

The e-Framework

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- What is the e-Framework?
- Where did it come from?
- How is it used? What benefits?
- What risks?
- Future partnerships?
- Where are we now?
- and What next?

What is the e-Framework?

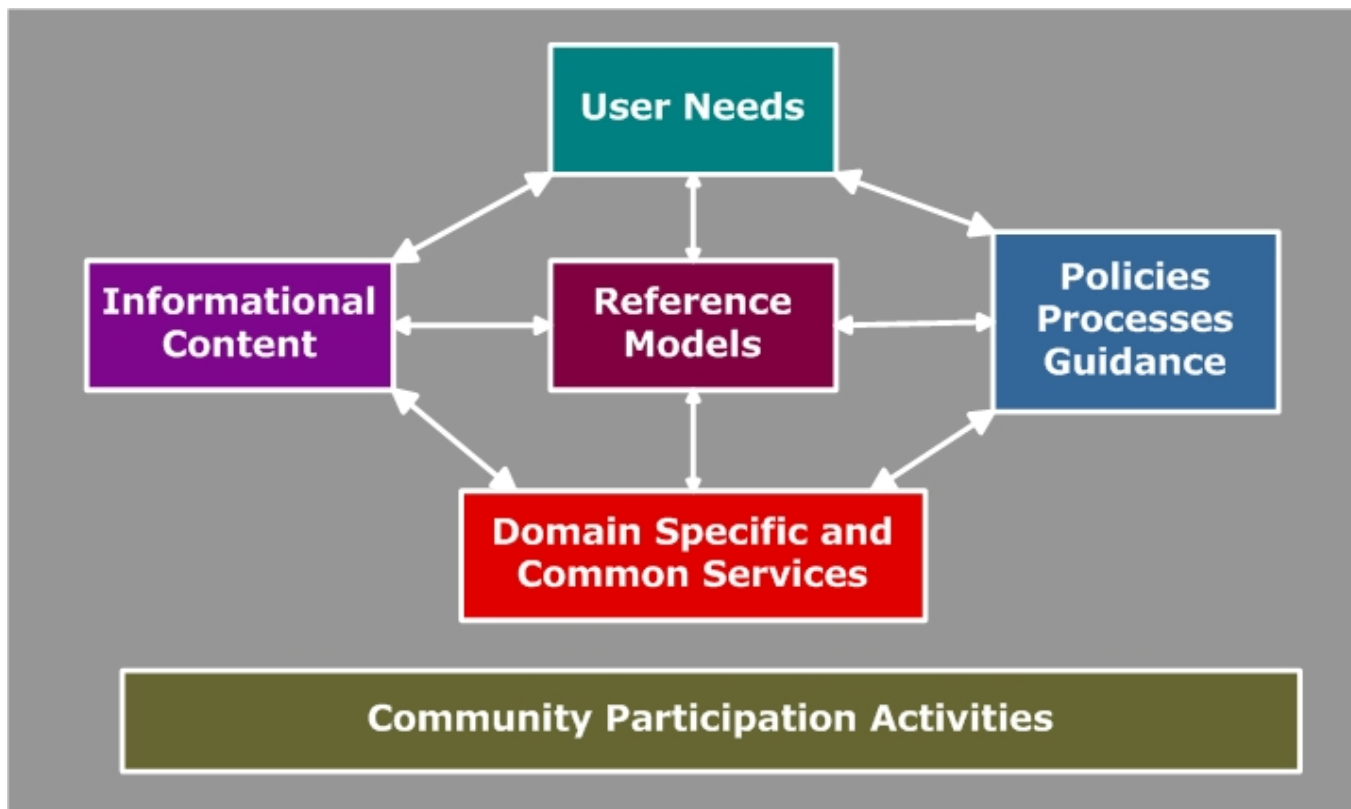
The e-Framework has two main parts:

1. A Set of Reference Models
2. A Set of Services

but it will also include:

