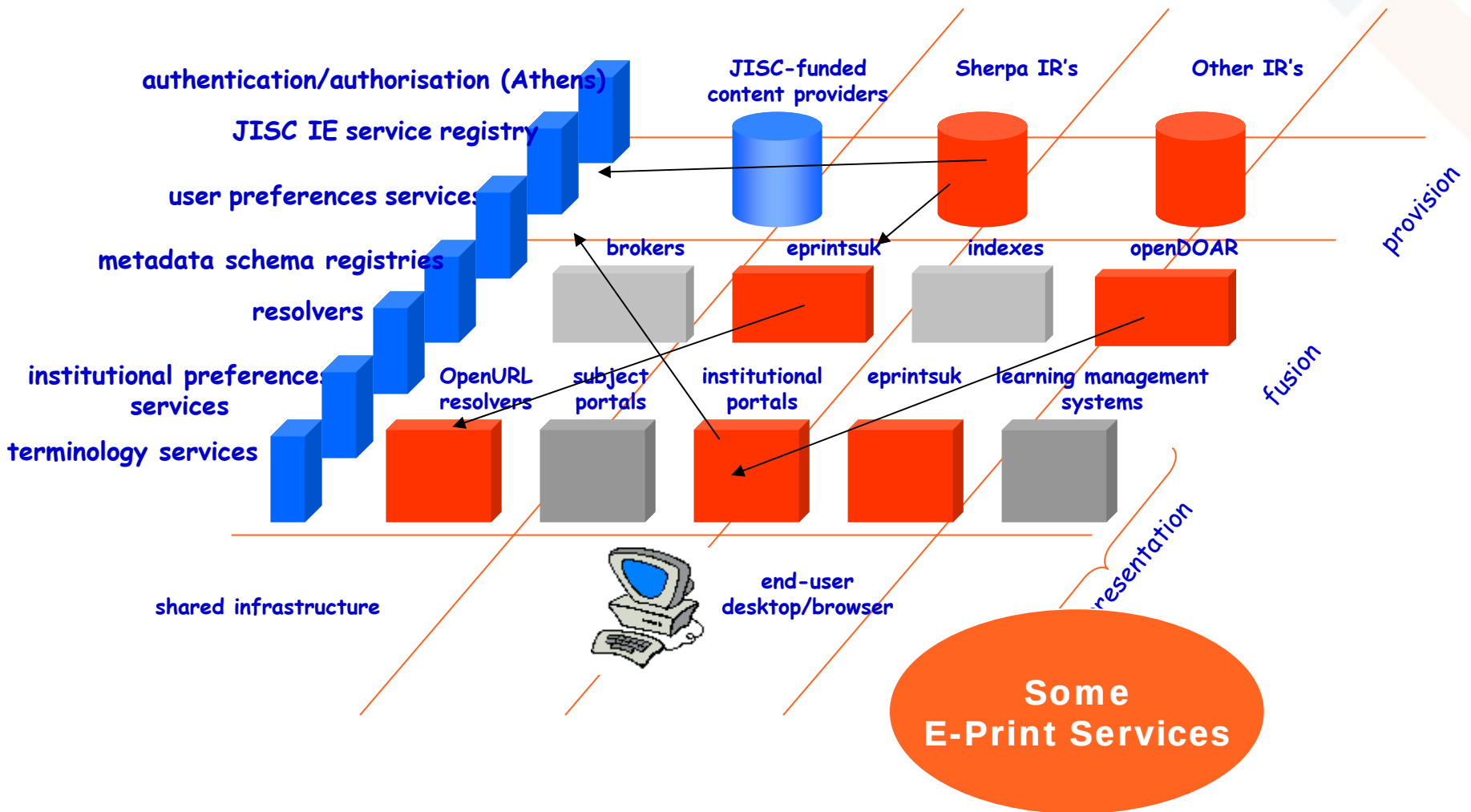
institutional  
content providers

external  
content providers

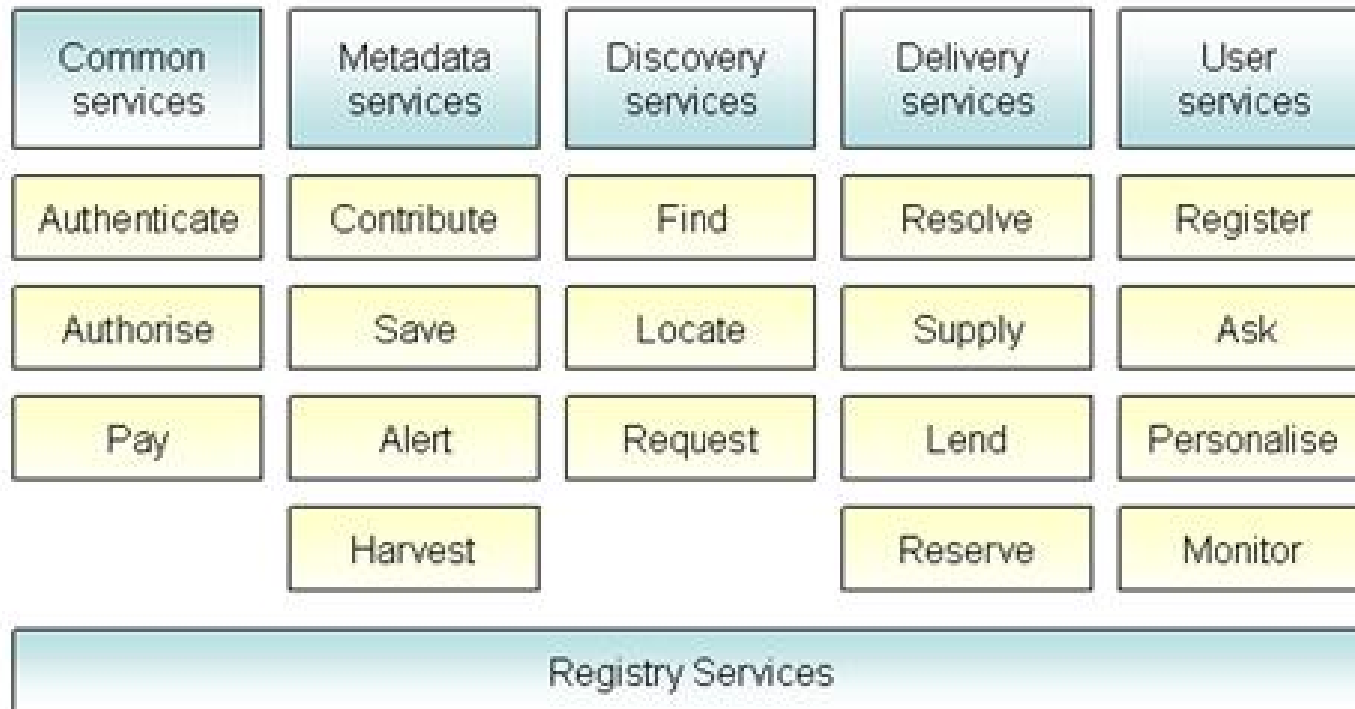
IMS content packaging,  
or METS

Assign persistent URI's

