

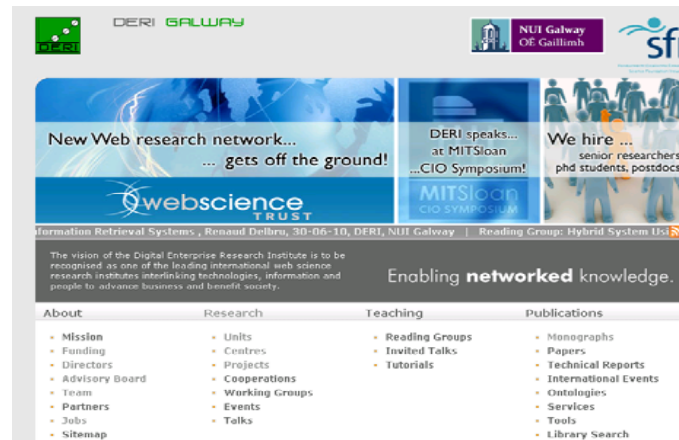


Exploiting Linked Open Data for Mobile Augmented Reality

Vinny.Reynolds @ deri.org

Michael Hausenblas, Axel Polleres, Manfred Hauswirth, Vinod Hegde

It's all about me..



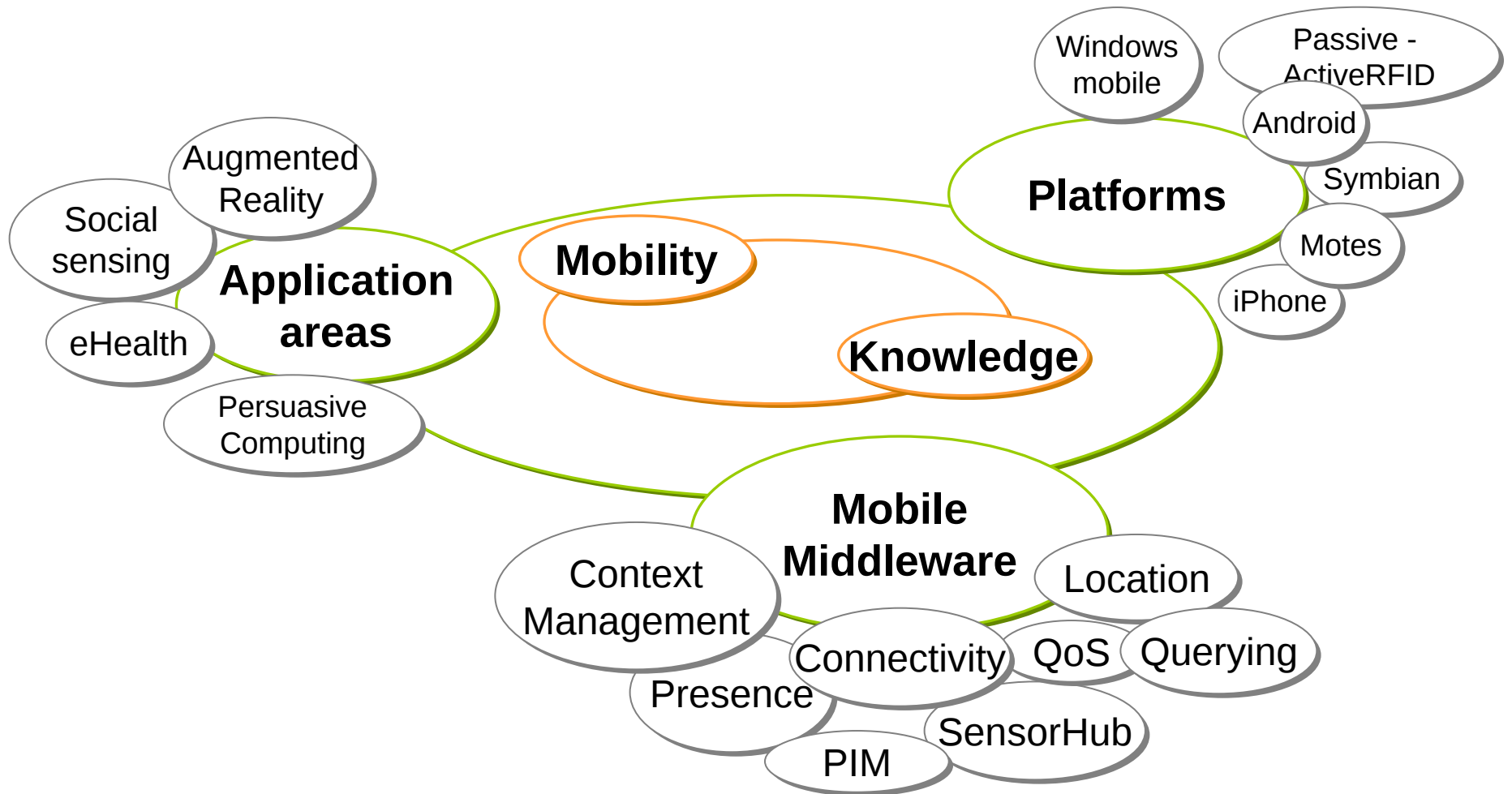
www.deri.ie

linkeddata.deri.ie/



marc.deri.ie





Augmented Reality ?

Mobile Device

Location-based

Content is
POI's

Scenario

- Anthony tells his mobile device: "I'm hungry and only got 20 bucks - find me something to eat, not far away". The mobile device, equipped with an advanced AR browser, shows three results. The first result is the image the device's camera can see of a restaurant. The image is prioritised above others by the browser.

