The JISC IE: Some lessons from Web 2.0

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Paul Walk

UKOLN

p.walk@ukoln.ac.uk

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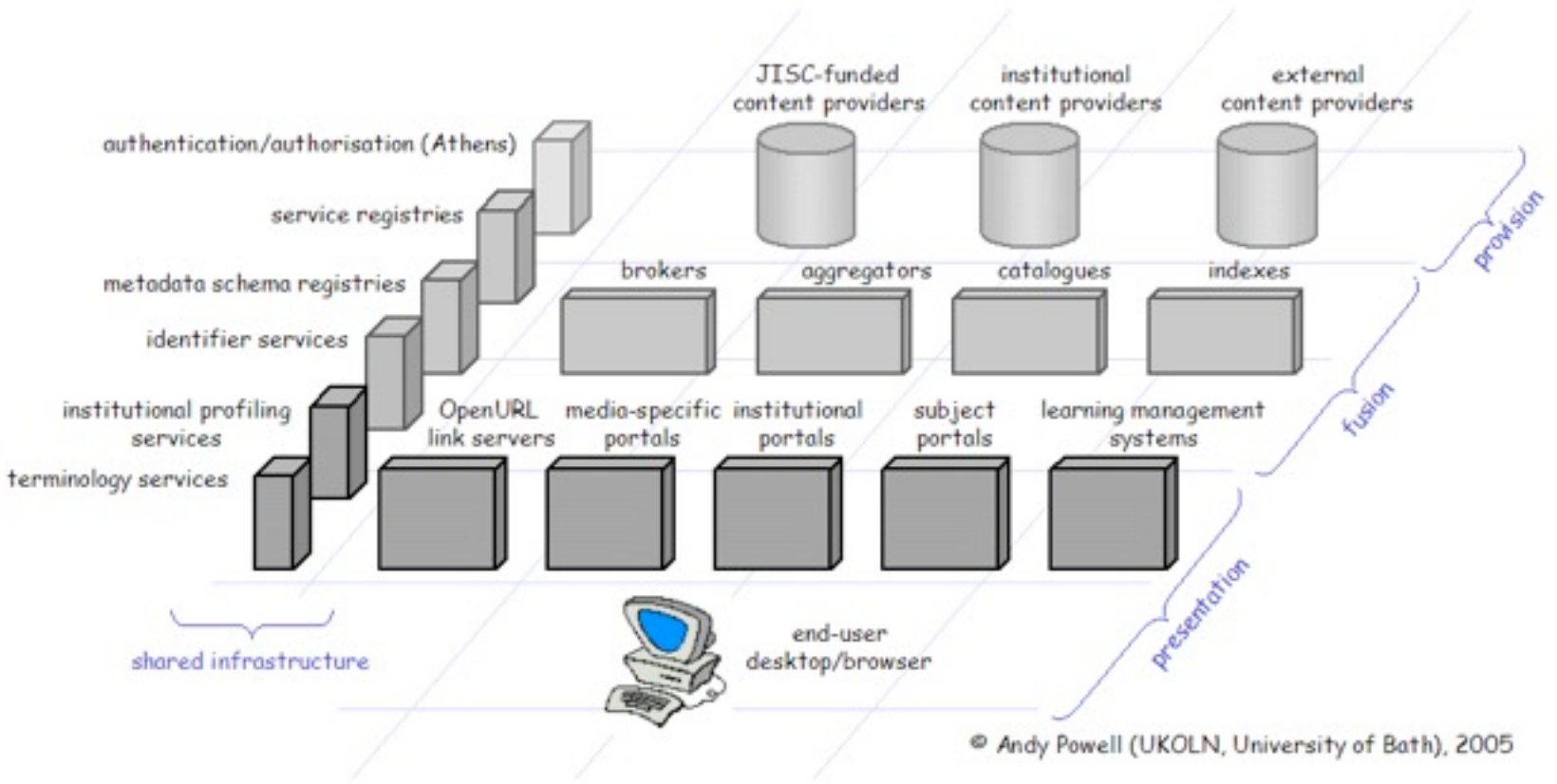
What's wrong with this picture?



....not too much, actually

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The IE Architecture has:

- been remarkably prescient
- anticipated Web 2.0, in terms of:
  - lightweight APIs
  - a few, universal standards & protocols
- correctly introduced a ‘separation of concerns’ (the layers)
- led to the development and testing of shared services
- **not** generated any hostages to fortune (prescriptive frameworks etc.)
- avoided some pitfalls that others have fallen into:
  - e.g. we’ll use SOAP for everything!

