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ADVANCING THE STATE OF THE ART

# Semantic Technology Enabled Information Revolution

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Landscape: Information 24x7

- Smart devices abound
- Ubiquitous connectivity
- Open Data explosion
  · **linked data, social web, …**
- Instrumented self; instrumented world
  · Fitbit, Zeo, energy-smart homes, … supportive
- New publication models
  · Provenance explosion (e.g, GCRP ->),
  · Connections to datasets, interactive annotated figures,
  · Free access to scientific research (British in 2 yr)
- Distributed, pervasive, entertainment
 · E.g., movies, books, social collaborative entertainment…
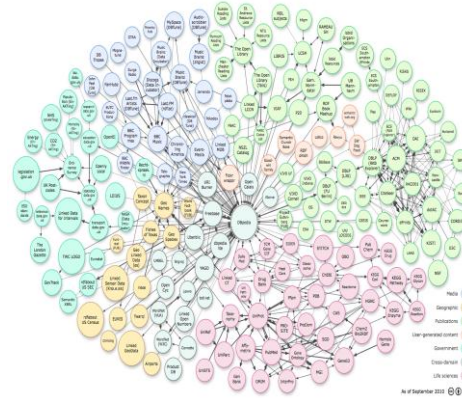
One in three smartphone owners use apps before they get out of bed *(Ericsson ConsumerLab, 2011)*

- # Need smart assistants that recommend and explain

Semantic Technologies and Next Gen Information

- Context-aware, Personalized Mobile Assistants
  - e.g., semantic sommelier, semantic concierge, Siri, now the microsoft assistant, ..
- Semantic eEverything
  - Semantic environmental monitoring
  - Virtual Observatories
  - Citizen Science
  - Linked Data Explosion
- Next Gen Semantic Enablers – creating actionable services
  - Explanation, e.g., Inference Web
  - Provenance-aware X
  - Data Explorers / Content-aware visualizers
  - Privacy Assistants
  - Conversion / integration tools
  - Distributed Collaborative ontology environments
  - Technical bridges / work arounds…
    - Open / closed world issues, sameasIssues, …
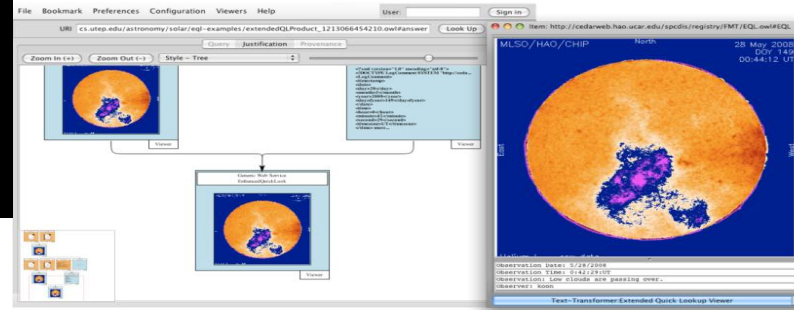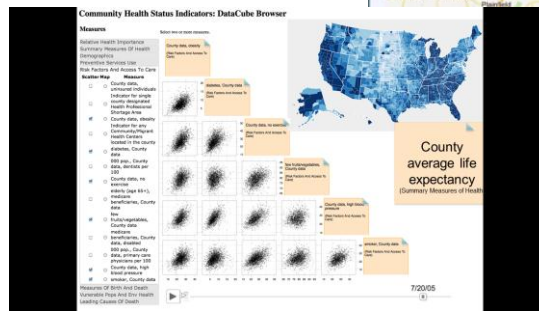
Future Interaction Paradigms:
college students, info workers, elderly of tomorrow interactions

Cognitive Assistants: Observes, Organizes, Learns, Recognizes, Anticipates, Alerts, Protects

Context/ Situation-aware / Personalized

Advocates

Advanced Directive Assistant

Information Broker

Research Assistant

Eco-system aware – e.g., resource manager support evolution from SemantAqua, medical eco-system – support for chronic care or end of life

Forecasting

Ultimately allowing people to find things more quickly and accurately returning answers in actionable-transparent, interactive and probable form

Patients find an app a day may keep the doctors away

July 7, 2012

A range of medical and health apps are allowing immediate access to a wide range of advice, writes Catherine Armitage.
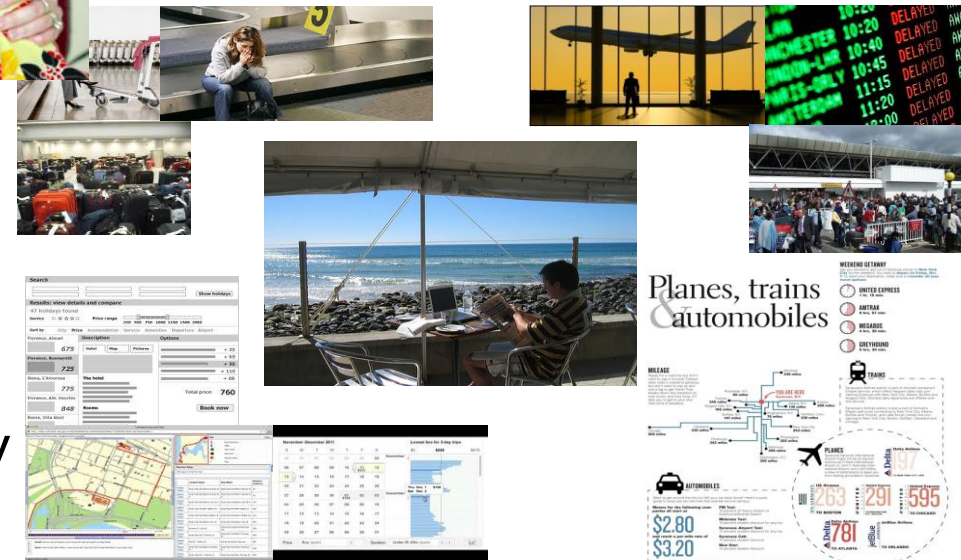
Questions / Suggestions ?

The elderly of tomorrow or the x-challenged of tomorrow are us…. It just depends on how far out you look.

Lets create the semantic, actionable eco-systems to support tomorrow

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Semantic asssistants of the future allow for more leisure and remote monitoring / action

New forms of web assistants/agents that act on a human's behalf requiring less from humans and their communication devices...

Data Cube Explorer, Visualization APIs
S2S
Govt Data

Chaired OWL WG (*UMCP*)
Edited main OWL docs (*Stanford*)
OWL 2.0 committee
Edited OWL profiles (OWL RL)

Inference Web IW Trust,
Air + Trust

Inference Web,
PML, PROV

N3Logic

Semantic eScience

Chaired SPARQL WG (*UMCP*)

RIF WG
AIR accountability tool

Govt metadata search
Linked Open Govt Data

SPARQL to Xquery translator

RDFS materialization
(Billion triple winner)

Transparent Accountable
Datamining Initiative (TAMI)

User Interface & Applications

Trust

Proof

Unifying Logic

Ontology:
OWL

Rule:
RIF

Query:
SPARQL

RDFS

Crypto

Data interchange:
RDF

XML

URI/IRI