

HP's Sensemaking Technologies

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Summary of Capabilities

DARPA SyNAPSE

- Working on CogExMachina, a three-phase project to build neuromorphic hardware using HP's memristor device
- Sensemaking team will have access to innovative hardware and architectures coming out of this program

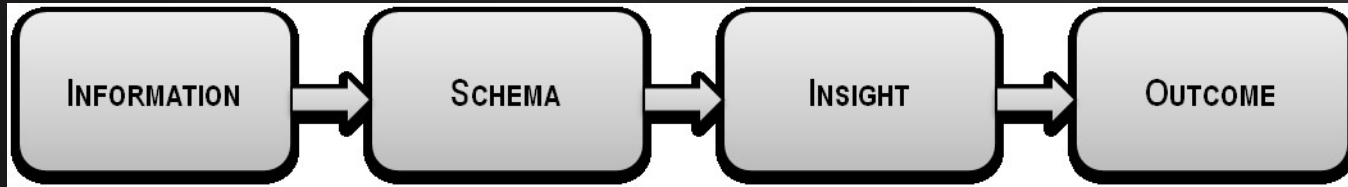
Taxonom.com

- Commercial offering for making sense of queries and documents
- Private beta Dec 2008, public beta June 2009, paying customers in Financial and Legal Services industry
- Pankaj Mehra, Chief Technologist of HP's Taxonom incubation

HP Labs expertise areas

- Social computing and information dynamics under the leadership of Senior Fellow Bernardo Huberman
- Device, sensor and architecture innovation under the leadership of Senior Fellow Stan Williams
- 25+ Machine Learning people
- Pankaj Mehra has authored and edited books on neural networks





SENSEMAKING

... the key learning loops driving the “priming” of information
... increases information value by rendering it actionable



Taxonom DTX™

Automates
—optionally assists—
building and refining
conceptual models of
information domains
by mining
definitional content

Document
Taxonomy
eXtractor

Corpus

- Term extraction using JAPE patterns
- Validation against 11 million concepts & synonyms mined from Wikipedia using 3 separate algorithms

Sense

- Sense clustering → essence of meaning
- Essential disambiguation of single words

Schema

- Concepts embellished with
 - machine-generated scope notes
 - Linguistically mined relationships

Case Study

Major Information Service Provider

Seeking to expand
understanding of legal
topics 10x

Frustrated by cost of
taxonomy creation and
maintenance

Frustrated by cost and
quality of classification

Taxonom DTX shown to expand taxonomies 4-10
times by mining documents 10,000s at a time

Leads to more granular classification

No need to train classifiers!

Taxonomies created in the process usable in
Web properties

Collaborative workflow between HP and
legal experts working on customer behalf

