A Brief Overview of Semantic Web Deployment

Table of Contents

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Slides are available at: http://www.w3.org/2004/Talks/1010−semweb−em/

Semantic Web: Data integration at Web scale

- W3C launched RDF as a data integration mechanism across applications and the Web − "Joining the Web"
- Web of data − provides common data representation framework to facilitate integrating multiple sources to draw new conclusions
- Increase the utility of information by connecting it to its definitions and to its context

Semantic Web Foundation: RDF and OWL

RDF Core and Web Ontology Working Groups

- Semantic Web foundation specifications are W3C Recommendations!
- Lots of hard work by the chairs, working groups participants and public resulting in broadscale implementation and deployment (press release and testimonials)
- Working Groups officially ended May 2004
- Current work underway in Data Access and Best Practices (different talk!)

Community Involvement

Semantic Web benefits from a broad participation from vendors, users, researchers and communities defining enabling technologies

The following are a small sample of the growing set of Semantic Web tools, applications and projects that are crossing organizational, domain and geographical boundaries.

Creating Semantic Data − Adobe's XMP

Adobe's eXtensible Metadata Platform (XMP)

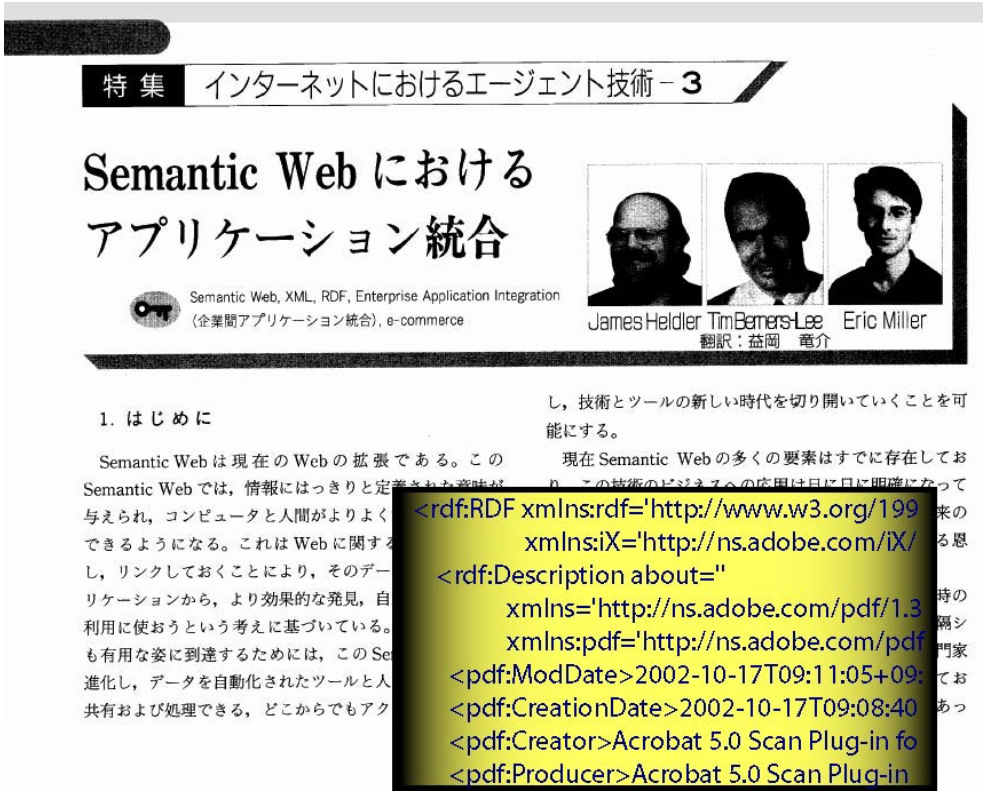
Cross product metadata toolkit

leverage RDF/XML to enable more effective management of digital resources

standardized means for supporting the creation, processing, and interchange of document metadata across publishing workflows

focus on reducing cost and makes for more effective management of digital resources

"10 Million Dublin Core records in RDF/XML by the end of the year" − Semantic Web Developers Day 2002



特集 インターネットにおけるエージェント技術－3

Semantic Web における アプリケーション統合

Semantic Web, XML, RDF, Enterprise Application Integration (企業間アプリケーション統合), e-commerce

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翻訳：益岡 竜介

1. はじめに

Semantic Web は現在の Web の拡張である。この Semantic Web では，情報にはっきりと定義された意味が与えられ，コンピュータと人間がよりよくできるようになる。これは Web に関する し，リンクしておくことにより，そのデー リケーションから，より効果的な発見，自 利用に使おうという考えに基づいている。 も有用な姿に到達するためには，この Se 進化し，データを自動化されたツールと人 共有および処理できる，どこからでもアク

し，技術とツールの新しい時代を切り開いていくことを可能にする。

現在 Semantic Web の多くの要素はすでに存在してお

Hendler, Berners−Lee, and Miller, Integrating applications on the Semantic Web *Journal IEE Japan*, 122(10):676−680, 2002.