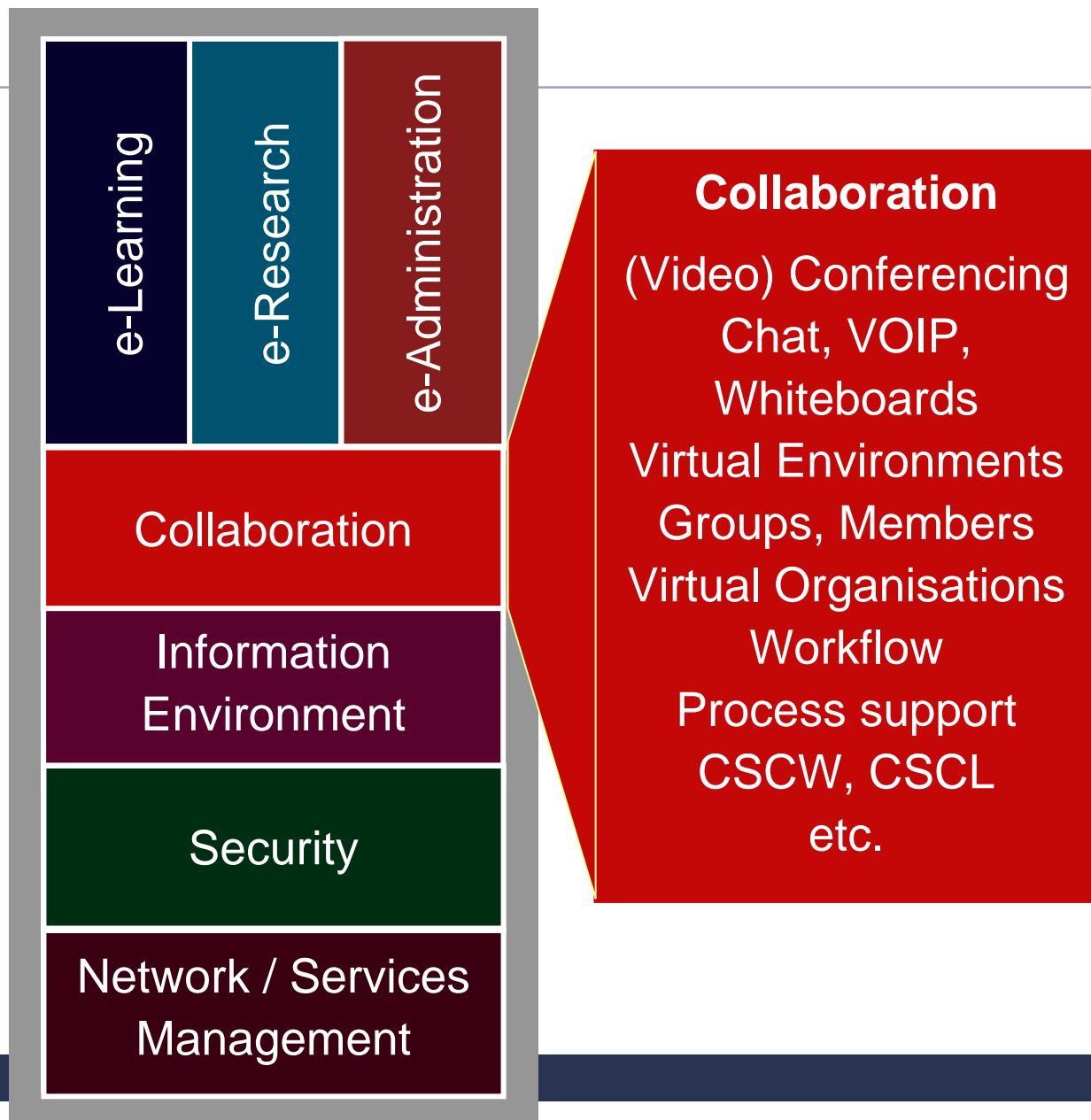
3. Guidance on:
 1. Developing Reference Models
 2. How to factor and define Services
 3. How to deploy Reference Models & Services

