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NLH Enterprise Architecture

- NLH has established a Design Authority. The role of the Design Authority Group (DAG) will be to provide governance and leadership on the integration of library & knowledge systems
- Membership of the Design Authority is drawn from members of LKDN regionally, and representatives of HE/FE, with corresponding members from the territories and NHSDirect Online and other agencies
- The principle output will be a documented Enterprise Architecture and web accessible metadata schema registry, collections register and service bindings

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Why Enterprise Architecture?

- Information exists in silos – with proprietary implementations meeting a single business process
- Integration is difficult and superficial
- Technology does not add new value
- Provides a unified – business supporting – platform

Why Enterprise Architecture

- A lack of fit between work requirements and available information technology
- ‘Silo-isation’ of data, information and knowledge
- Difficulty in making strategic IT investment decisions
- Lack of technical agility to respond to new business requirements and opportunities

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Library 1.0

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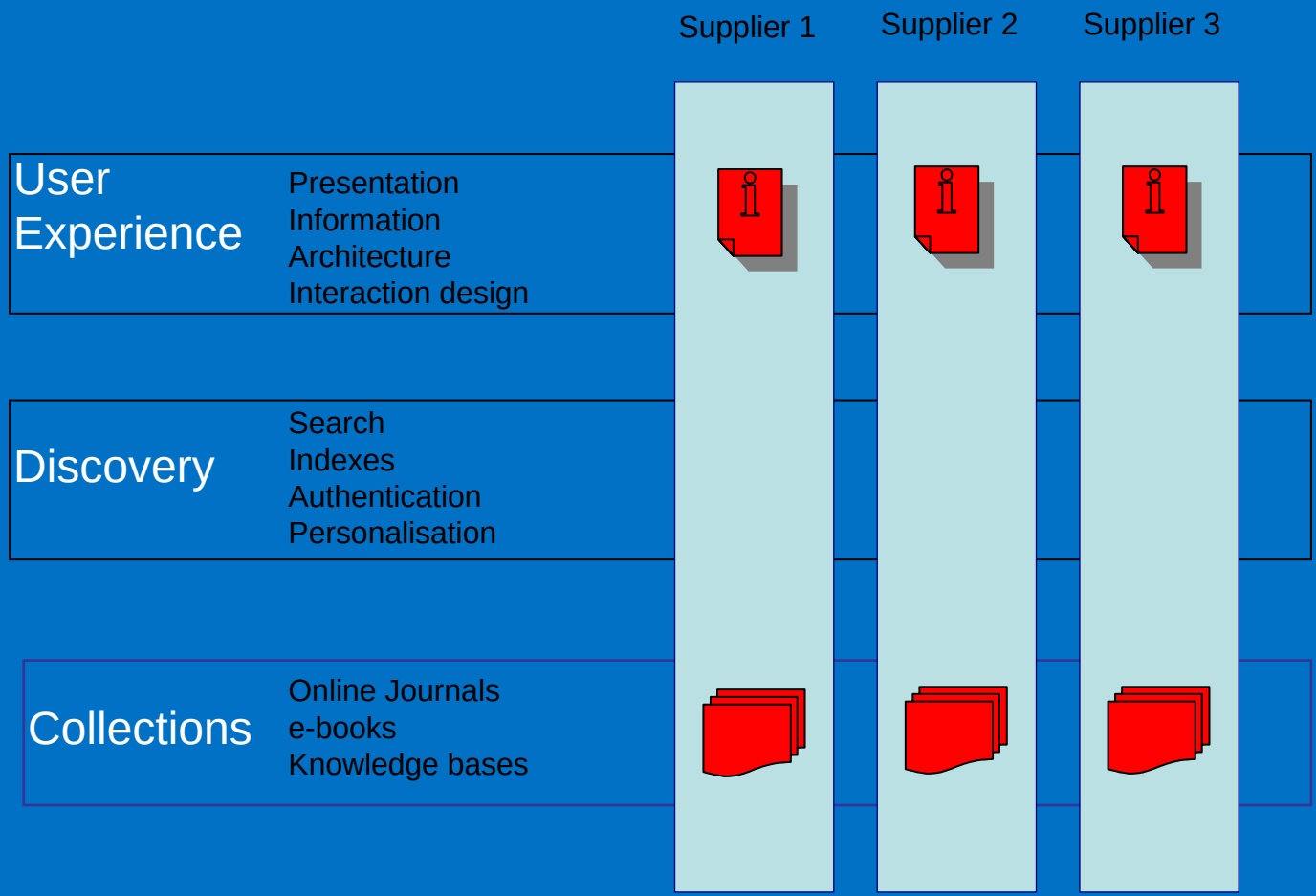

