

Interacting with the Web of Data through a Web of Inter- connected Lenses

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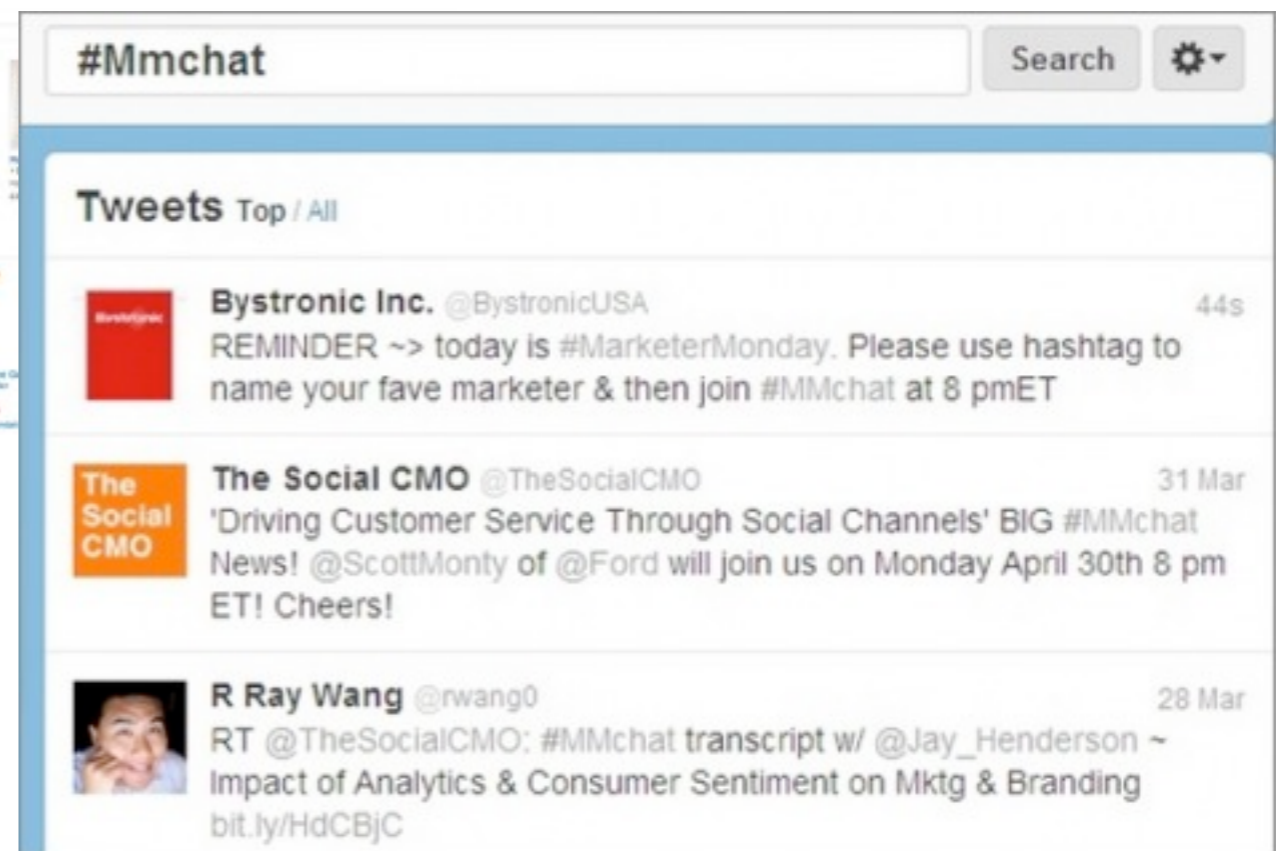
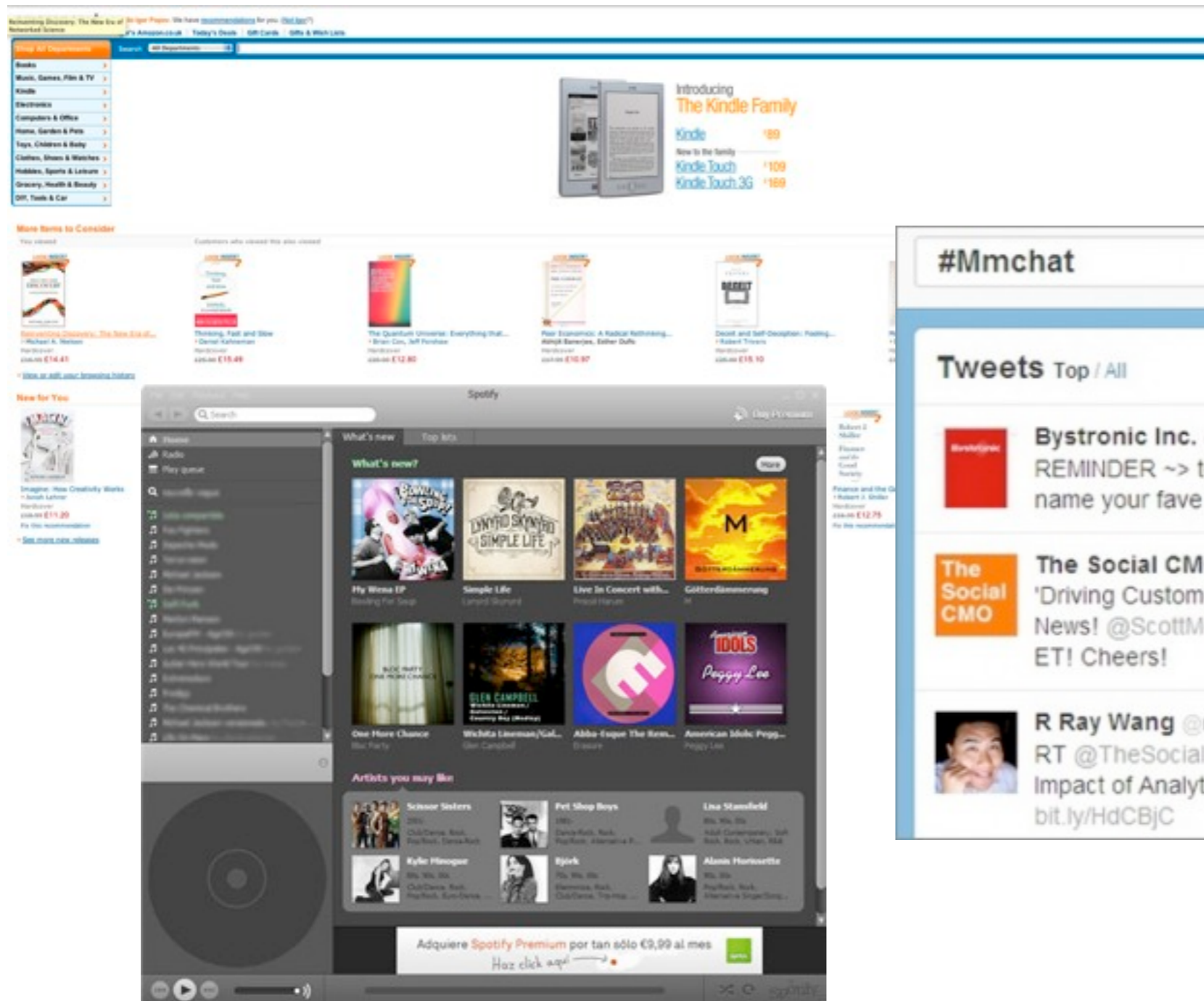
Linked Data on the Web Workshop @ WWW