Navigating the Semantic Web − Foafnaut

Social networks − 'Friend of a Friend'

Distributed RDF/XML records describing people, who they know, projects they work on, etc.

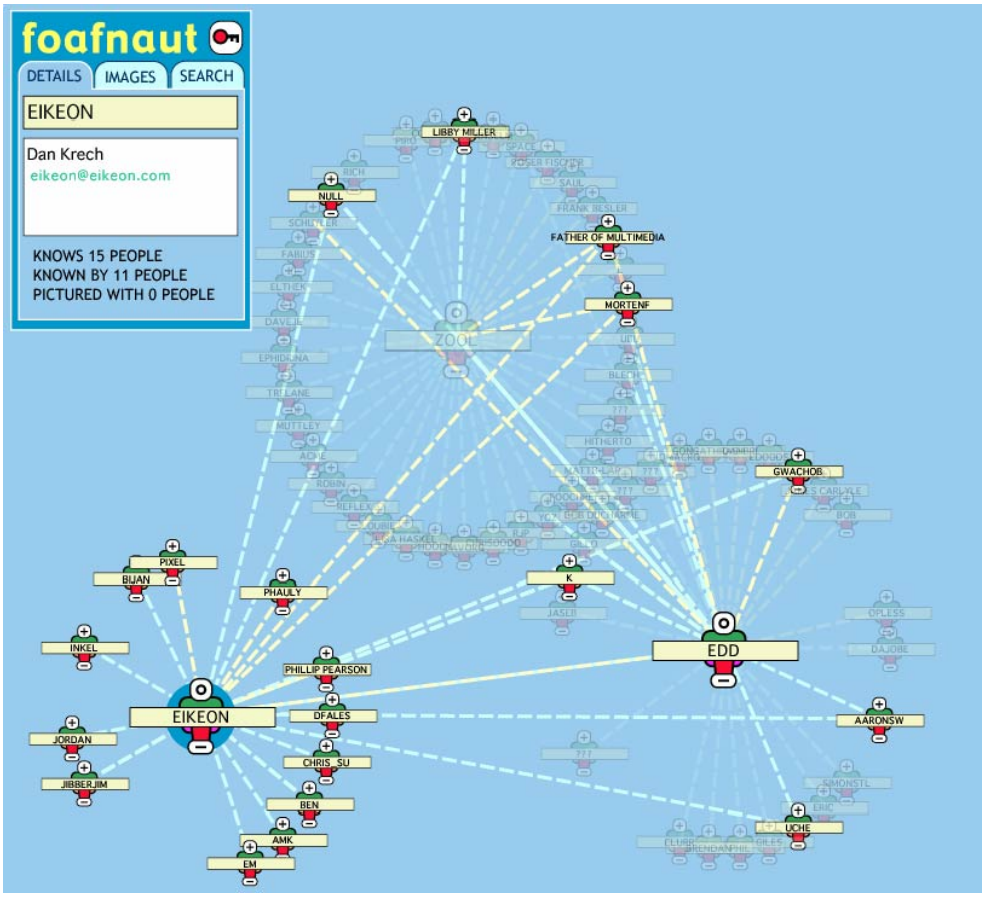
Web interface for displaying complex data

Benefits of SVG, SMIL, RDF integration

Open source collaboration (credits)

Example of RDF network effect combining foaf and rdf image co−depiction

(online demonstration)