# The JISC IE Architecture

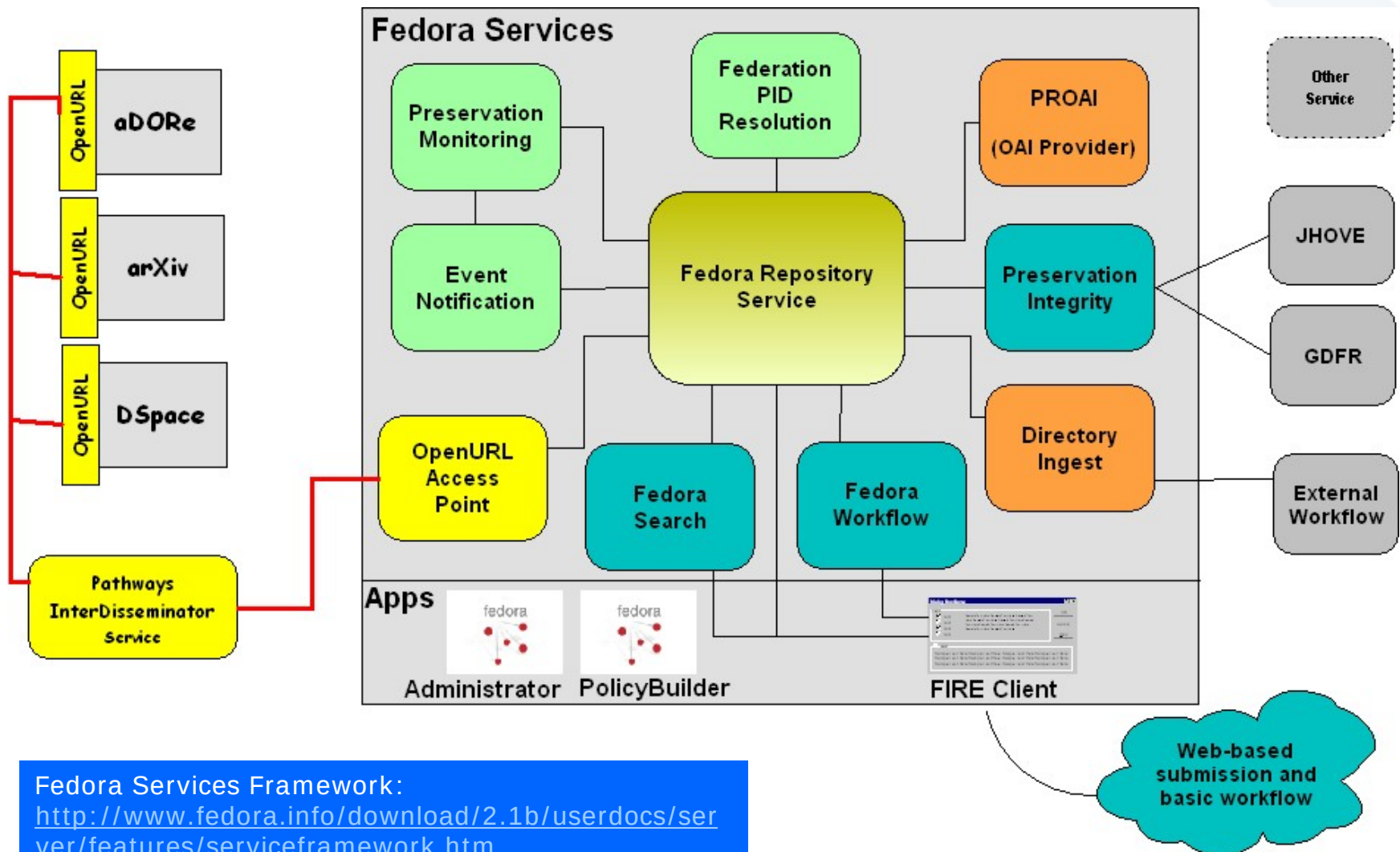


# Resource Discovery and Delivery



Judith Pearce (NLA) New Frameworks for Resource Discovery and Delivery  
<http://www.nla.gov.au/nla/staffpaper/2005/pearce1.html>