Lyon, France 2012

Outline

- A bit of motivation
- End-user access to Data
- Generic browsers vs. Custom made interfaces
- mashpoint: Concept + Demo
- Implementation
- Ongoing research challenges

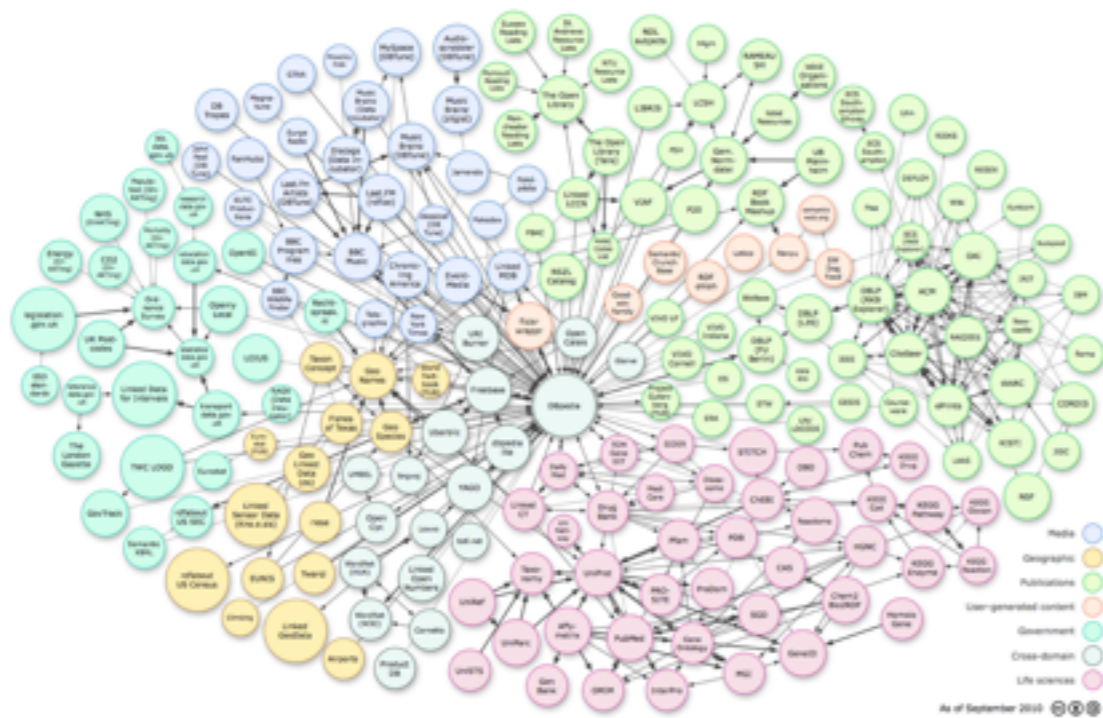
Users interact with data on a daily basis