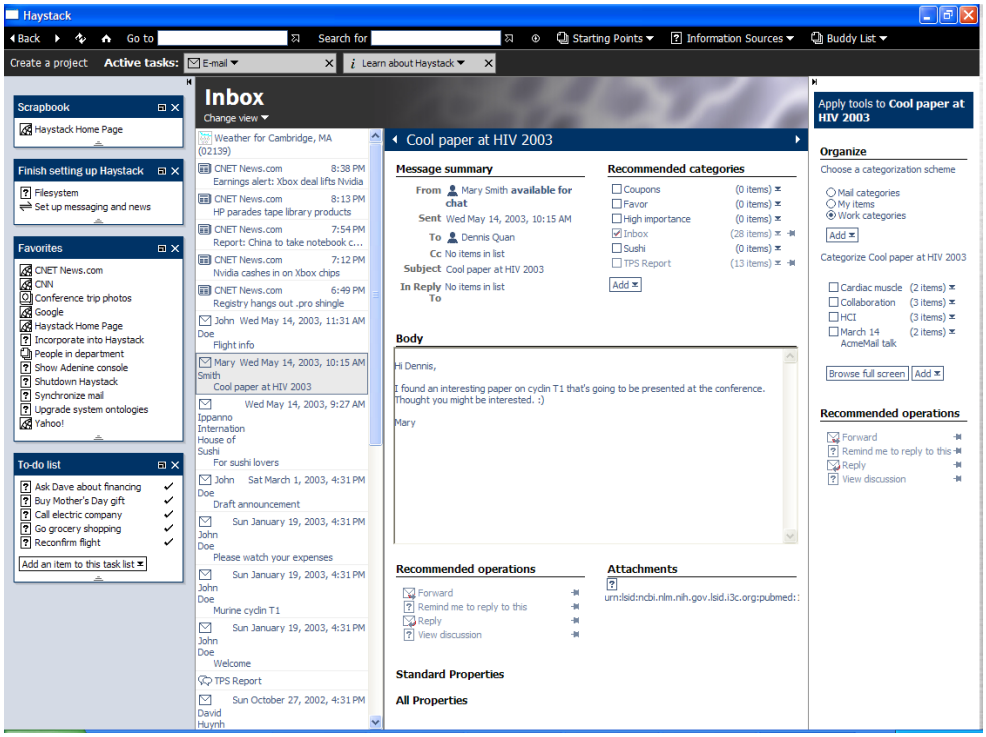
Semantic Web in the Client − Haystack

User configurable universal information client

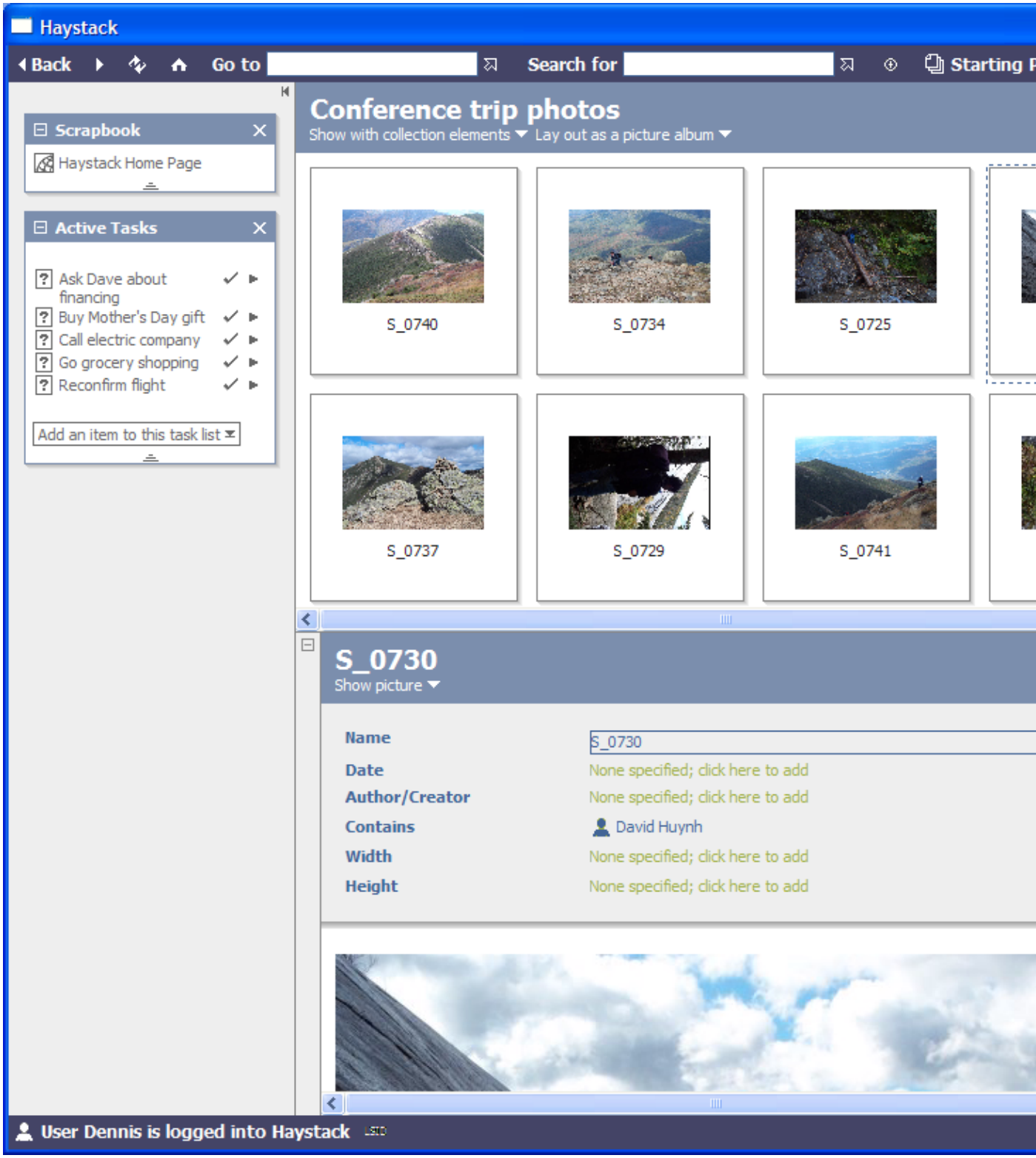
Personalization of information management

