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Bytes Beat Bricks

Mail: Text vs. Mail

Cellphone text messages sent: up 1,200,243% from 2000

1.9 trillion

5-YR PERFORMANCE:
USPS mail volume

-19%

Pieces of mail shipped by USPS
Projected loss, fiscal year 2011: $6 billion

Movies: Netflix vs Blockbuster

Netflix sales:
up 43,101% from 1999

$2.2 billion

5-YR PERFORMANCE:
Blockbuster sales

-29%

Blockbuster sales
Filed for bankruptcy, September 2010

$4.1 billion
Bytes Beat Bricks

Books: Amazon vs. Borders

Music: iTunes vs CDs
Our Digital Universe

• Unimaginable
  – Scope
  – Scale
  – Opportunities
  – Challenges

• “It amazes us because we simply don’t understand it.”
  – Gérard Berry, Académie française
A Time of Fundamental Change

- Conventional approaches exhausted?
  - Does scope and scale lead to fundamental change

- From the Computing Era to the Problem Solving Era
  - E.g., Social computing
What?

- Critical Applications @ scale: Healthcare
- Problem Solving
- Techy Stuff
  - Big Data
  - Services
  - Cloud
  - Semantic Web
  - Semantic Technologies
  - ...

7/2011 - Summit
Why Are We Here?

• Semantic Technologies
  – Pillar of Modern Computing

• Semantic Web
  – Linked Data

• Social Semantics
Semantic Technology Adoption …

- Research
  - Across computer science disciplines
  - Across application disciplines,
    - e.g. eHealth, life sciences, smart grids, …

- Commercialization
  - Business applications
    - Early adopters
    - Mainstream application developers
Synergy Opportunities

• Databases
  – NoSQL databases

• Information Retrieval
  – Access structured and unstructured data in a uniform way

• Data / Text mining
  – Bridge the gap to semantic representations

• Software Engineering
  – Reuse-oriented development

• Social Sciences
  – Analyze and understand the development of communities
Topics...

• State-of-the-art: Where we are, trends, key issues, challenges
  – Successes
  – Adoption

• Future
  – Application potential
    • Grounded in pragmatics, use cases
  – Challenges

• Visionary
  – Strategic perspectives
  – Grand challenges
  – Topics for a 5 year research and development agenda
Hard Questions

• Why hasn’t semantic web technology caught on in a commercially-interesting way?
  – If I hear the answer “immature tools” again, I will be ill…
  – Is there a commercial use case for page-based semantic markup beyond SEO and maybe GoodRelations?

• What is the role of logical inference in the Semantic Web?
  – Data is often impossible to cache
  – Data at this scale always includes mistakes
  – What did LarKC’s experience teach us?

• How should the Semantic Web community react to the resurgence of “low semantics” data markup like Facebook OGP and schema.org?
  – Main (technical) criticism was that webmaster authoring in RDFa was too difficult

• Where is the next big tranche of Semantic Web data coming from?
  – Social data, transactional data, geolocation data, advertising data?
Attitude – Orientation

- AI-Database
- Semantics
- Engineering
Summit Themes

• Big Data: Manage, Search, Integrate, …

• Making Linked Data Work
  – Applications: Linked Data in Domains
  – Linked Data + Services, Ontologies, …

• Social Semantics
  – Social data is all about emergent phenomena
  – Includes aspects of Big Data and Linked Data
    • Adds unique issues of privacy, consensus/diversity, analytics, very loose data models (“friend,” “like,” “recommend”), etc.
Agenda

• Wednesday
  - Managing Data Semantic Web Scale I: Michael
  - Future of the Semantic Web: Rudi

• Thursday
  - Social Semantics: Mark
  - Linked Data in Domains: Mark
  - Managing Data Semantic Web Scale II: Michael
  - Making Linked Data Work I: Rudi
  - The Story So Far I: Dieter, All

• Friday
  - Making Linked Data Work II: Rudi
  - The Story So Far II: All
  - Closing
  - Tour Riga
Guidance

- Not a conference = not reports of research results
- Predominately open discussion
- Presentations
  - Clear
  - Short
  - Provocative
Discussion