

# E-Learning and Libraries: Interoperability Update

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# Presentation Goals

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- Evolution of e-learning
- Evolution of repositories services
- Library services – e-learning interactions
- Developing and e-learning framework
- Positioning repositories services
- Strategic directions



# Evolution of the E-Learning Industry

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- E-Learning still in cottage industry phase
- Pedagogy and technology in uneasy alliance
- No coherent view of technical infrastructure requirements
- Management of composite learning objects a major challenge
- Inbuilt assumptions about re-use and re-purposing
- Highly distributed ownership models



# Evolution of the E-Learning Industry (cont.)

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- Much reinventing of technical wheels to deal with repository management and services
- Considerable barriers between E-Learning and library communities
- Few large scale implementations
- No agreement on institutional stewardship model for managing digital learning content and activities



# Evolution of Repository Services

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- Multiple service domains struggling to formulate their respective views of repository services
- Persistent misunderstanding of the differences between internal repository management, native interfaces and repository services
- Huge increase in digital assets that require some form of management
- Strong cultural and political barriers
- No agreement on required levels of interoperability



# Evolution of Repository Services (cont.)

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- A plethora of approaches and tools for service provision
- An incomplete understanding of the lifecycle implications for managing digital assets
- Insufficient knowledge of how users are creating their own information environments
- Increasing uncertainty about the concept of publishing in the shared digital world
- Many challenges to intellectual property rights



# Digital Libraries/E-Learning Interactions

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An IMS/CNI White Paper was published in May 2004.

Functional requirements already identified include:

- The embedding of library resources in the learning management systems
- The ability to integrate and display in a variety of information windows
- Aggregated access to content in any given learning context
- Integration of third-part commercial information services



# Digital Libraries/E-Learning Interactions (cont.)

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- Customised portal facilities for storing personal preferences
- Embedding bibliographic tools to permit ease of search and completion of references
- Easy access to virtual reference services at point of need
- Embedded training modules to assist in information seeking activities
- Access to tools which will render and present content in preferred formats



# Mapping a Service Domain: An E-Learning Framework

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- Collaborative venture between JISC, Industry Canada and DEST (Australia)
- Testing usefulness of adopting a common E-Learning framework
- Adopting a service oriented approach to building a framework
- Using case studies to inform the framework
- Shedding light on repository infrastructure and service requirements