Universal information client − benefits from universal model of information

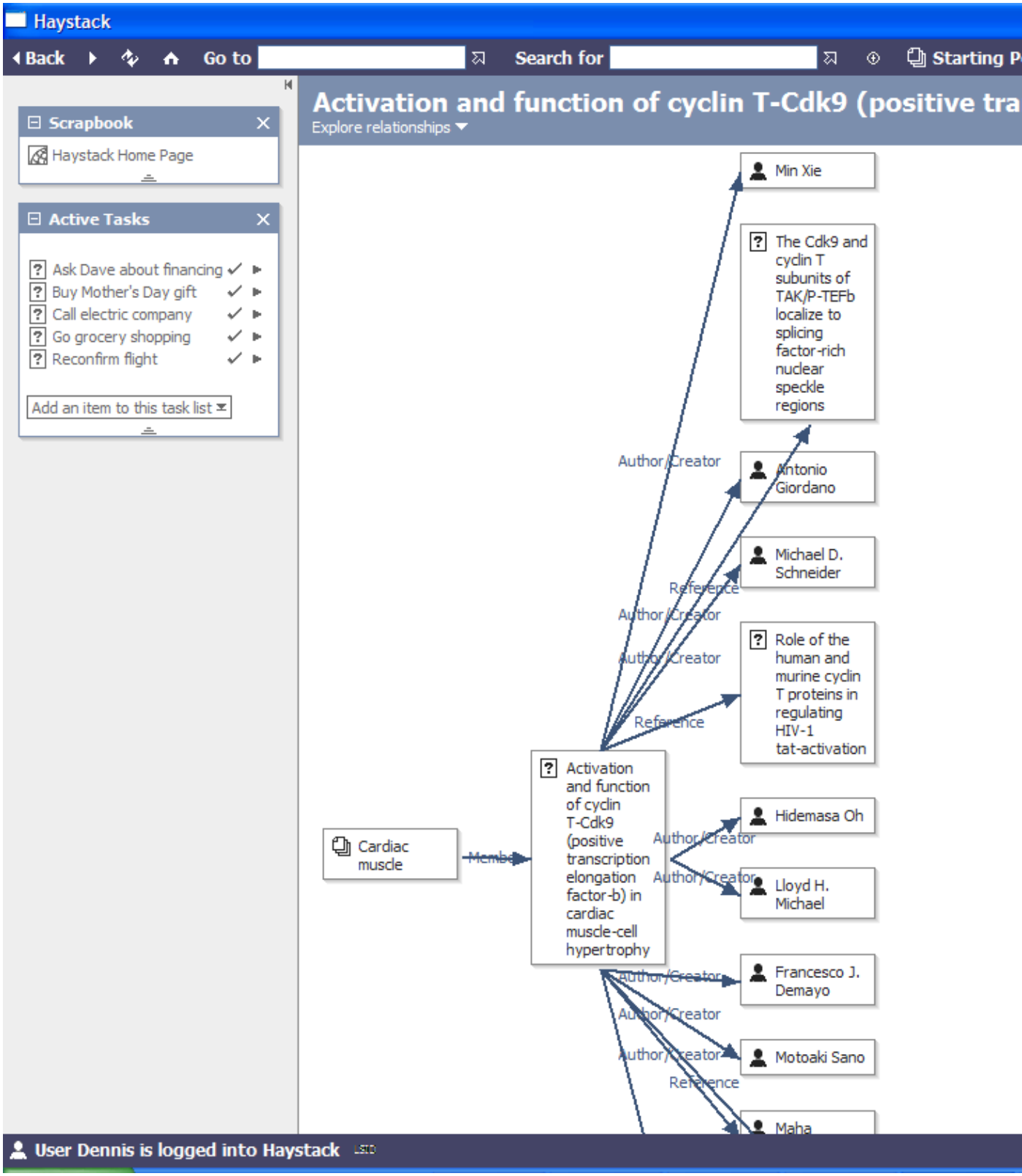
RDF model represents everything − data, layout, preferences, etc.