People experience data through apps

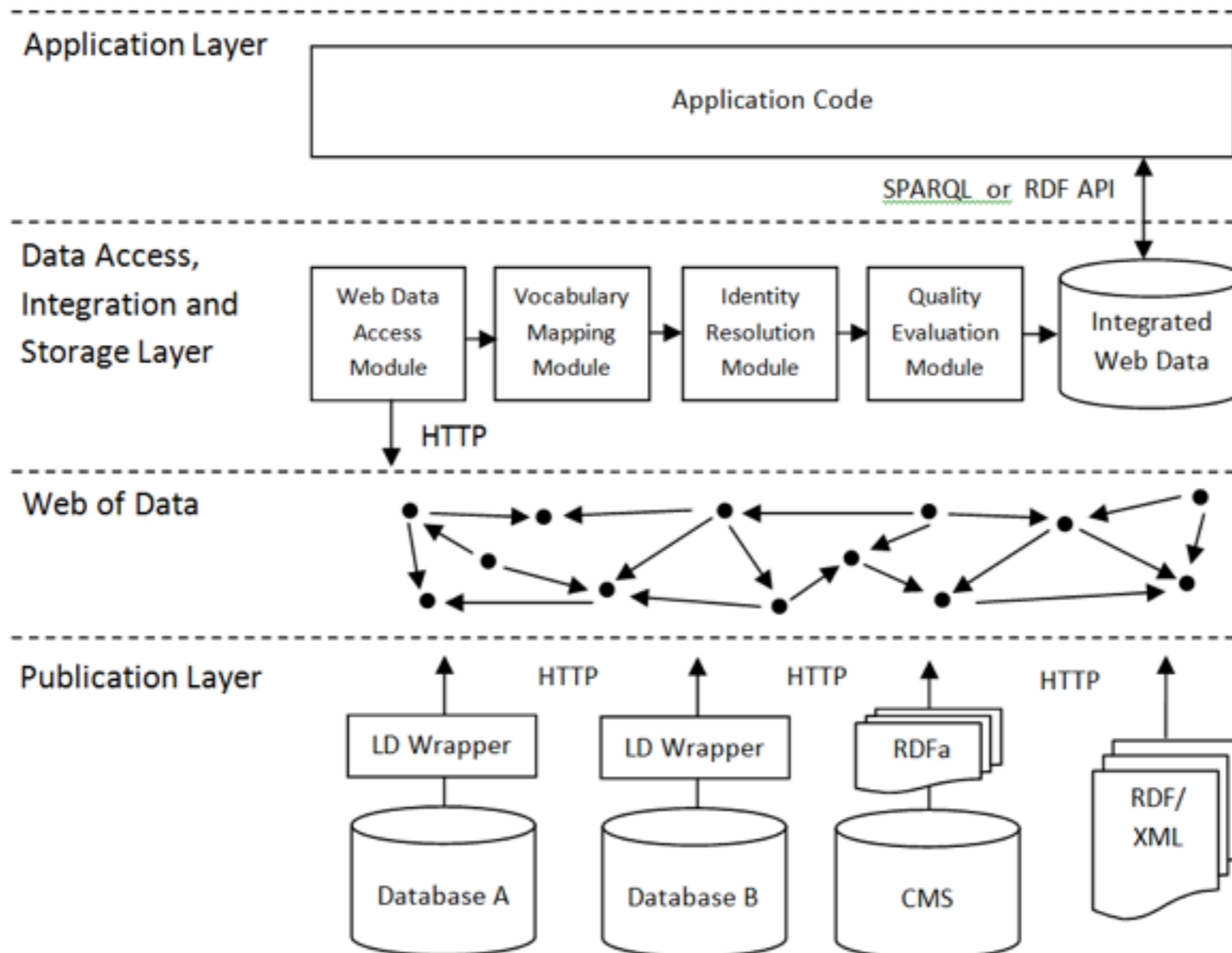
Data-powered applications are **lenses** for data that allow people to view, browse, and interact with data within a specific context.

Linked Data



From Tim Berners-Lee and Hans Rosling talks @ TED

Apps on the Web of Data



Linked Data: Evolving the Web into a Global Data Space, Tom Heath, Christian Bizer, 2011

Apps on the Web of Data



From Tim Berners-Lee and Hans Rosling talks @ TED

RESULT: Links between information reflected only in the data, but not between applications. Applications are again isolated silos of data.

Consequence: Access to a Web of Data is lost in the application creation process.

Generic Browsers

URI: <http://www.w3.org/2001/04/roadmap/org#Domain>

domain

- type \rightarrow \leftarrow Class
- comment A W3C domain groups activities for management purposes.
- label domain
- is type of \rightarrow Architecture Domain
- \rightarrow Interaction Domain

Technology and Society Domain

- type \rightarrow \leftarrow domain
- homePage \rightarrow <http://www.w3.org/TandS/>
- homePageAddress <http://www.w3.org/TandS/>
- part \rightarrow Patent Policy Activity
- \rightarrow Privacy Activity