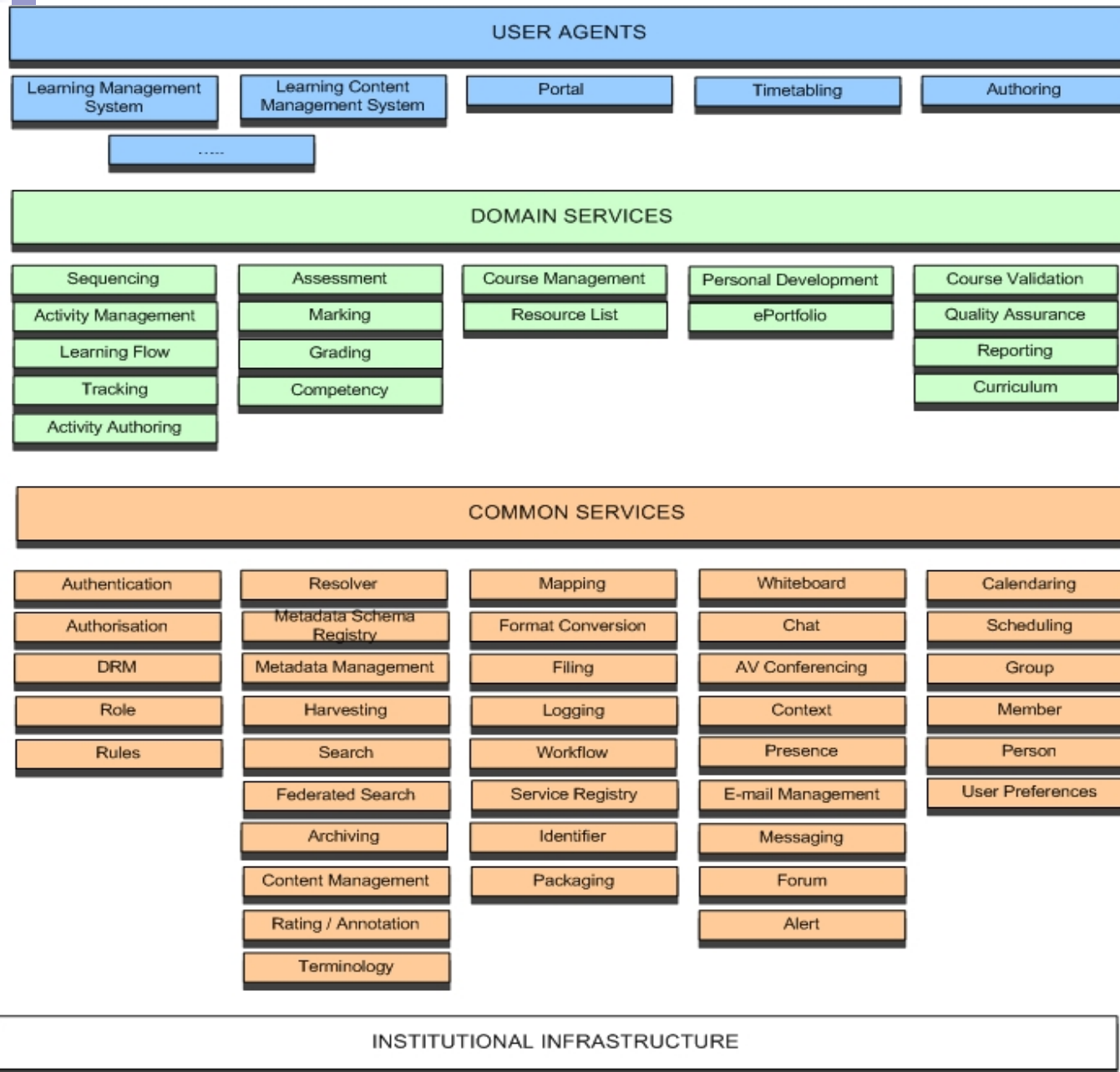


# Why an E-Learning Framework

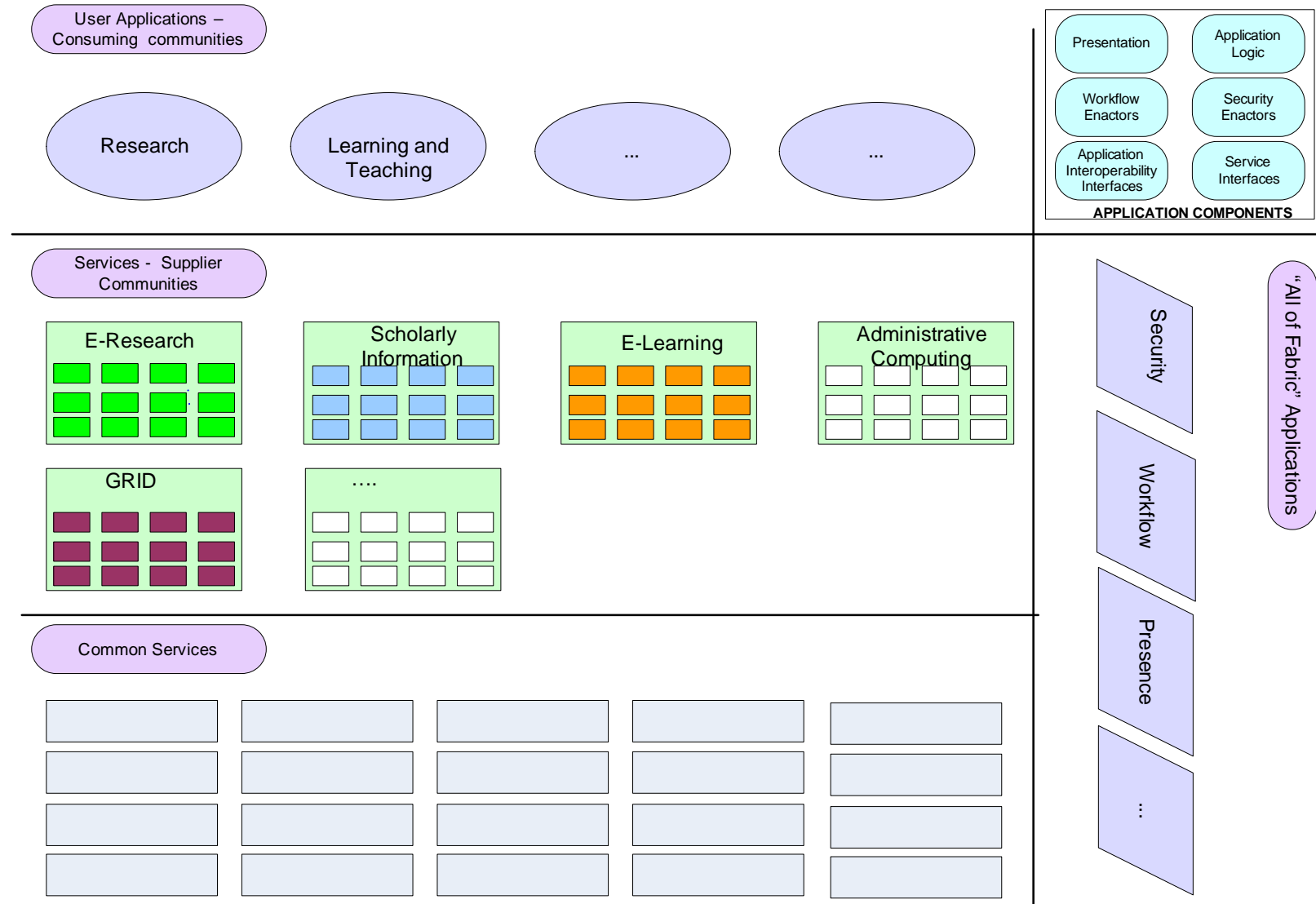
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- Defines the broad set of services required to support the business of a community or a set of communities
- Facilitates the integration of a variety of technical solutions through agreement on services definitions, behaviours, data models and protocols
- Provides a platform for national planning and international collaboration

# The Evolving E-Learning Framework



# The bigger picture:





# Service Domains: A Higher Education View

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- At least four major service domains exist
  - E-Research
  - Scholarly Information
  - E-Learning
  - Administrative Computing
- All have particular views of infrastructure requirements
- Significant overlaps in terms of infrastructure development