Users need to use multiple interfaces to find knowledge

Services are proprietary eg: search, logon, personalisation

Integration is superficial and difficult to achieve

Content is locked in silos

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Use Case 1: Library Everywhere

Gareth, is a GP in Nottingham, and he has been sent a paper on implementation of NICE guidance on hypertension within primary care, highlighting deficiencies in blood pressure testing within GP practices.

The paper contains a reference to a BMJ publication on an RCT which he would like to read in more detail. Highlighting the reference in Word, he right clicks on the text and drops it onto his My Library Toolbar. The NLH Research Pane opens on his desktop and he can see that the progress monitor shows it is “searching NLH Citation Resolver” for a result.

A few seconds later some results appear in his Research Pane showing that there is a link to the full text of the paper available from the NHS journal collection. He clicks the link and the IE browser opens. He is asked for the NLH Access password, whereupon he is taken to the journal article.

Gareth wants to raise this at his next practice medical audit committee meeting, so he uses the Add to My Links button at the top of the article to send it to his NLH My Links section, so he can refer to it later.

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Use Case 2: Crossing the divide

Priscilla has just returned from a long day at college on her Occupational Health day release course. In the evening, she logs onto the University VLE with her student password.

She notes that the mark for her last tutorial is available for viewing and that there is a message from her MSc Tutor about her search strategy for her dissertation on "Work Station RSI Assessment Effectiveness". Priscilla has been building a bibliography to support her research, so she turns to the My NLH folder on her VLE to check on her NLH Knowledge Update.

She finds one article from EMCARE on an Australian evaluation, so she exports it to her Endnote Dissertation File. She notes that the other 15 new items are not really relevant, so she clicks on the "Edit Update" button to take her to her NLH website and into her My Library page. Once there, she sees her VLE login has been recognised and she is welcomed as nhspjones001. She uses the "modify this" button and enters 2 new keywords on "tendonitis", and "computer mice", before saving her Update changes and returning to the college VLE.