How parts of the e-Framework fit together

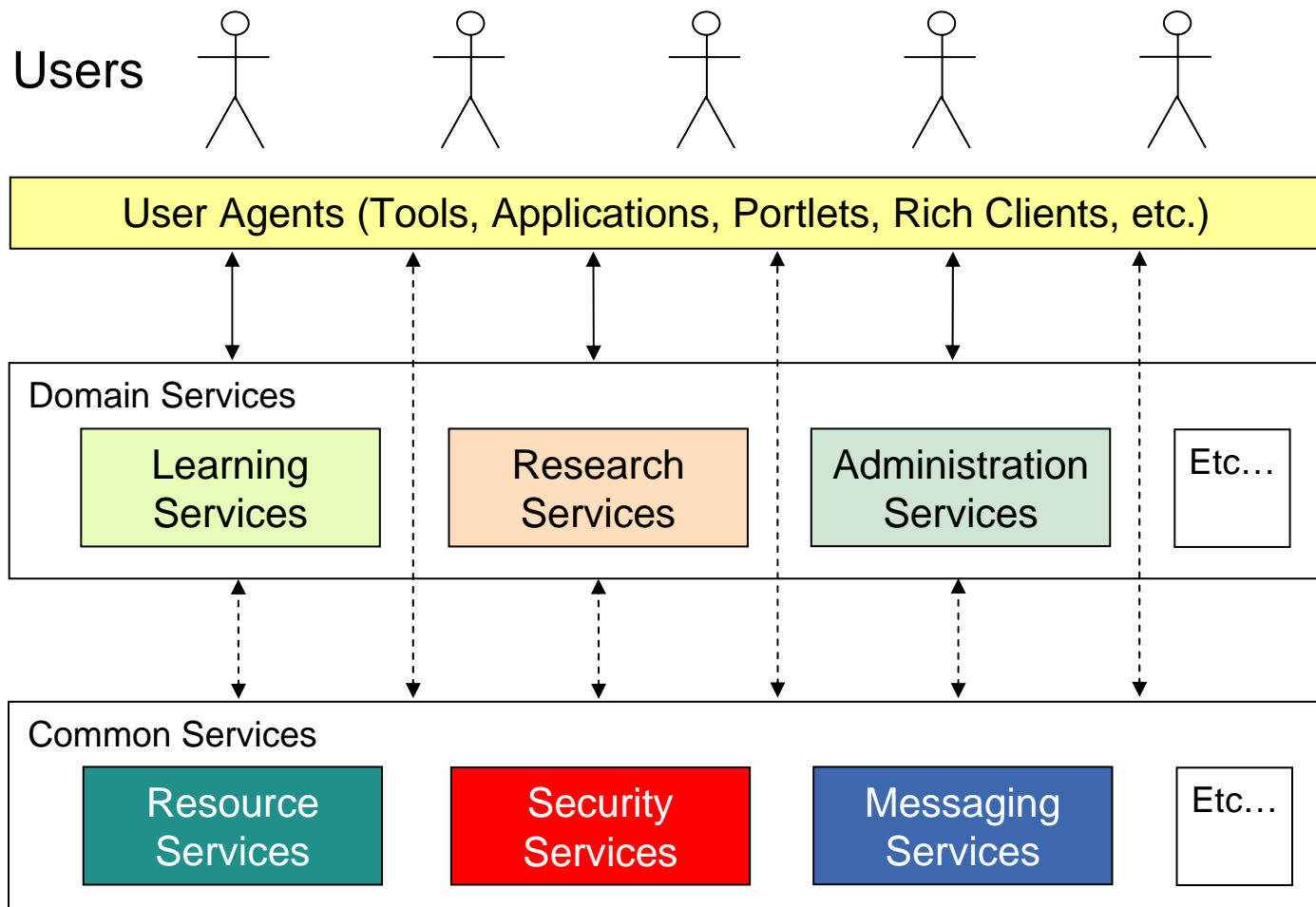


- User needs drive the e-Framework
- Its content depends on Community participation
- Policies, processes & Guidance inform creation,

- More classifications are planned that are important to e-Framework Users
- Expect to use these to tag both the reference models and the service specifications/standards
- They, in turn, will contain references to:
relevant software tools, apps & service implementations,
and to associated Partners' Development activities.
- A set of processes for developing and populating its structure and content
- Guidance on developing, contribution & effective use