Semantic Web Activity

- endingDate 2008-01-31
- startingDate 2001-02-09
- type \rightarrow \leftarrow activity
- homePage \rightarrow <http://www.w3.org/2001/sw/>
- homePageAddress <http://www.w3.org/2001/sw/>
- part \rightarrow RDF Data Access Working Group
- \rightarrow Rule Interchange Format Working Group
- \rightarrow Semantic Web Interest Group
- \rightarrow Semantic Web Best Practices and Deployment Working Group
- \rightarrow Semantic Web Coordination Group
- \rightarrow Semantic Web Health Care and Life Sciences Interest Group
- \rightarrow Eric Miller

lead name
name Semantic Web Activity
Activity statement \rightarrow <http://www.w3.org/2001/sw/Activity.html>

is part of \rightarrow Technology and Society Domain

lead name
name \rightarrow Daniel Weitzner
Technology and Society Domain

freebase parallax

Search within Results

US President (43 topics)

Filter Results

- Type of topic
 - Imagination Symbol (4)
 - Image (2)
 - Location Subject (1)
 - Topic (1)
 - Person (1)
 - Place (1)
- Place of birth
 - Adopted National Cemetery (1)
 - Washington Cemetery (1)
 - United First Parish Church, Quincy, Massachusetts (1)
 - White Rural Cemetery (1)
 - Washington National Cemetery (1)
 - Green Hill Cemetery (1)
 - Emory University Center (1)
- Place of death
 - Washington, D.C. (1)
 - New York City (1)

Abraham Lincoln

Andrew Jackson

Bill Clinton

- Directly through resolving it in the browser/use generic data browsers
- Indirectly by using applications built over Linked Data
- Level of configurability varies

Problems with generic browsers

- One size fits interface for all data on the Web using generic representations: table, graph visualisations etc.
- Data is often too complex and too granular for your average users to use
- Information overload a problem
- These tools may be good for some classes of users (e.g. data journalist or enthusiast that are not hard core computer geeks)
- Not so much for your typical everyday user accustomed to rich, customised interfaces of apps

Goal

1. How do we enable novel interactions by surfacing (to some degree) the richness of the links in the data on the application level?
2. How do we design this to make it usable for end-users? What are the interaction challenges we need to address?
3. How do we enable this such that it is a minimal effort to hook up data powered apps?

mashpoint: linking data-powered apps

- Basic idea: enable users to pivot with selections of the data between applications, thus enabling navigation
- Similar to a copy-paste clipboard, but data for applications on the Web

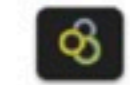
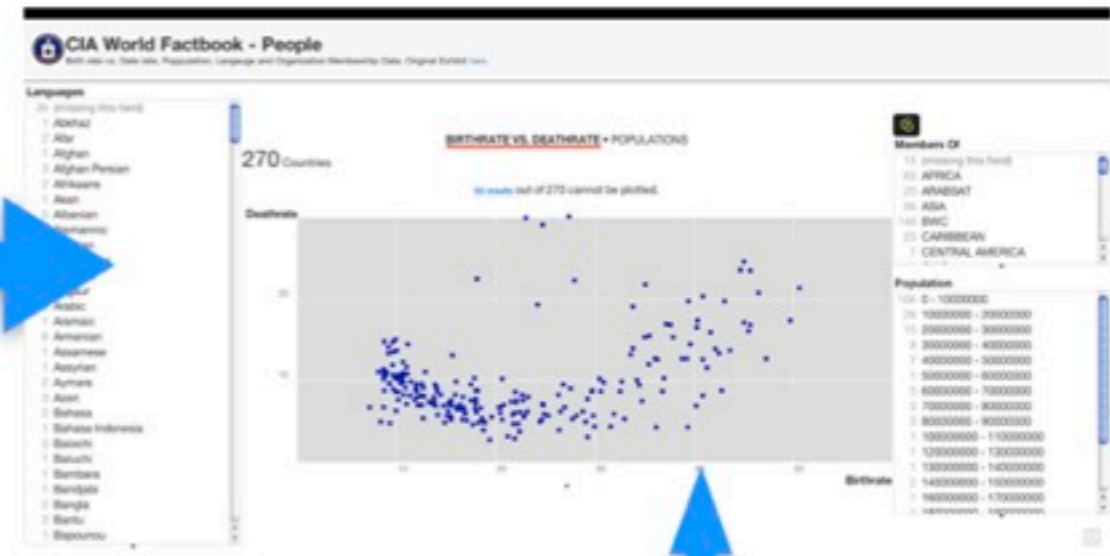
Example