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Library 2.0

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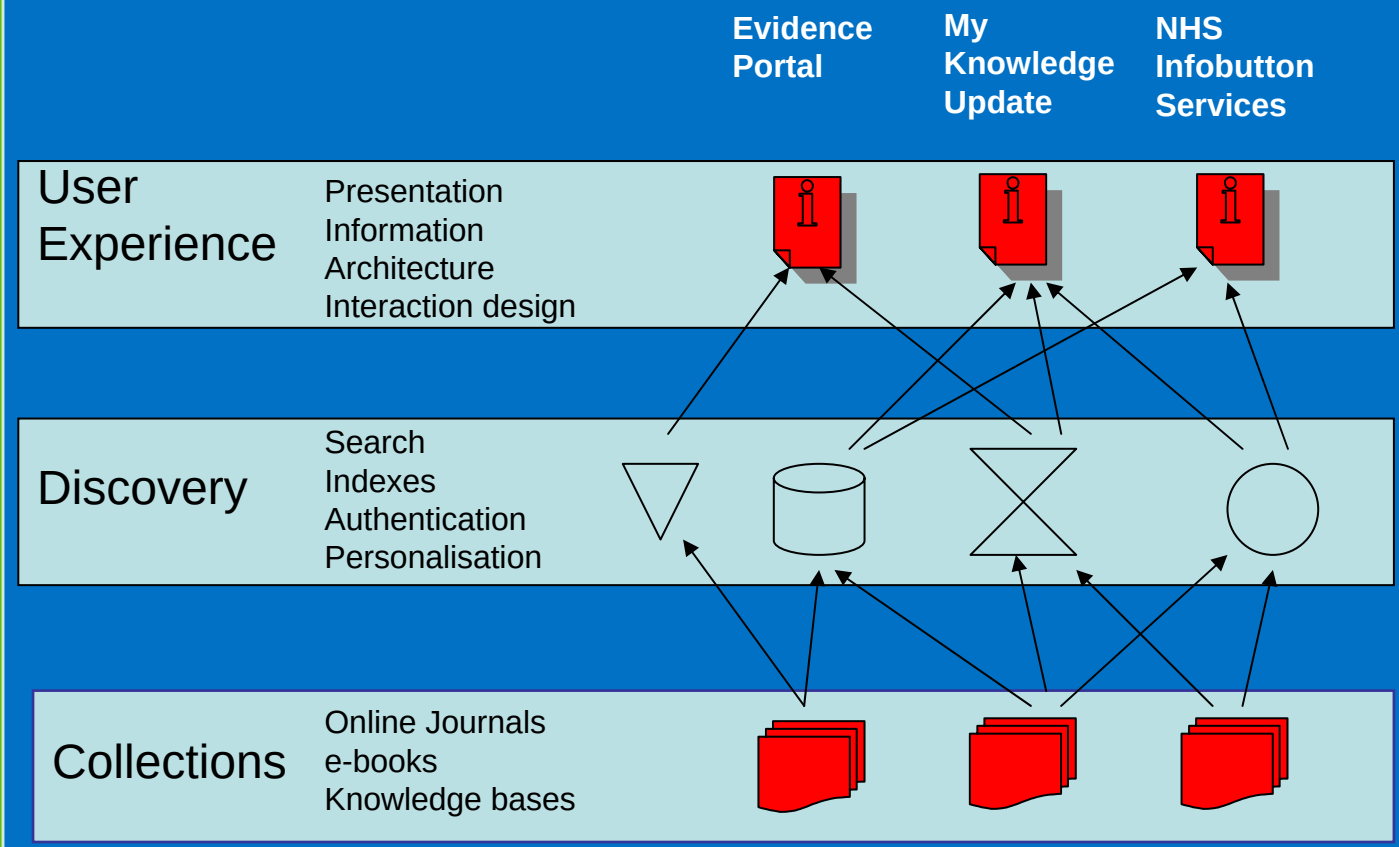

NHS own and build a common user experience

Discovery services are open, standards based, dis-aggregated and can be re-purposed

Collections are virtual, and can be re-combined for multiple audiences

What shape will the EA take?

At the core of the NHS Library enterprise architecture will be a set of framework models, based around the core library business processes, together with some underpinning frameworks documenting standards for data and collections.

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A Framework describes…

A definition of Business Requirement and Business Processes
A definition of what must be achieved for the user. This may include User personas and Scenarios.

Use Cases and work flows
In UML, use cases describe each business process in terms of the processes involved and the interactions between systems

Identification of Abstract Services
A description of is functional scope, a model of behaviour and data requirements

Service Description (bindings)

Provides the detailed specification to implement an abstract service and may include: metadata application definitions, data schemas, API interface specifications and protocols, messaging standards and WSDL files

Business Change Issues
Identifies Issues and Risks which need to be addressed and overcome in migration from an “as is” model to a “to be” model.

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Candidate Frameworks

- **Discovery to Delivery**
  Describes the user journey from user entering a system to delivery of end documents via search and resolution services or document delivery
- **Query Answering**
  Describes how users will enter a query system and receive answers. Query answering may cover clinical query answering or reference enquiries and may include user generated answers.
- **Current Awareness and alerting**
  Describes the architecture for the generation of knowledge update, news and alert services, and how users can discover and subscribe to them.
- **Collections architecture**
  Describes a logical, ie virtual, aggregation of documents, independent of source which is available to an interface. A collection may consist of for example, Systematic Reviews, Medicines information, Information for patients, a collection of quality assessed journals, or community of practice reviewed collection of knowledge feeds.
- **Conceptual Information Models**
  Describes aspects of under-pinning metadata frameworks, application frameworks, encoding schemas (controlled vocabularies) and address resolution services.

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Abstract Services

Service Registry

Service registry provides all metadata about services available and the collections available through those services or the possible translations.

Preferences Service

Returns profile of user and their institutions so that choices can be presented. Currently My Library

Terminology Services

Loads the vocabularies used to drive the collection search/browse interfaces

Search/Browse Service

Accepts structured queries on collection(s) and allows user to navigate results.

