From Provider to Portal - a chain of interoperability

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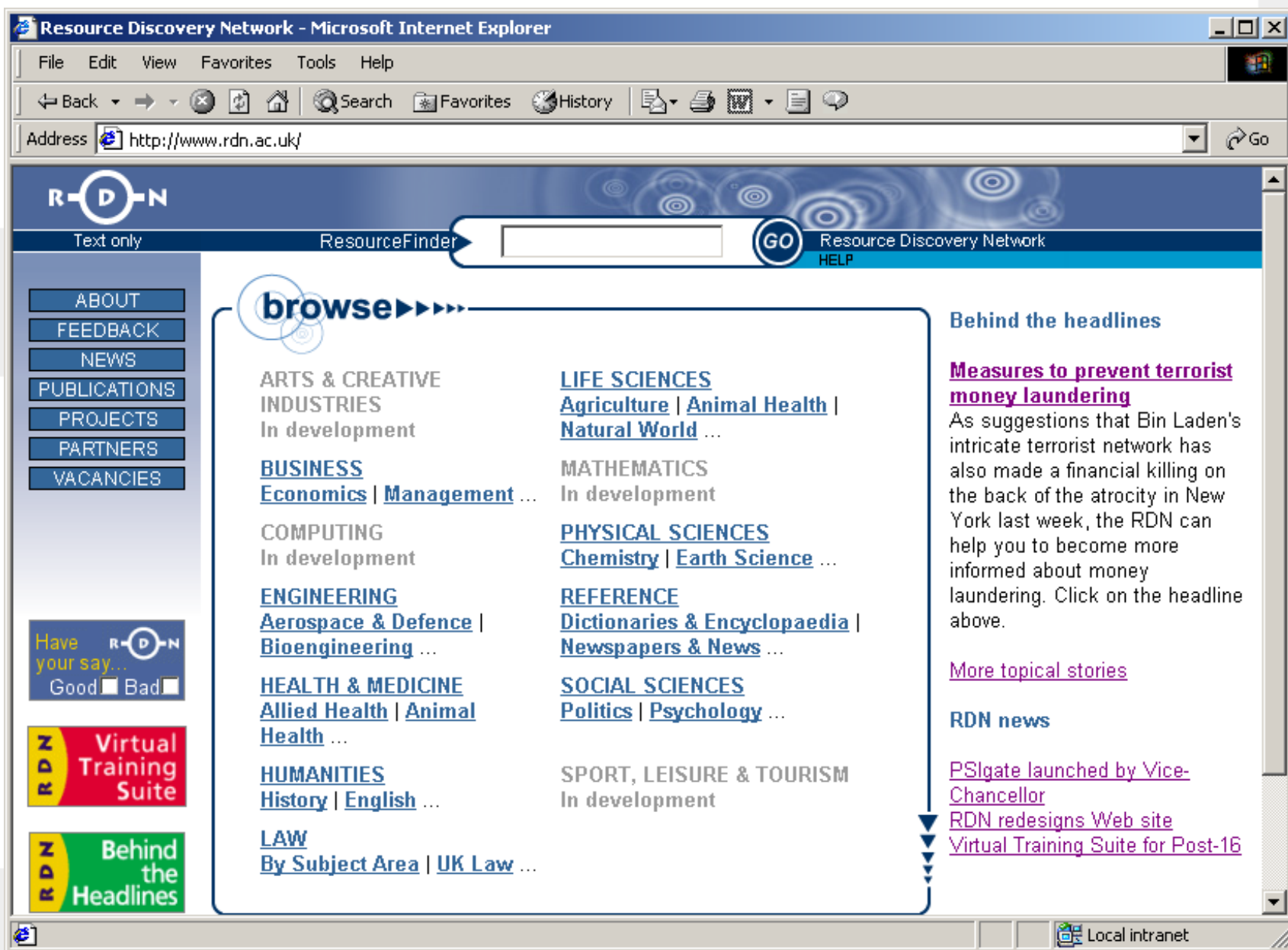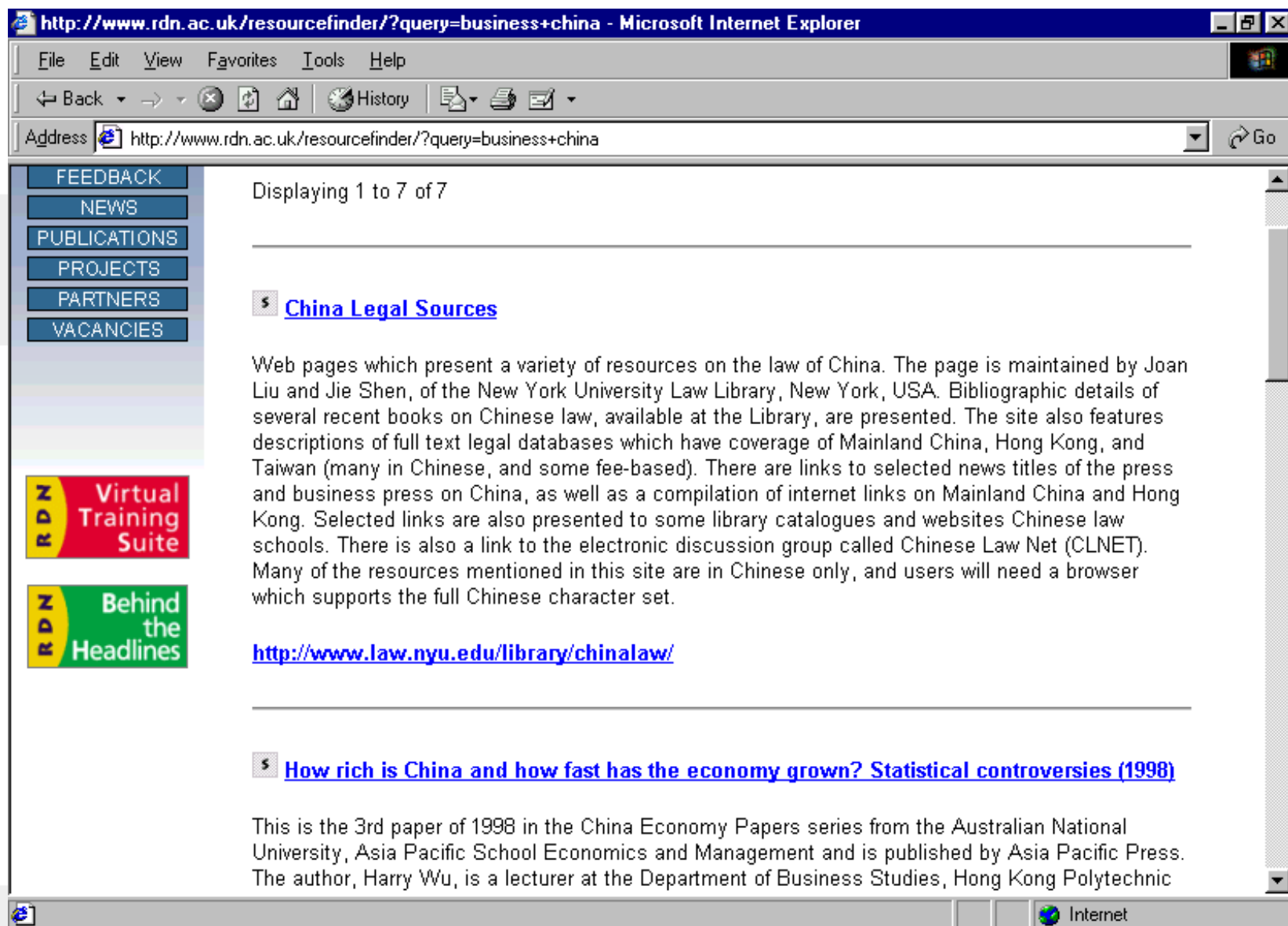
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Contents