Users, User Agents and Services



Lightweight User Tools, Applications, Portlets, etc.
 call on domain specific services, such as Learning, Teaching or Research,
 and either through them, or directly, they call on Common Services

Show only components with: [projects](#) , [specifications](#) , [forum activity](#) [[Show All](#)]

Sample User Agents

Assignment marking tool	Authoring applications	Library System	Portal
Student Enrolment Portlet	Timetabling	VLE / LMS	

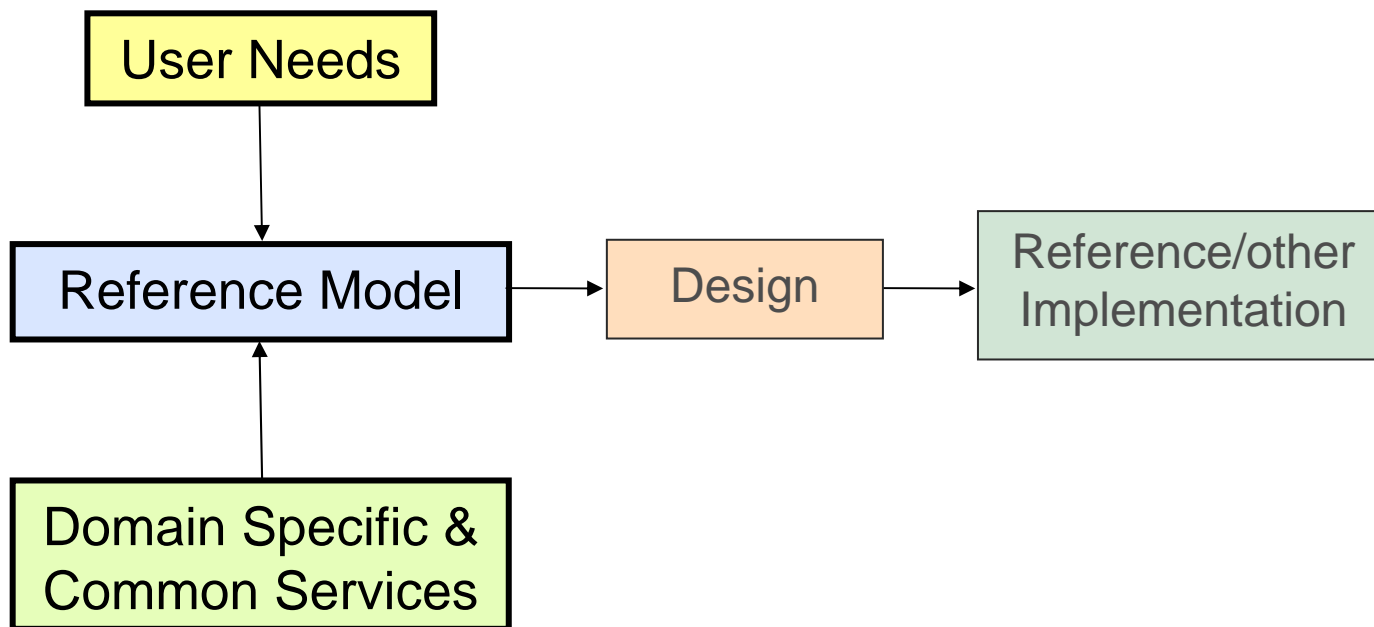
Learning Domain Services

Activity Author	Activity Management	Assessment	Competency
Course Management	Course Validation	Curriculum	Grading
Learning Flow	Marking	Personal Development	Quality Assurance
Reporting	Resource List	Sequencing	Tracking
ePortfolio			

Common Services

AV conferencing	Alert	Archiving	Authentication
Authorisation	Calendar	Chat	Content Management
Context	DRM	E-mail management	Federated Search
Filing	Format Conversion	Forum	Group
Harvesting	Identifier	Logging	Mapping
Member	Messaging	Metadata Management	Metadata Schema Registry
Packaging	Person	Presence	Rating / Annotation
Resolver	Role	Rules	Scheduling
Search	Service Registry	Terminology	User Preferences
Whiteboard	Workflow		