Web 2.0 has:

- profoundly shifted the user's relationship to networked information
  - moved them closer to the centre of things
  - raised their expectations
  - changed them from passive to active users (*the read/write web*)
- profoundly challenged the networked information provider's perception of the user
  - significant numbers of users will share content freely
  - *enlightened self interest* works (social bookmarking, tagging etc.)
  - users can play a more active role in the relationship
- shown how the *network* really can be the *platform*
  - 762 *Google Maps* mashups listed on *programmableweb.com*
- shown how 'lightweight' is usually better
  - while *Amazon* web services are exposed as both ReST and SOAP services - usage ratio is 80/20 respectively**[1]**

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Web 2.0 challenges the IE....

- the IE architecture implies a flow of information in one direction only, from provider to user
  - Web 2.0 is intrinsically bi-directional
  - the user's relationship to information resources is no longer passive
- The IE architecture describes a substantial *presentation* layer sitting between the user and information services
  - Web 2.0 has demonstrated that machine interfaces and human-user interfaces can be very close together - e.g. RSS (for machines) + CSS = human-user interface
  - as information services have been opened up, users can interact with them directly

...but the IE is well placed to respond

- proven APIs
- widely adopted standards
- some good *shared services* under development
- demonstrable appreciation of the importance of machine, as well as human, interfaces
- growing institutional content supply through repositories programme
- growing external content supply through Web 2.0 services
- *perpetual beta : service in development*

Example: Course information(1)

- XML schema for description (XCRI)
  - significant grassroots adoption
- demo repository & query service developed at LondonMet
  - with *Plex* (personal learning environment tool) mashup
- demo aggregator service developed at CETIS
  - with Google Maps mashup!
- current round of funding to encourage development of institutional repositories
- in the IE model:
  - institutional *repositories*
  - *aggregators* to harvest course descriptions (e.g. UCAS service)
  - *brokers* adding value (e.g. portfolio services)
  - *portals/clients* (e.g. course discovery, portfolio tools)
  - *registry* (e.g. IESR underpinning aggregator/brokers)

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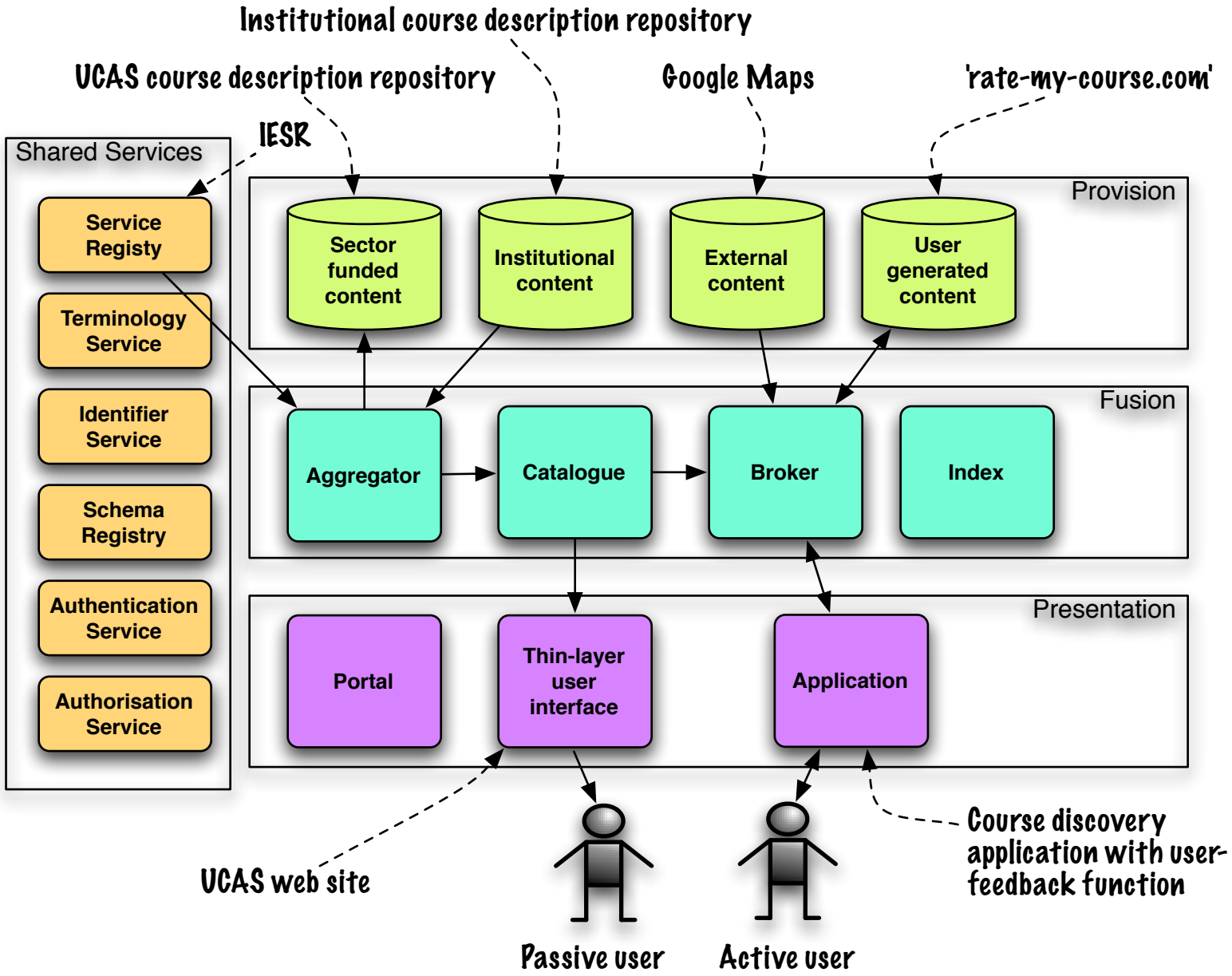
Example: Course information(2)