- current digital library technical standards
  - way those standards are being combined to support initiatives such as the UK JISC Information Environment (DNER)
- Web services
- trends in portal developments
- impact on development of digital library services
- not very 'in depth'

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Simple scenario

- consider a lecturer searching for materials for a course module covering the development of business in China

- the aim is to construct a hybrid reading list that can be given to students to support their coursework

- he or she searches for *'business china'* using:
  - the RDN, to discover Internet resources
  - ZETOC, to discover recent journal articles

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File   Edit   View   Favorites   Tools   Help

⇐ Back ▾   →   ⊗ ▣ ⌂   ⊚ History   ▤▾ ▦ ▤ ▾

Address ⊜ http://www.rdn.ac.uk/resourcefinder/?query=business+china   ▾   ⟳Go

FEEDBACK
NEWS
PUBLICATIONS
PROJECTS
PARTNERS
VACANCIES

RDN Virtual Training Suite

RDN Behind the Headlines

Displaying 1 to 7 of 7

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ˢ **China Legal Sources**

Web pages which present a variety of resources on the law of China. The page is maintained by Joan Liu and Jie Shen, of the New York University Law Library, New York, USA. Bibliographic details of several recent books on Chinese law, available at the Library, are presented. The site also features descriptions of full text legal databases which have coverage of Mainland China, Hong Kong, and Taiwan (many in Chinese, and some fee-based). There are links to selected news titles of the press and business press on China, as well as a compilation of internet links on Mainland China and Hong Kong. Selected links are also presented to some library catalogues and websites Chinese law schools. There is also a link to the electronic discussion group called Chinese Law Net (CLNET). Many of the resources mentioned in this site are in Chinese only, and users will need a browser which supports the full Chinese character set.

http://www.law.nyu.edu/library/chinalaw/

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ˢ **How rich is China and how fast has the economy grown? Statistical controversies (1998)**

This is the 3rd paper of 1998 in the China Economy Papers series from the Australian National University, Asia Pacific School Economics and Management and is published by Asia Pacific Press. The author, Harry Wu, is a lecturer at the Department of Business Studies, Hong Kong Polytechnic

⊜   🌍 Internet

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Issues

- different user interfaces
  - look-and-feel
  - subject classification, metadata usage
- everything is HTML – human-oriented
  - difficult to merge results, e.g. combine into reading lists
  - difficult to build a reading list to pass on to students
- difficult to move from discovering journal article to having copy in hand (or on desktop)
- users need to manually join services together

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UK DNER context...

- 206 collections and counting…
  (Hazel Woodward, e-ICOLC, Helsinki, Nov 2001)
  - Books: 10,000 +
  - Journals: 5,000 +
  - Images: 250,000 +
  - Discovery tools: 50 +
    - A & I databases, COPAC, RDN, …
  - National mapping data & satellite imagery

- plus institutional content (e-prints, library content, learning resources, etc.)

- plus content made available thru projects – 5/99, FAIR, X4L, …

- plus …

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The problem(s)…

- **portal problem**
  - how to provide seamless discovery across multiple content providers
- **appropriate-copy problem**
  - how to provide access to the most appropriate copy of a resource (given access rights, preferences, cost, speed of delivery, etc.)

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The solution…

- an information environment
- framework of machine-oriented services allowing the end-user to
  - **discover**, **access**, **use**, **publish** resources across a range of content providers
- move away from lots of stand-alone Web sites...
- ...towards more coherent whole
- remove need for use to interact with multiple content providers

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JISC Information Env.

- discover
  - finding stuff across multiple content providers
- access
  - streamlining access to appropriate copy
- content providers expose metadata about their content for
  - searching
  - harvesting
  - alerting
- develop services that bring stuff together
  - portals (subject portals, media-specific portals, geospatial portals, institutional portals, VLEs, …)

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Discovery

- technologies that allow providers to disclose metadata to portals
    - searching - Z39.50 (Bath Profile)
    - harvesting - OAI-PMH
    - alerting - RDF Site Summary (RSS)
- fusion services may sit between provider and portal
    - broker (searching)
    - aggregator (harvesting and alerting)

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Access

- in the case of books, journals, journal articles, end-user wants access to the most appropriate copy
- need to join up discovery services with access/delivery services (local library OPAC, ingentaJournals, Amazon, etc.)
- need localised view of available services
- discovery service uses the **OpenURL** to pass metadata about the resource to an 'OpenURL resolver'
- the 'OpenURL resolver' provides pointers to the most appropriate copy of the resource, given:
  - user and inst preferences, cost, access rights, location, etc.