# Fedora Services Framework



Fedora Services Framework:

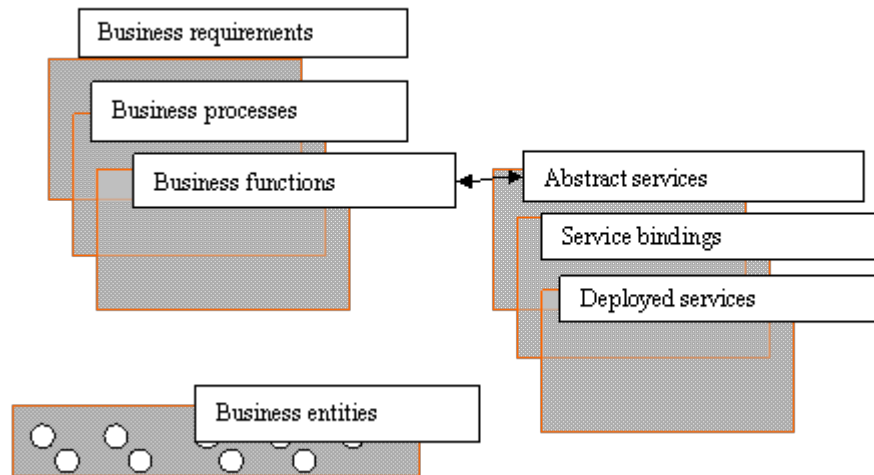
<http://www.fedora.info/download/2.1b/userdocs/server/features/serviceframework.htm>