- The collection of Services factors functions.
- Each Service area contains:
 - A definition of the Serviceand links to:
 - The Interface Specification/s
 - Web Service toolkits (client and service adapters)
 - Service Implementations
 - Reference Models that use the Service
 - Case studies that use the Service
 - Projects, active & completed, that use the Service



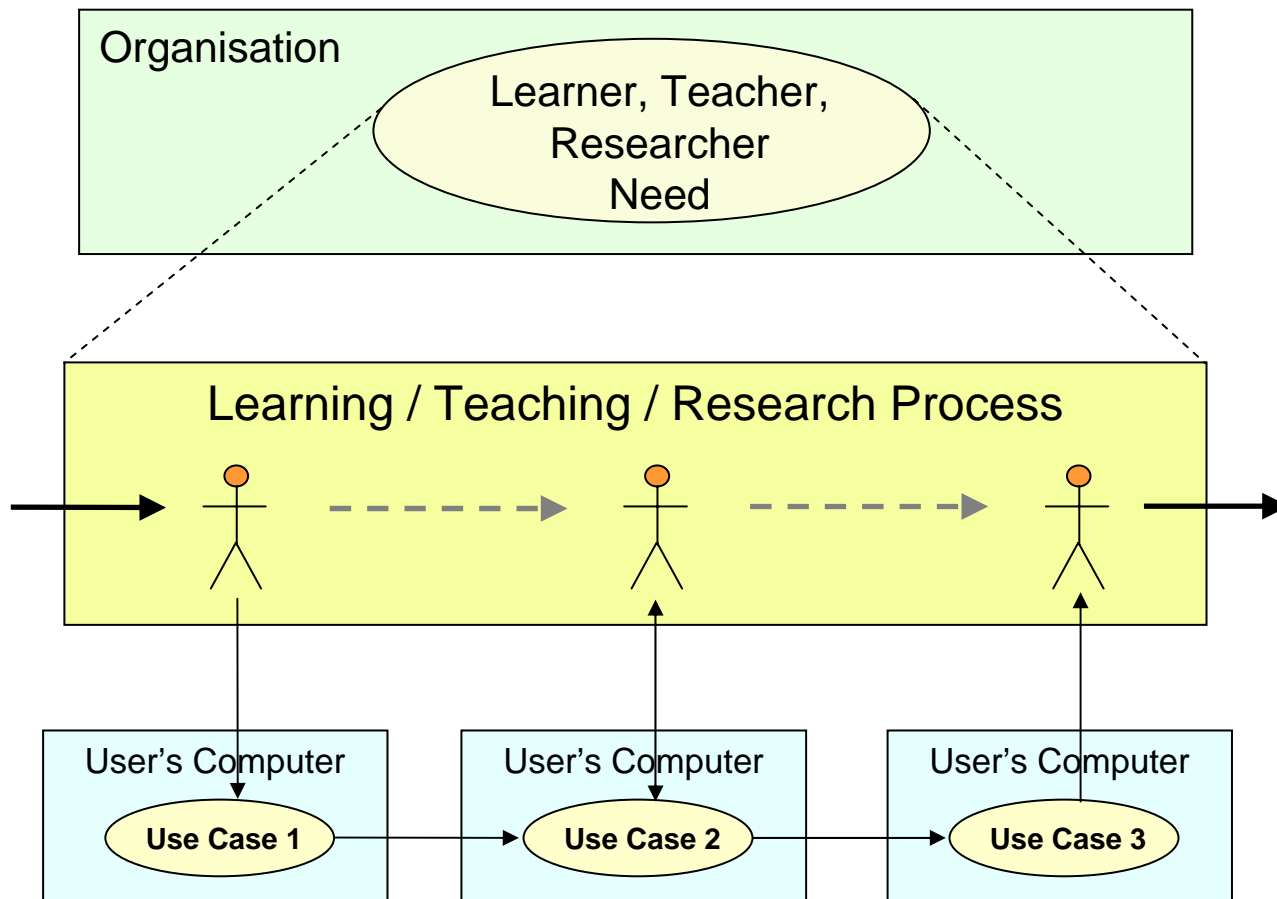
A Reference Model shows how a set of Services are combined to meet a common User Need.