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Shared services

- collection/service description service
  - information about collections (content) and services (protocol) that make that content available

- authentication and authorisation

- resolver services

- user preferences and institutional profiles

- terminology services

- metadata registries

- ...

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JISC Information Env.

Content providers

Shared services

Authentication

Authorisation

Collect'n Desc

Service Desc

Resolver

Inst'n Profile

Broker/Aggregator

Broker/Aggregator

Portal

Portal

Portal

End-user

Provision layer

Fusion layer

Presentation layer

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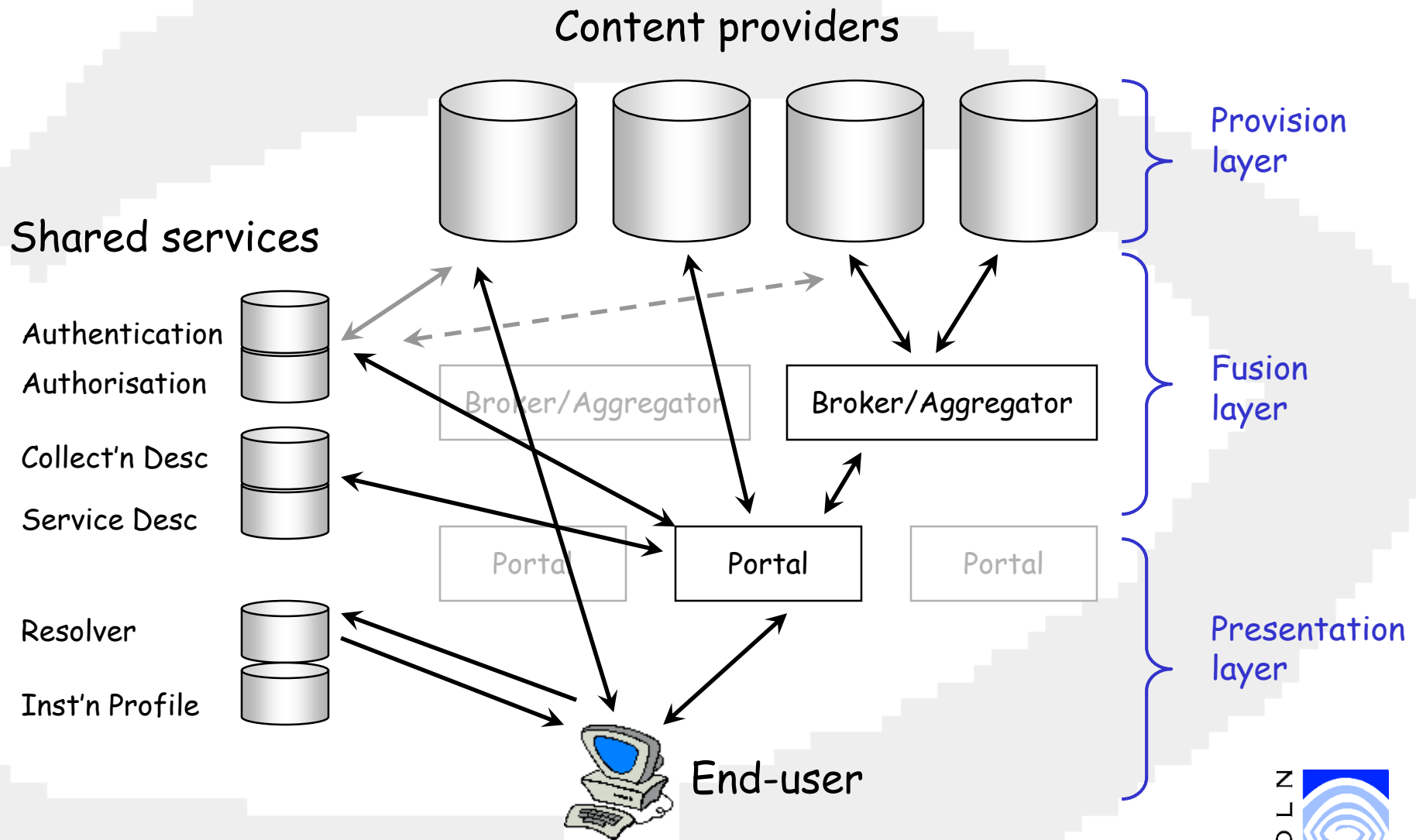
Summary

- Z39.50 (Bath Profile), OAI, RSS are key 'discovery' technologies...