# DLF Services Framework

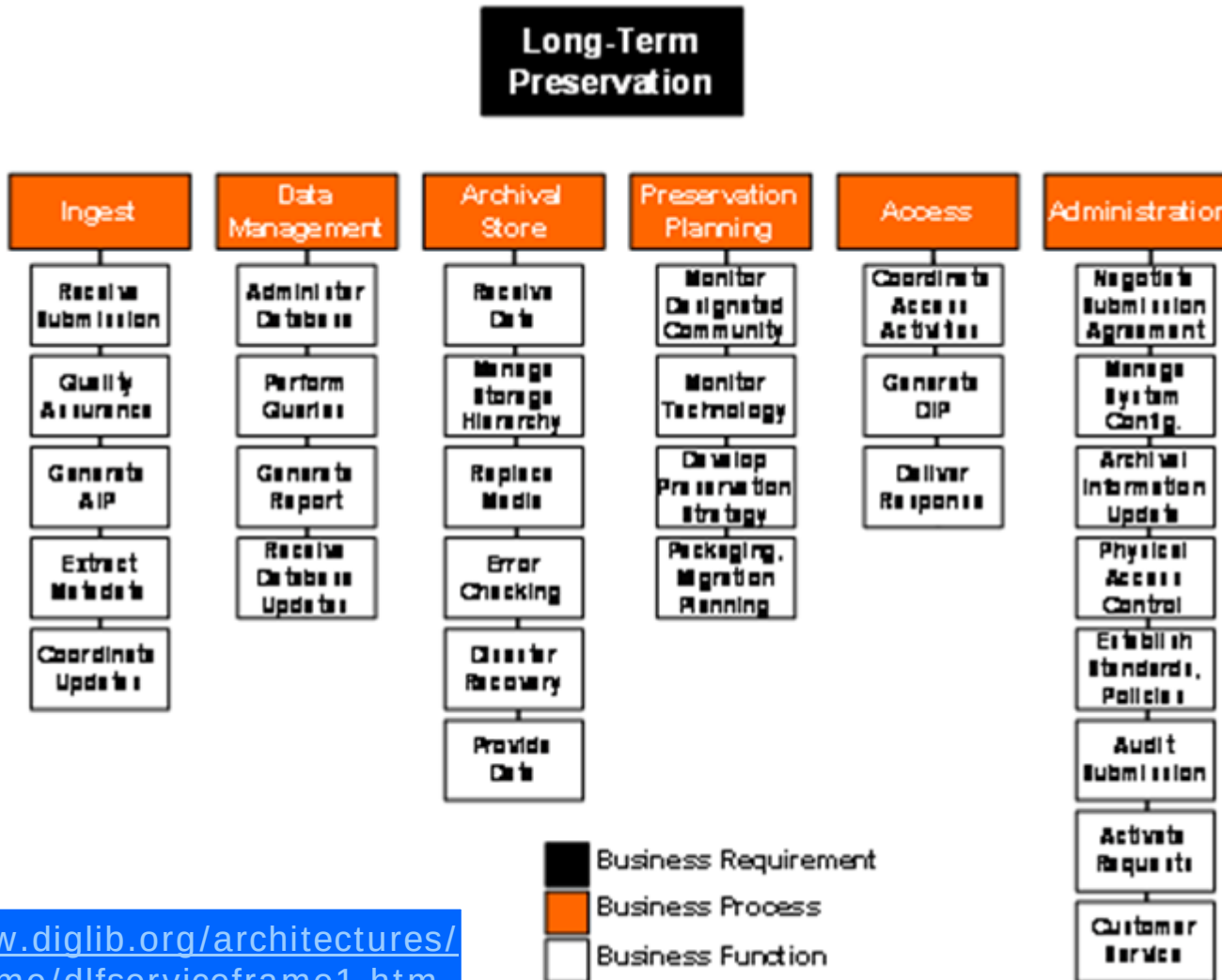
- In Spring 2005, DLF Services Framework Working Group recommended dedicated effort to define a framework for libraries to regain a shared sense of the library and its systems that can be modeled for more effective organization
- In January 2006 Geneva Henry appointed as Distinguished Fellow
- Will model the business processes side of the library to understand current operational models, independent of systems
- The opportunity
  - to provide a roadmap;
  - a common vocabulary;
  - a reference model through which to understand (but not dictate) local practice by comparison;
  - a way of articulating the value and business of the 21st century library to outside partners (and ourselves?) as clearly as we can articulate the 19th century one.

# DLF- Reference Model



<http://www.diglib.org/architectures/serviceframe/dlfserviceframe1.htm>

# DLF OAIS Reference Model



<http://www.diglib.org/architectures/serviceframe/dlfserviceframe1.htm>

# How the e-Framework approach helps Repositories



- Provide internally consistent vocabulary and processes to support conversations, documentation, dissemination etc
- Collaboration with DLF aims to share vocabulary, methodologies and notations whilst allowing different models
- Identify and document state of play with repository services and specifications
- Compare existing and developing models and architectures
- Identify reusable repository “Service Patterns”
- More input to the discussions on “Service Bricks” the better. eg raising interesting questions - are “repository” & “registry” bricks or reference models?

# EG: conversation problem 1

## – what is a service!

### E-Framework concept

- Service Genre
- Service Expression
- Service Implementation
- Service Instance / Deployed service

### FRBR analogy

- Work
- Expression
- Manifestation
- Item

## For more information:

- [www.e-framework.org](http://www.e-framework.org) (interim site)
- [www.elframework.org](http://www.elframework.org)
- [www.rubric.org](http://www.rubric.org)
- [www.jisc.ac.uk](http://www.jisc.ac.uk)

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