A Reference Model then forms the basis for a Reference / other Implementation.

Reference Models form a Bridge between Users' Needs and the Services

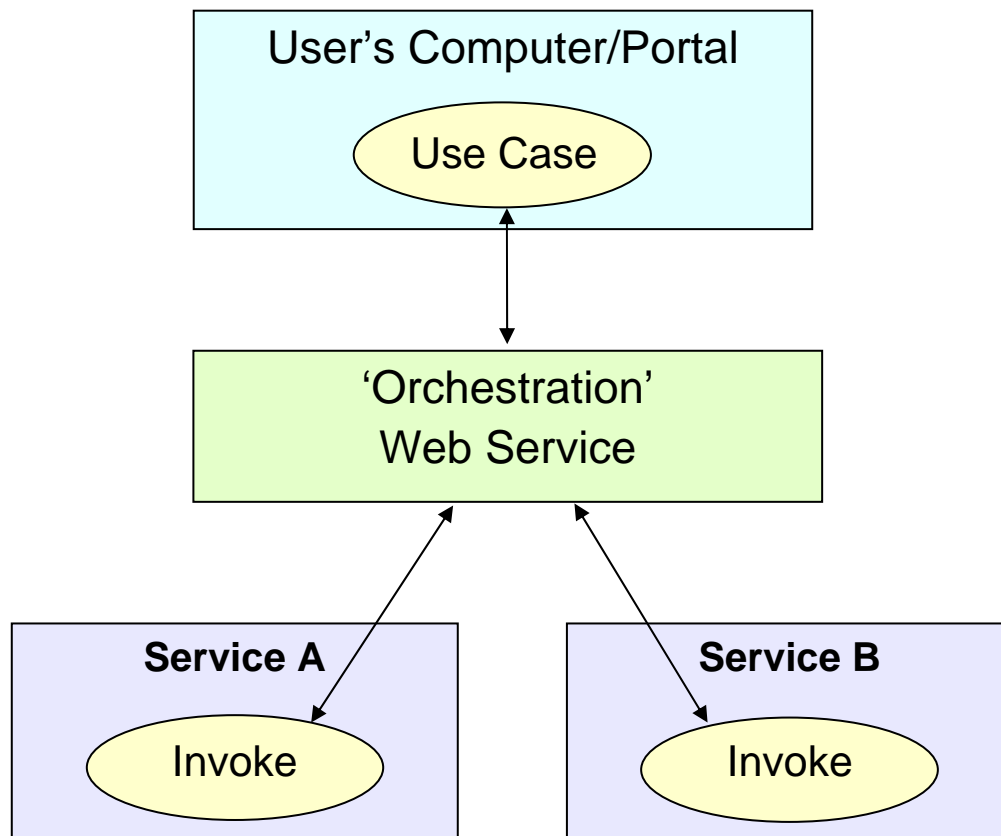
Developed with Communities:

- e-Assessment
- e-Portfolio
- Learning Activity Design and Runtime
- Course Description
- Course Validation
- Personal Learning Environment



Many tasks require several people to work together in a workflow.

In such cases Reference Models set this out, together with with the service processes, to show how people and computers work together to accomplish the task.



Typically User Tasks need to call on several services.

'Orchestration' standards are emerging for creating 'composite services'.

Reference Models set out:

1. the learning, teaching or research problem addressed
2. a set of tasks needed to fulfil this
3. the human and computer based workflows
4. the agents, applications and/or tools used
5. the data flows and operations involved
6. the services that will be called on
 - their ‘orchestration’ (how several serve a single user)
 - and their ‘choreography’ (how several participants carry out common workflows using services)
 - the service interface specifications and any profiles (variations) to be used, with references to the definitions of the services used

“Reference Models” are evolving:

1. The workflow / process models and service map to **‘Implementation Blueprints’** (as defined in the OASIS SOA Reference Model)
We may adopt this terminology
2. JISC Projects are working on higher level **‘Domain Models’** (or ‘domain maps’) provide context and are developed with/by the communities involved:
 - Stakeholders, goals and tasks
 - Domain conceptual models – objects and relationships
 - Distributed system architectures
 - Provide the common context for workflow/process models

Where did it come from?