  - … and by implication, XML and simple/unqualified Dublin Core

- portals provide 'discovery' services across multiple content providers…

- access to resources via OpenURL and resolvers where appropriate

- Z39.50 and OAI not mutually exclusive

- general need for all services to know what other services are available to them

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Common sense

- Z, OAI and RSS based on metadata 'fusion' - merging metadata records from multiple content providers
- need shared understanding and metadata practice across DNER
- need to agree 'cataloguing guidelines' and terminology
- 4 key areas
  - subject classification - what is this resource about?
  - audience level - who is this resource aimed at?
  - resource type - what kind of resource is this?
  - certification - who has created this resource?

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Web Services - IBM

"Web Services are self-contained, self-describing, modular applications that can be published, located and invoked across the Web".

IBM Web Services architecture overview

http://www-106.ibm.com/developerworks/web/library/w-ovr/?dwzone=ibm

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Web Services - Microsoft

"*A Web service is programmable application logic, accessible using standard Internet protocols".*

A Platform for Web Services

http://msdn.microsoft.com/library/techart/websvcs_platform.htm

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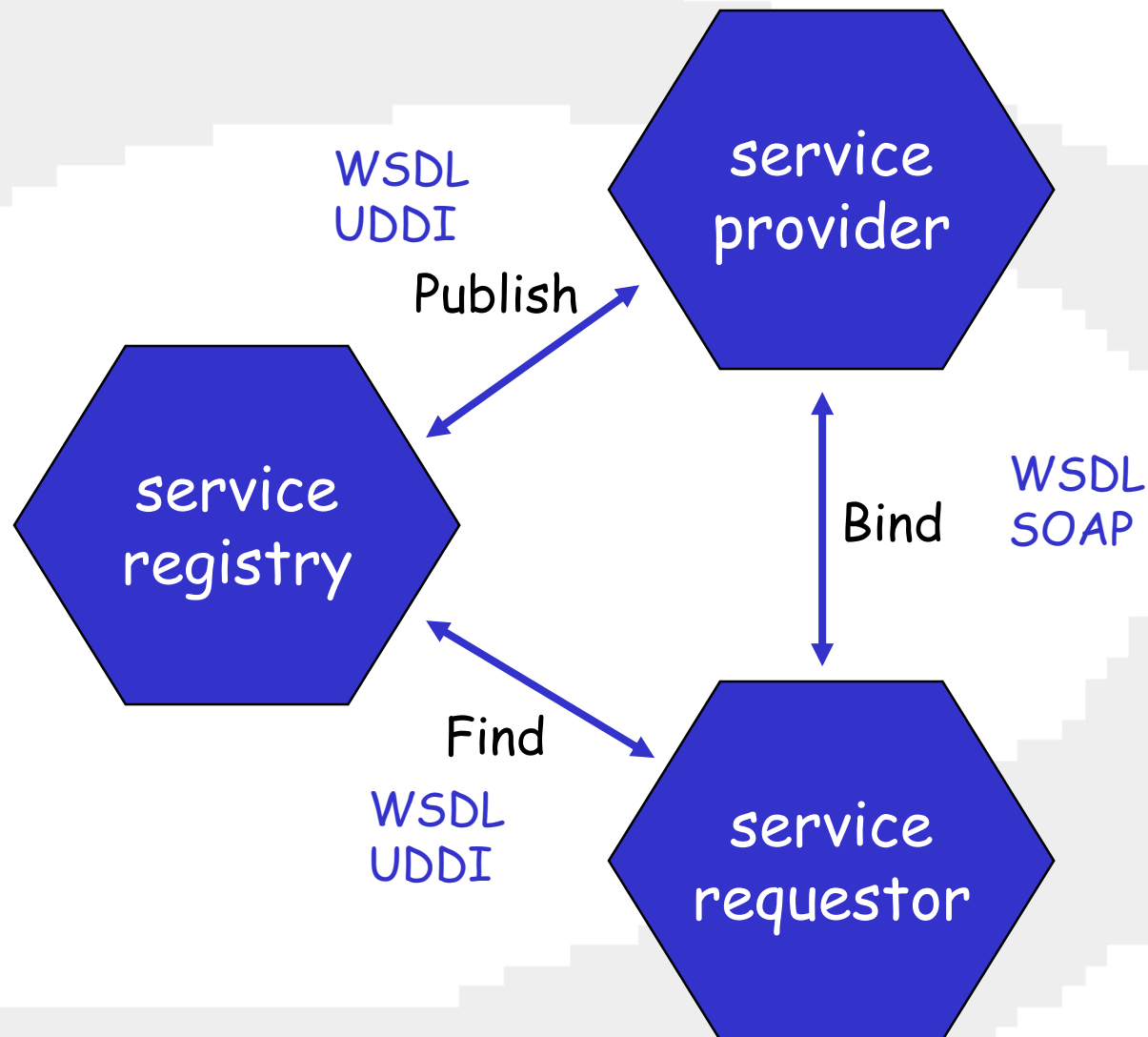
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Web Services - principles