(a) Select or Filter items

Countries income per capita



Countries birth rate vs. death rate



(b)

Choose from applications that can take selected items as input

A screenshot of the Mashpoint application interface. It shows a window titled 'View selected items on:' with a list of items: 'Flags on a map', 'Wealth of Nations per Capita', 'CIA World Factbook data', 'Migrations Map', and 'Visor - Wikipedia Explorer'. The window is overlaid on a background of application tiles. A blue arrow points from the Mashpoint icon to this window, and another blue arrow points from the window to the right, towards the pivot application.

(c)

Pivot with selected items on selected application

Demo

Implementation

- Offer Data-centric features
- Use of URIs (Reconcile - we currently use Freebase URIs)
- Be able to select multiple resources
- Be able to represent multiple resources on input

Lightweight state capture

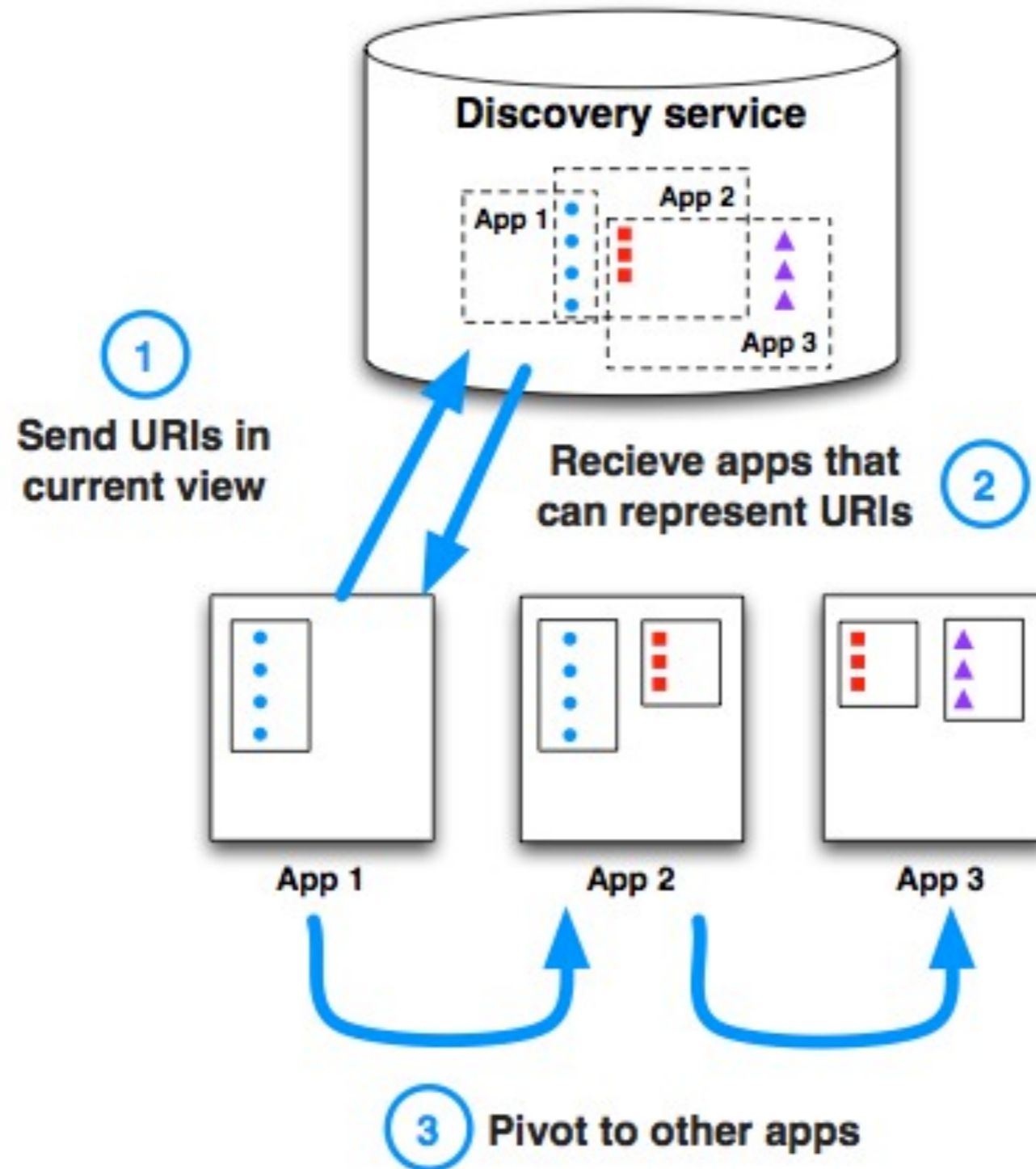
`http://application.com/#?mashpoint=uri1`