# Service Domains: A Higher Education View (cont.)

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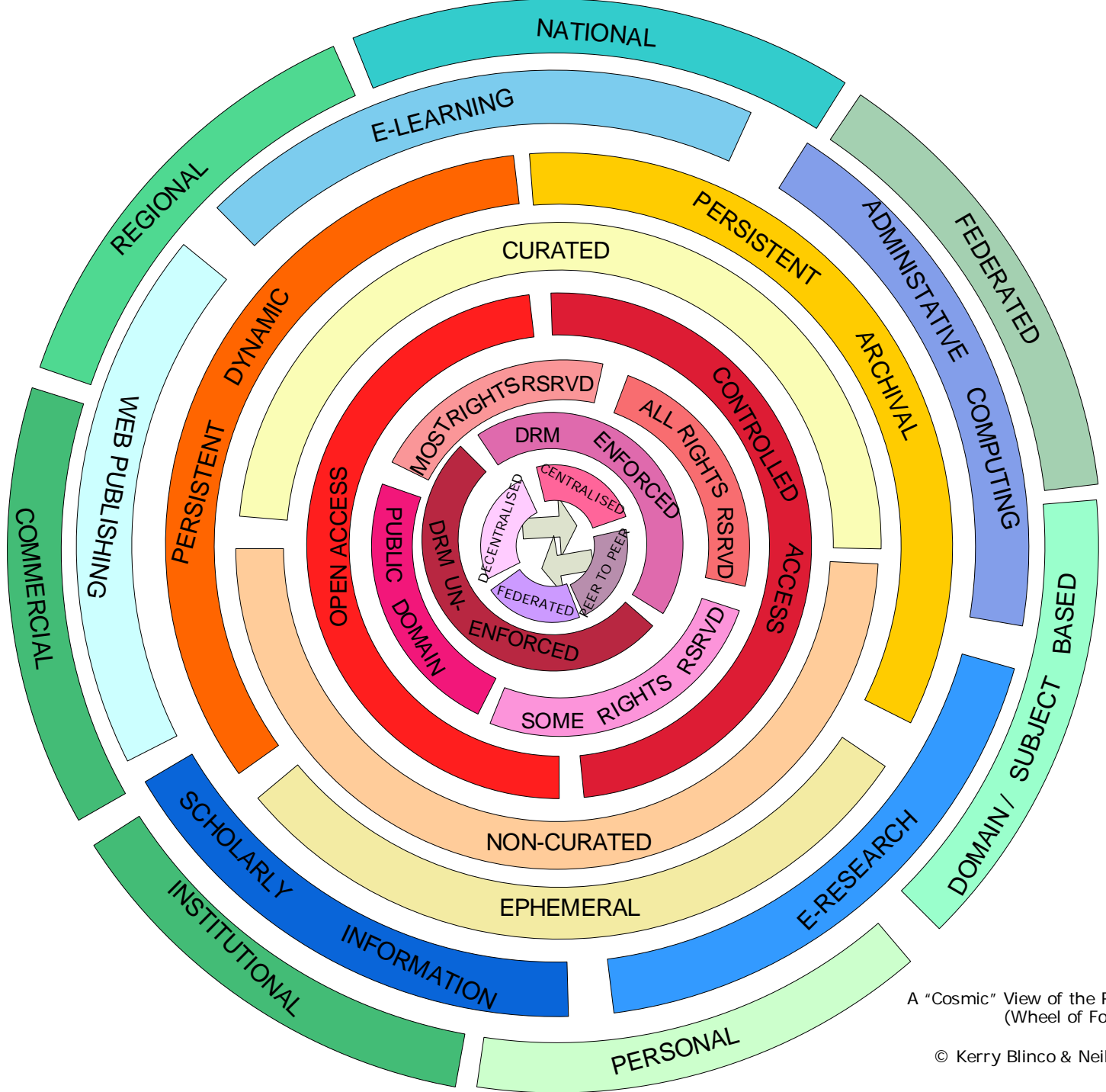
- No cohesion at the institutional level
- Middleware a label for a lot of unresolved issues
- Growing realisation that there may be scope for shared technical developments
- Funding agencies looking for concerted development strategies across service domains