Link resolution Service

Takes openURLs and resolves them to the URIs of the appropriate services

Identifer Resolution Service

Takes URIs and returns the physical location of the resource

Index Service

Returns the publicly available summary details on the results

Document Delivery Service

Allows user to select delivery source and options

Identity Management and Authentication

Provide a user registration and login service returning unique IDs and attributes about a user which can be used to authenticate access to gated resources

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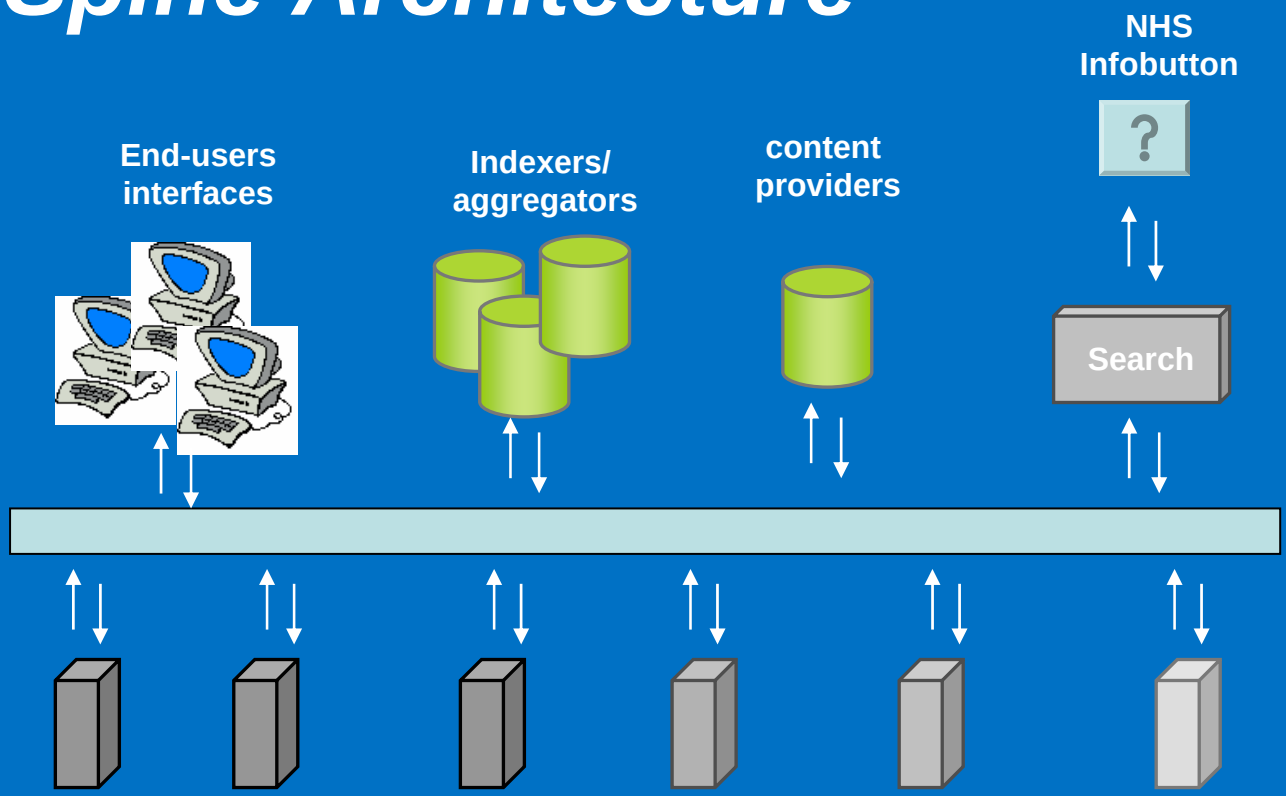
A Spine Architecture



After - Andy Powell (UKOLN, University of Bath), 2005

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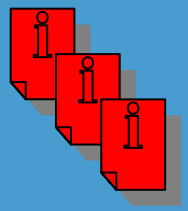
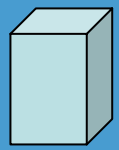


Web portals

Google Health



OAI Search

Infobutton Search

Presentation/ Discovery

SOAP web services

Data Access Layer / Search

Data Access Layer

NLH Collections

RMS

Taxonomies and metadata

Value - add

OAI harvester

Cochrane

DARE

CKS

Et al

Information Providers