- small units of functionality
  - informational
  - transactional
- b2b (m2m)
- key technologies
  - XML, HTTP, SOAP, WSDL, UDDI
- supporting organisations
  - World Wide Web Consortium (W3C) Web Services Activity & 3 working groups *http://www.w3.org/2002/ws/*
  - Web Services Interoperability Working Group (WS-I) *http://www.ws-i.org/*

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IBM Web services model

WSDL
UDDI

service provider

Publish

service registry

Bind

WSDL
SOAP

Find

WSDL
UDDI

service requestor

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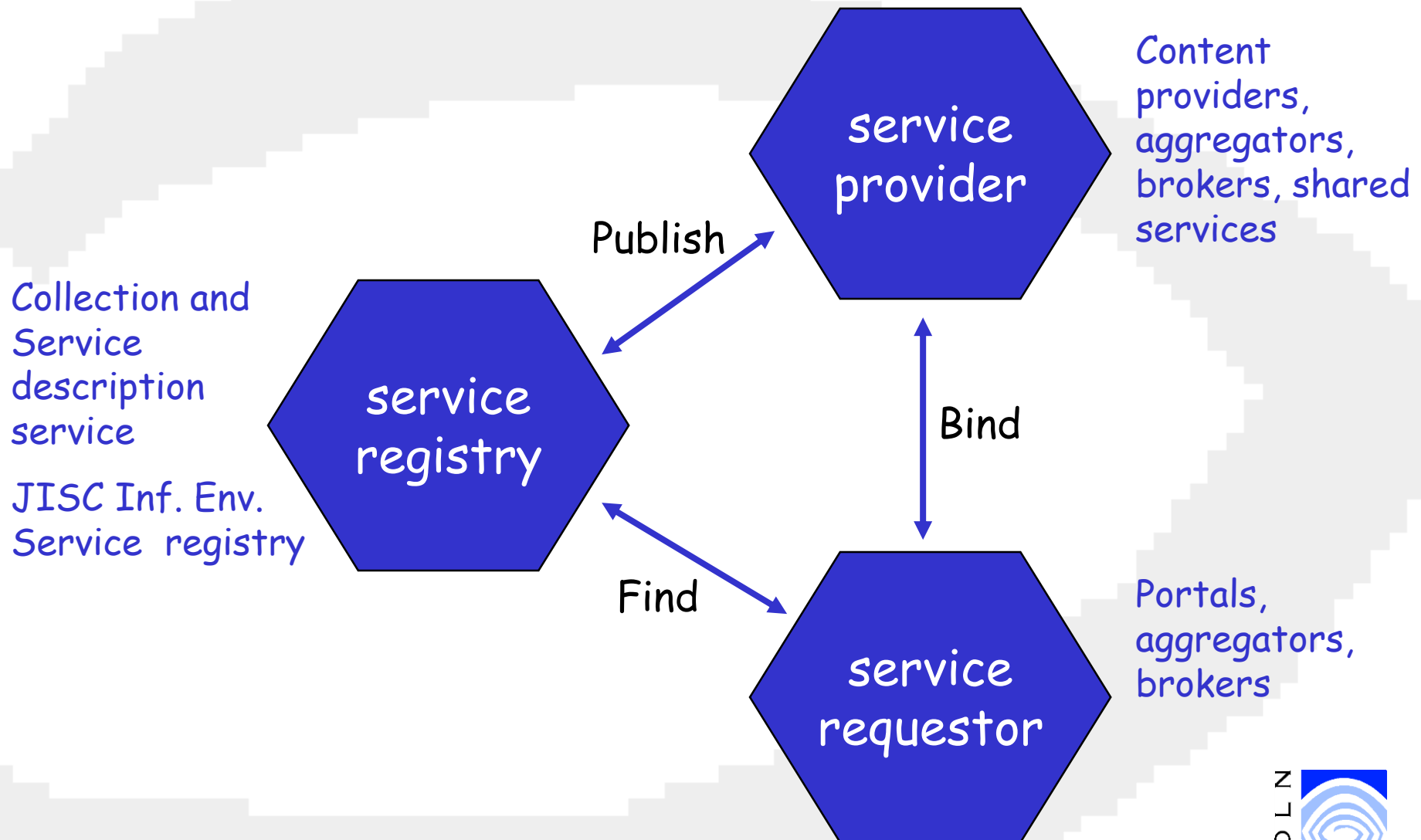
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WSDL, UDDI and SOAP

