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and Talis

about me
I work at Lancaster
near the Lake District
and Birmingham in
the Midlands of England

... but
although I speak English
I am not English
I am Welsh
rydw i’n Cymraeg

... and live ...
in Tiree, Scotland
... the sunniest
... and windiest
place in the UK

today I am not talking about ...
• situated displays, eCampus,
small device – large display interactions
• visualisation and sampling
• fun and games, virtual crackers,
artistic performance, slow time
• physicality and product design
• creativity and bad ideas
and modelling dreams and regret!

... or even lots of lights
http://www.hcibook.com/alan/projects/firefly/
... but I am talking about

the web

• HTML, images, PDF
• hypertext links
• web search

vfridge ... looking to the web future ... in 1999

in the midst of dot.com years ...

dominant view:
  – expecting ‘shake out’
  – small number of large players
  – future of web as TV-style broadcast medium

we thought differently ....

the websharer vision (1999)

“ The web/Internet is not just a medium for publishing, but a potential shared place.

Everyone may be a web sharer — not a publisher of formal public ‘content’, but personal or semi-private sharing of informal ‘bits and pieces’ with family, friends, local community and virtual communities ...”

sounds prescient (web 2.0!)
... and was translated into a product (vfridge)

sadly the company died ☹️
but the you can still play with vfridge today ☺️
• people want to do things

Bill Gates: “The future of search is verbs.”
Esther Dyson: "when people search, ... they are looking for action"

but must not forget
that at the heart of the web
is computation

• semantic web
  – RDF, OWL etc,
  open data, linked data,
  data.gov.uk

• recommender systems
  – Amazon for books,
  but now ubiquitous

but all fit together

global data + individual interaction => personalised action
focusing on action
how can the system help?

time to act

• when to act (initiating action)
  – detecting loci of action in current activity

• what to act on (performing action)
  – suggesting parameters/values in actions

• how to act (continuing action)
  – proposing future actions

when to act
detecting loci of action in current activity
data-driven interaction

identify loci at point of creation

offer alternative RDF or XML formats or use markup in web page

  – dedicated markup
    e.g. zLinks

  – microformats
    human readable text...
    ... but also machine readable
    for search engines or plug-ins

identify loci at point of use – SnipIt

users selects in web page and presses “SnipIt” bookmark

SnipIt pops up page with suggested things to do with the snip (and saves it for later, like bookmark)

identify loci at point of use – SnipIt

recognises various things e.g. dates

Hi, my name is Jamie Jones and I dig microformats!

microformats.org

zitgist.com/products/zlinks

my SnipIt

Play yourself at www.snipit.org
class of systems ‘data detectors’

- late 1990s
  - Intel selection recognition agent
  - Apple Data Detectors (Bonnie Nardi)
  - CyberDesk (Andy Wood led to onCue)
- recently
  - Microsoft SmartTags
  - Google extensions
  - Citrine – clipboard converter
  - CREO system (Faaberg, 2006)
- way back
  - Microcosm (Hypertext external linkage)

architecture

SnipIt – server-side ‘intelligence’
(onCue – was client-side – internet speed at the time!)

recognisers + services (inherited from onCue):
- recognisers:
  - scan text for potential data
- services:
  - match data to actions

what to act on

suggesting parameters/values in actions

personal ontologies

- all use ‘general’ categories:
  - post code, name, place
- linking to personal ontology
  - users own entities and categories
- how to build?
  - by hand (during useful interactions)
  - automatically (mining files, emails, etc.)
    - e.g. Gnowsis and other semantic desktop projects

spreading activation over ontology

long-term modification of schema relation weights

spread activation through relation instances

weaker spread through 1-m links than m-1
context in forms

but what is the relationship?
maybe semantic markup on form
-- good SemWeb style ... but not very personal
... or more inference ...

context in forms - inference

match terms in form to ontology
look for ‘least cost paths’
• number of relationships traversed, fan-out
later suggest based on rules

context in forms - inference

how to act

proposing future actions

single step – next action

seen it already ...

• markup or data detectors -> loci
• find web services that use the data
• strongly typed data is the link

locating web services for data type

many web services designed for human use
add meta-information to services
– internal (semantic page markup)
– external (e.g. Snipit, Milan Search Computing)
**Reweaving the hidden web through user interaction**

- Web of data: static and dynamic
- Hidden web application
- Web pages with microformats or data detectors

**Proposing sequences of actions**

- Long history (lots of work early 1990s)
- Limited success
  - Interleaved tasks
  - Generalisation
- Data ontology helps :) (input/output links like 'string of pearls')
  - Ontology type allows single step learning

**How to get links?**

- User interaction:
  - Drill-down from previous values

- System inference:
  - Same form-field linking as before

**So what?**