**Keyword
Search**

**Social
Networks**

**Recommendation
& Discovery**

Our observations..

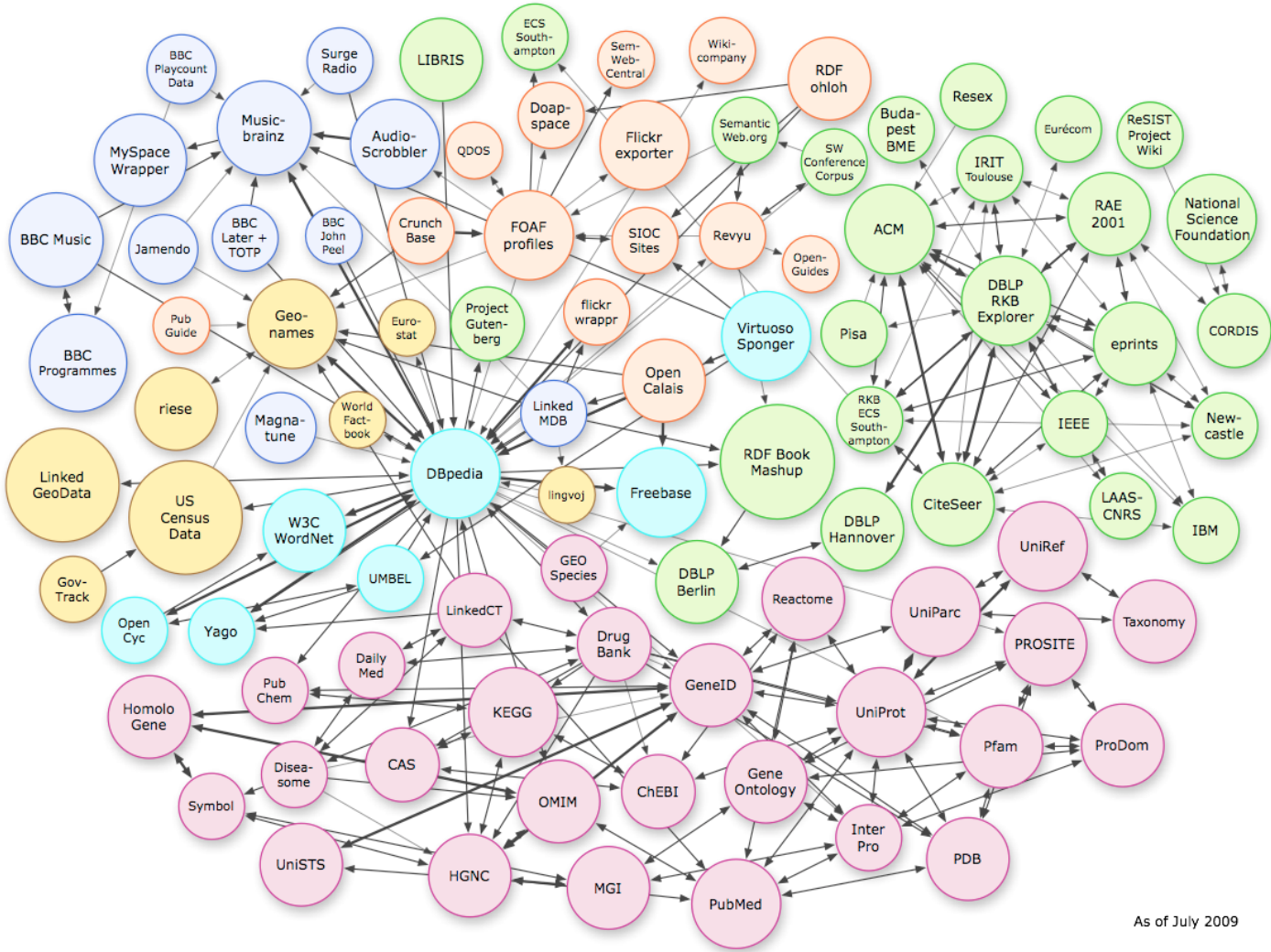
- Selection and Integration of data sources is done statically and does not scale
- Contextual information is under-utilised
- Browsing experience does not support discovery and exploration of new data

Linked Open Data Principles

- **Use URIs as names for things**
- **Use HTTP URIs**
- **When someone looks up a URI, provide useful information**, using Web of Data standards (RDF, SPARQL)
- **Include links to other URIs**

- **20 Billion data items**
 - **BBC, NY Times, Newsweek, US and UK government**
- ..of which a lot is already geo-located data items, such as found in GeoNames, LinkedGeoData and DBPedia

Linked Open Data



As of July 2009

Can LOD address some of our observations on AR as it currently stands?

- Linked Data supports dynamic selection and integration of data
 - Supports large scale because of URI's for global identifiers
 - HTTP for agnostic and reliable access protocol
 - RDF for a uniform, graph-based data model
- Contextual data
 - Location is not the only entry point into the LOD cloud, it can be anything, so context could be something here
- Browsing experience with Linked Data can be “webbish”

Discussion Points

- End user perspective
 - Information overload
 - Therefore we need filtering and reasoning over the data
- Developer perspective
 - RDF and SPARQL are stable powerful technologies for integration and structured queries of LOD data
 - Need supportive activities such as identifying/creating a subset specifically for mobile/AR, and creating mappings between these technologies and current best practises such as JSON
- Cross-cutting concern
 - If we open up LOD to AR, there are issues regarding data provenance and trust.
 - Which data sources can and should be used and trusted.
 - W3C Provenance Incubator Group

W3C activities

- DERI is active already in the areas of LOD, SPARQL, and Provenance Incubator Groups amongst others