`http://application.com/#?mashpoint=uri1,uri2`



Architecture



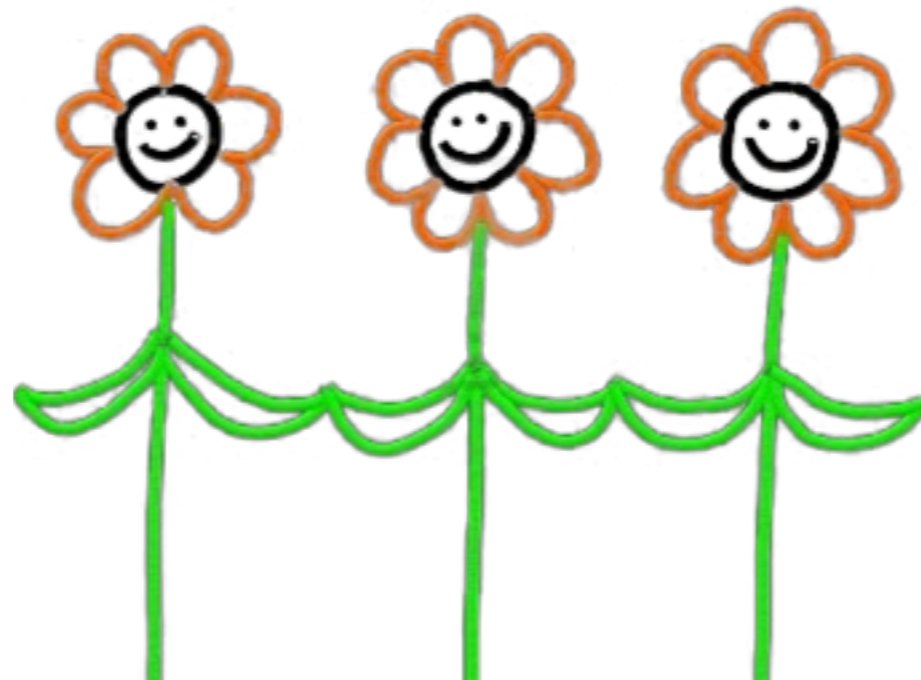
Interaction challenges

- Distributed and different applications used for data browsing as opposed to a single mashup application
- How well can multiple applications be used to solve complex data-intensive tasks (what are the potential problems in discovering the right application to pivot to?)
- Users jump from one application to another with a set of things - how do we design interfaces that convey complexities of operations over sets?
 - e.g. Pivoting between an app that shows data about all countries, to another which has data just about EU countries.