# Convergence of Service Domains

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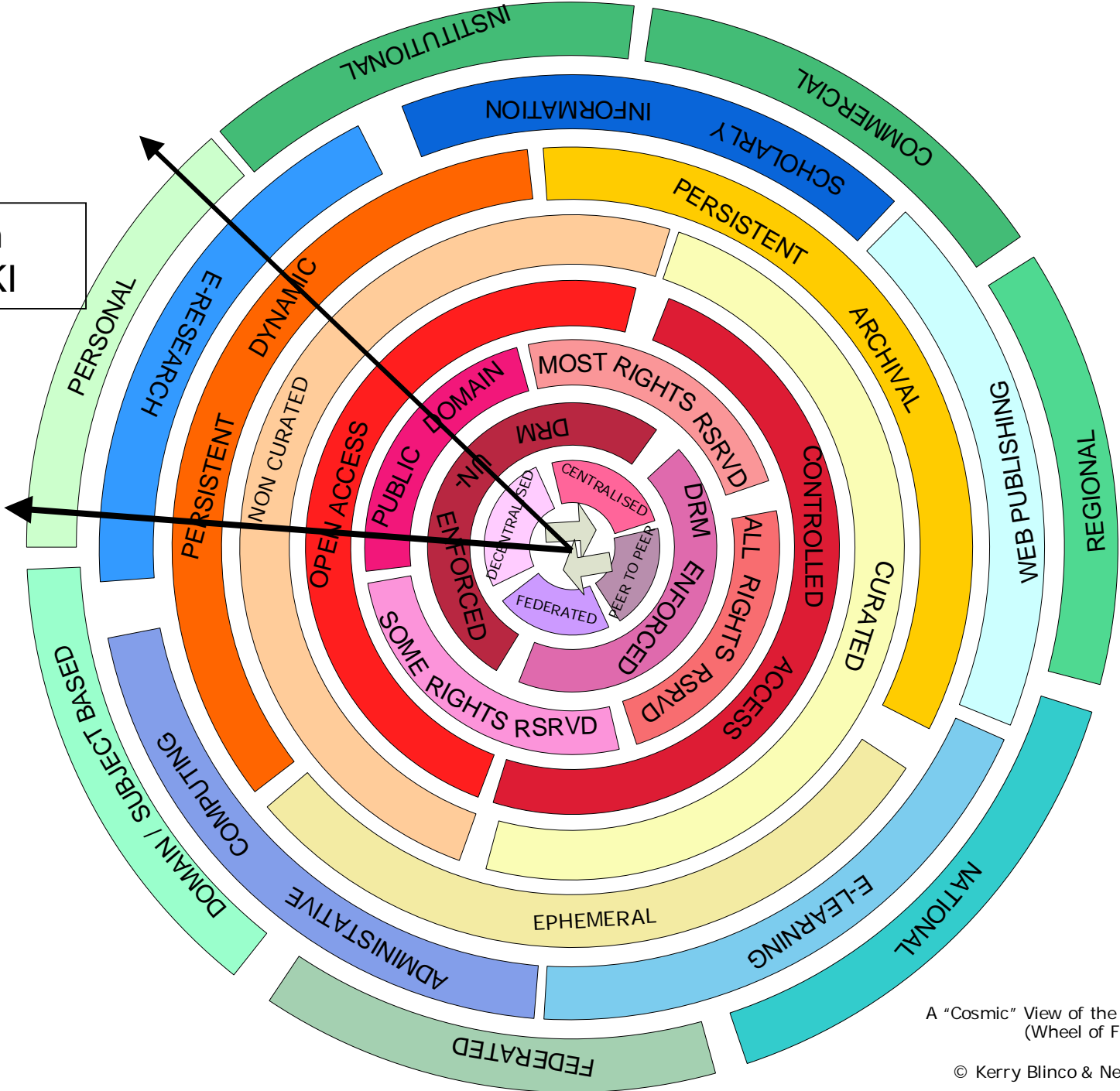
- Can a service oriented approach to frameworks and architectures help to identify common services?
- What mechanisms are necessary to facilitate shared technical development across multiple domains?
- What would the repository common services look like?
- Given that libraries serve all domains, how should they position their systems and services?
- How do existing information environment architectures relate to this emerging debate?



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



Research team WIKI



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



# Observations

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- Many different permutations of potential contexts are rarely articulated in a coherent fashion
- Some tension between managed and unmanaged environments
- No common methodologies as yet to deal with multiple permutations of context



# Strategic Directions

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- Development of a service oriented conceptual model of cross domain repository services
- Reaching a common understanding within and across domains of service interfaces and required levels of interoperability
- Positioning of Repository Services in a range of contexts and implementations



# Strategic Directions (cont.)

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- Reaching a better understanding of the realities of digital rights management
- Agreement of mechanisms for international collaboration within and across service domains
- Demonstrators that facilitate innovation in practical context