- eBusiness has evolved:
 - Service Oriented Architectures
 - Web Services
 - adopted by IBM, Microsoft, Sun, Oracle, SAP, etc.
- eScience has evolved:
 - The GRID / Open Grid Service Architecture
 - Web Services
- eLearning has evolved:
 - MIT: the OKI service architecture and OSIDs
 - Carnegie Mellon/ADL: A layered service architecture
 - Sun: eLearning architecture
 - IMS: The Abstract Framework
- The e-Framework builds on and integrates these

By Institutions:

- To better align infrastructure with strategy
- To provide a more adaptive, evolving infrastructure
- To ease communication with other organisations
- To more easily absorb the many new systems being developed for its core activities:
 - Learning & Teaching
 - Research
- To integrate & build on existing systems & increase their value
- To implement incrementally by focusing first on the most pressing needs
- To speed up implementation and ROI.

By Developers:

Reference Models

- To better understand customer domains
- To better understand user requirements
- To engage directly with practitioner communities

Services

- Locate appropriate service specifications
- Locate service use cases
- Locate service reference implementations
- Locate current implementations
- Participate in developing service demonstrators

By the JISC (and its funder partners):

- As a planning tool
 - What has and hasn't been done
 - Who is doing what
 - What next: co-ordinate and/or collaborate
- To provide coherence across development efforts
- To enable developments to be used more widely
- To enable new software to build on and reuse old
- To lower the costs of apps, when services in place
- To enable incremental development
- Enable priorities to be addressed more rapidly
- Allow flexibility in future development

- It's too big a task for JISC
 - Seek partnership with others to implement
- Won't get agreement on open service standards
 - Work with international consortia and standards bodies
- A monolithic approach
 - Incremental implementation allows switching at any time
 - Allows diversity within the approach
 - Doesn't dictate what should be developed, only how
- It's another IT fashion
 - This is the first time all major players have agreed on a common approach (WS & SOA) to integration across platforms in response to customer demand
 - Suppliers to the JISC community accept it
 - Builds on Web specifications which are relatively stable

Impact on JISC Programmes

- Greater community participation in:
 - Articulating needs
 - The development of Reference Models
 - The development of software
 - The development of specifications and standards
- Greater adherence and contribution to specifications and standards by projects
- Greater ability to build on earlier projects, thus delivering more for the same funding
- Increased communication across projects
- More useful and sustainable outcomes addressing identified but unmet needs

Engage partners, OS & commercial developers in the tasks of implementing & adopting the Framework

- Such a large task needs partners
- Other Funding Bodies with similar focus
- Standards Implementation Groups
- OS & Commercial developers, who can:
 - Participate in domain community meetings
 - Participate in development of prototype specs
 - Participate in open source reference adapters
 - Participate in plugfests
 - Participate in demonstrators & early adopter piloting
 - Support roll out & wider adoption

- Established e-F Partnership Organisation with DEST (Dept for Education, Skills & Training) Australia
- Have Reference Models nearing completion
- Have specifications mapped for e-Learning
- Appointed e-Framework Editor
- Setting up Web site
- Established pool of consultants to support roll out
- New Zealand joining, SURF in Holland also, Industry Canada has always been a sleeping partner. Microsoft, Sun, QuestionMark have expressed interest
- UKOLN updating a Standards catalogue as a foundation

- Currently completing detailed definition of structure/formats for Services & Ref models
- Implement web support for change procedures
- Initial population of Web site
- Implement support for different classifications and corresponding views for different users
- Launch Web site, Summer 2006
- Will encourage contributions
- Will open up for wider Membership
- Meeting with Industry, Summer 2006
- Industry Launch of e-Framework, Autumn 2006

Discussion

www.e-framework.org