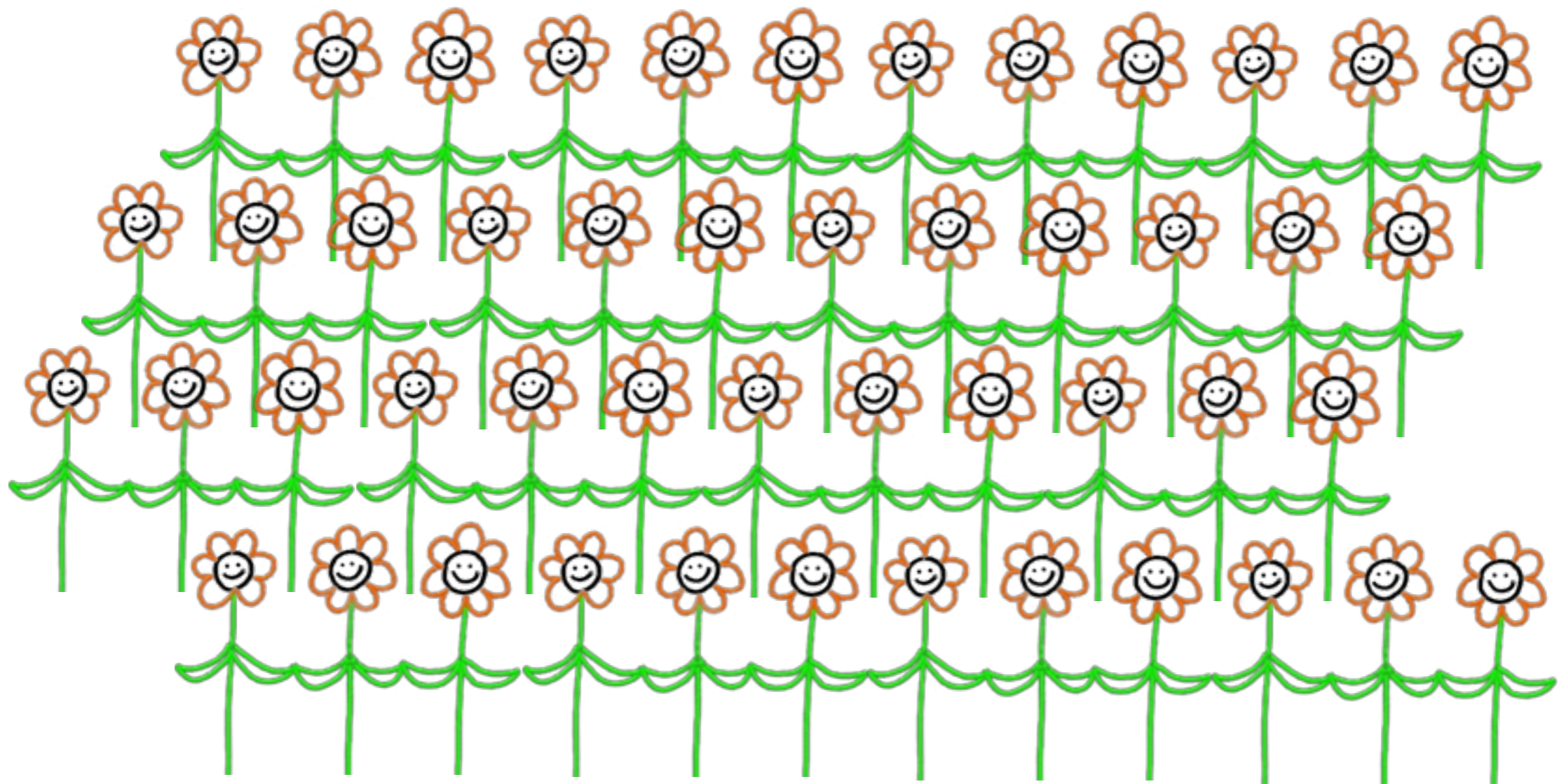
Potential Benefits and Incentives

- Social Contribution Factor
 - You're Web app is useful by itself, by linking it you are making it more useful
- Low Barrier for Entry
 - Just use URIs, no RDF required!
- Incentives for Publishing and Linking
 - Show immediate value of reconciling your data

**right now just a few
simple apps...**



**what we would like
to see is...**



Thank you!
Questions?

Demo at <http://mashpoint.net/>

<http://enakting.org/>

contact e-mail: ip2g09@ecs.soton.ac.uk