- Web Service Description Language
  - XML descriptions of Web services
  - note: limited scope for describing content of collections
- Universal Discovery, Description and Integration
  - technology for building distributed registry of Web services
- Simple Object Access Protocol
  - remote procedure calls based on XML and HTTP

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JISC IE - Web services

service provider

Content providers, aggregators, brokers, shared services

Publish

Collection and Service description service

JISC Inf. Env. Service registry

service registry

Bind

Find

service requestor

Portals, aggregators, brokers

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JISC Information Env.

Content providers

Service provider

Provision layer

Shared services

Authentication
Authorisation

Service requestor

Fusion layer

Broker/Aggregator

Broker/Aggregator

Service registry

Service provider

Portal

Service requestor

Portal

Portal

Resolver

Inst'n Profile

Presentation layer

End-user

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P3P

- Portal Proliferation Problem
- if intention of portals is to reduce the need to interact with multiple Web sites
  - proliferation may mean that portals are part of the problem not part of the solution
- typical campus may have 3 portals
  - library (external focus)
  - admin/computing (MIS, finance, room booking,...)
  - virtual learning environment (l&t)
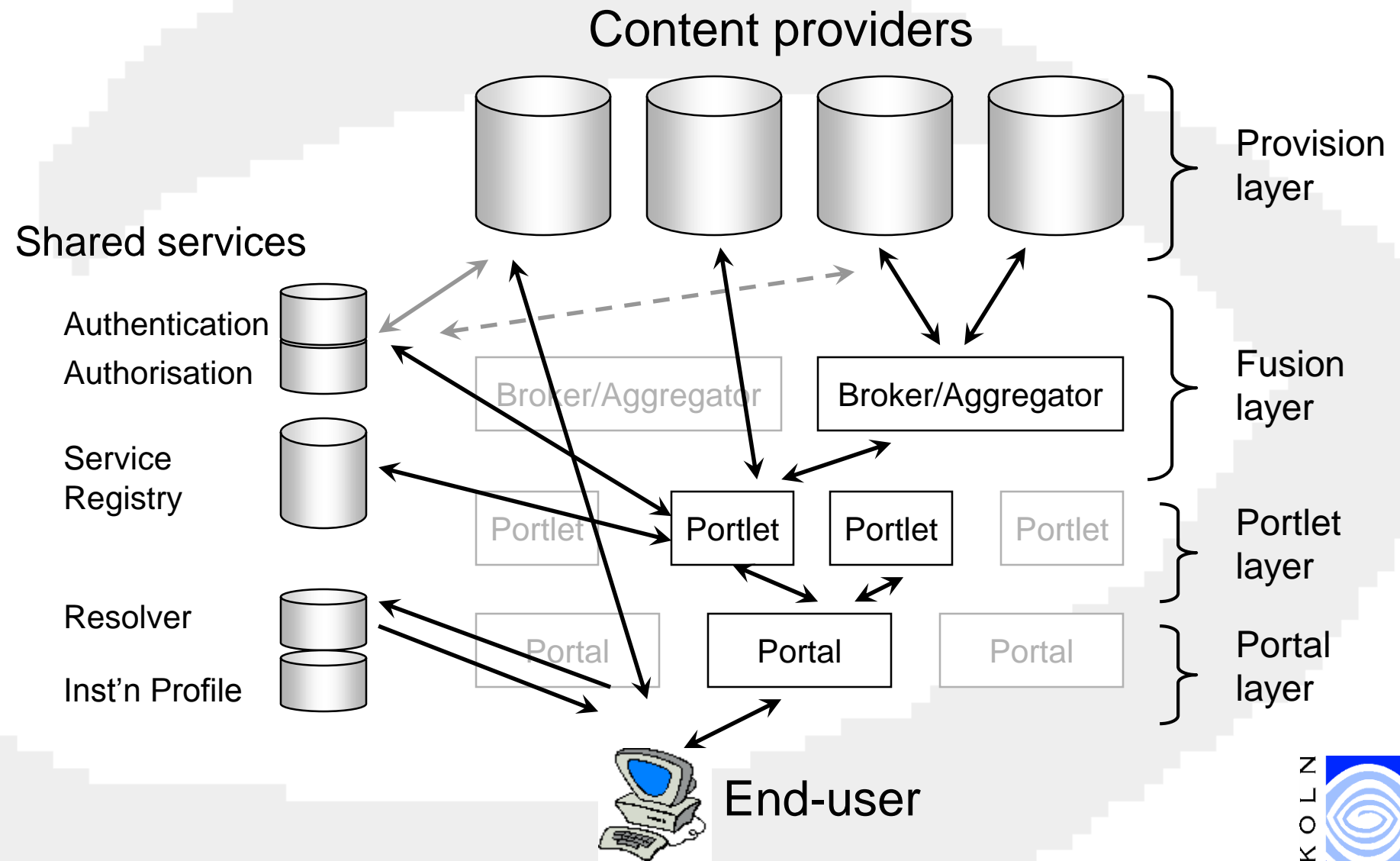- plus external subject, media and commercial portals, ...

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From portals to portlets

- Portlets provide the building blocks for portals
  - re-usable, display-oriented functional chunks