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Federated access management

- likely to have significant impact on growth of the IIE
- will allow & encourage collaboration between institutions
  - sharing infromation services
  - regional partnerships
- force change to existing business models - e.g. how VLEs are licensed to institutions
- open up new information silos which require access control
- allow sector-wide information services to be integrated with local information systems, e.g.
  - brokered course applications
  - e-Portfolio

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How the e-Framework sees the IE

- abstract components in the IE architecture (e.g. *broker, indexer*) are examples of *service genres*
- specific components in the IE architecture (e.g. OAI harvester) are examples of *service expressions*
- the IE could easily provide the *Service Usage Model (SUM),* for *resource discovery* for example
- the holy grail for the e-Framework is the re-applicable *service pattern* which can be extrapolated from the IE
- the e-Framework analysis can give the IE a sense of 'process', especially in terms of work & data flows
- **however**, the e-Framework is more concerned with *intra*-organisational services, while the IE is focussed on *extra*-organisational services (could do more *inter-organisational* integration

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Next steps - short term

- more concrete development
  - a map of real services, dependancies and collaborations
  - testbed(s) to help/encourage service integration
  - demonstrate real service (*vertical*) integration
- engage with other sectors (SEA)
- look for more content, and not just in the usual silos
  - e.g. the *long tail* of bottom-up, *small science* research data
- continue crucial role in providing a model and services for discovery and curation
- marketing - e.g. *"powered by IESR"*
- *geocoding* - location aware services
- access management (esp. federated model)
- continue to actively evangelise open access to data
- sort out persistent identifiers! (memo to self....)

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Next steps - medium term

- continue to evangelise open access to data through APIs using well-known protocols and standards
- actively invite participation from ‘outside’
- create sector-specific translations of the architecture and technical documentation
- consider how e-Business is changing to respond to Web 2.0 - how should our communities react?
- investigate personal identity & attention management
- create an environment which allows new services to *emerge* ‘spontaneously’
- add *just enough* infrastructure, and no more
- change emphasis from *architecture* to *model*

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Nothing is certain - there are risks!

- it is dangerous to assume that the trend for open access to data will continue without active encouragement
  - e.g. Google have just discontinued issuing keys to their SOAP search API. There is now, effectively, no *open web data access API* for this service
- federated access management may not be enough
  - users may come to expect more control of their identity and attention data
  - early examples of services offering this include *attentiontrust.org, openid.net, Windows CardSpace* etc.
- *You know you have a distributed system, when a company you didn't know you had a relationship with changes their business plan and your application stops working*[2]

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References

1. http://www.jeff-barr.com/?p=96
2. http://www.1060.org/blogxter/entry?publicid=303B91C59A56BB10798BB9739CE80131