- Apache Jetspeed, IBM WebSphere Portal Server, Oracle Application Server Portal, ...
  - …but ongoing standardisation currently
- portlet approach being adopted by the RDN Subject Portal Project
  - portlets underpinned by Web services - cross-search, display news feed, ...
  - portlets can be embedded into institutional portals
- portlets will need registering in service registry

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4 layer model?

Content providers

Shared services

Authentication

Authorisation

Service
Registry

Resolver

Inst'n Profile

Broker/Aggregator

Broker/Aggregator

Portlet

Portlet

Portlet

Portlet

Portal

Portal

Portal

End-user

Provision
layer

Fusion
layer

Portlet
layer

Portal
layer

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Conclusions

- current - digital library technologies
  - fairly well understood
  - fairly slow moving
  - Z39.50, OAI, OpenURL, ...
- future - Web service technologies
  - largely driven by commercial portal sector and b2b requirements
  - fast moving, new set of acronyms and terms
  - UDDI, WSDL, SOAP, portlet, ...
- semantic Web and RDF
  - how do these fit in?

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Impact

- increased use of XML and SOAP as carrier technologies
  - OAI - experimental implementation using SOAP
  - ZiNG - SRW (Search/Retrieve Web service) (Z39.50 using SOAP)
- use of WSDL to describe services
  - probably supplemented by other standards to describe content of collections
- use of portlet technologies
  - demise of monolithic portal applications
  - small, reusable functional building blocks
  - sharing of portlets between portals

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Questions…

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