Haystack − Managing Photo collections



Haystack − Life Sciences Researcher's Desktop



Semantic Web in the Enterprise − Sun's Swordfish

Desire to support effective management and distribution of corporate digital assets.

The Global Knowledge Engineering Group (GKE) in Sun Services division is leveraging W3C's Semantic Web technologies and standards (RDF)

focus on consist use of the Dublin Core Metadata Element Set and several localized terms (e.g. sun:product.)

facilitated by suite of tools and technologies based on Sun's One framework and Open Standards to effectively share RDF vocabularies / taxonomies across the organization

Semantic Web and Content Management − Brandsoft

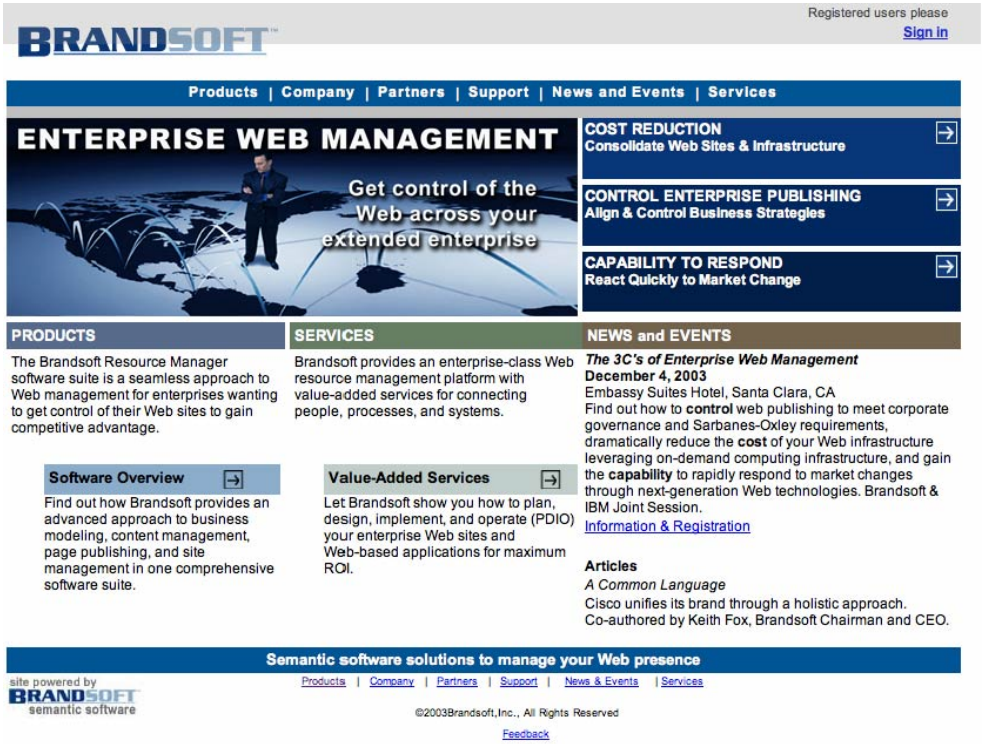
focus on 'Enterprise Business Models'

Strategic models for controlling and publishing Web sites across extended enterprise operations

Models for content management, page publishing, access

Models represented in RDF

Common models allow for distributed maintenance across organization with coherent integrated result



Semantic Web and Searching − TAP

TAP − designed to help enable the Semantic Web by providing some simple tools that make the web a giant distributed Database.

Local, independently managed knowledge bases can be aggregated

Can be recombined / tailored for different applications

TAP 'Semantic Search' − Demonstrates full−text integrated with structured information searching

Search for "Sting" − do you mean 'Sting' the movie? or 'Sting' as in injury from a bee?

Scalable Storage − Tucana

Focusing on using RDF for supporting Enterprise Information Integration (EII)

Develope tools to gather, store and analyze data from relational databases, portals, emails, documents

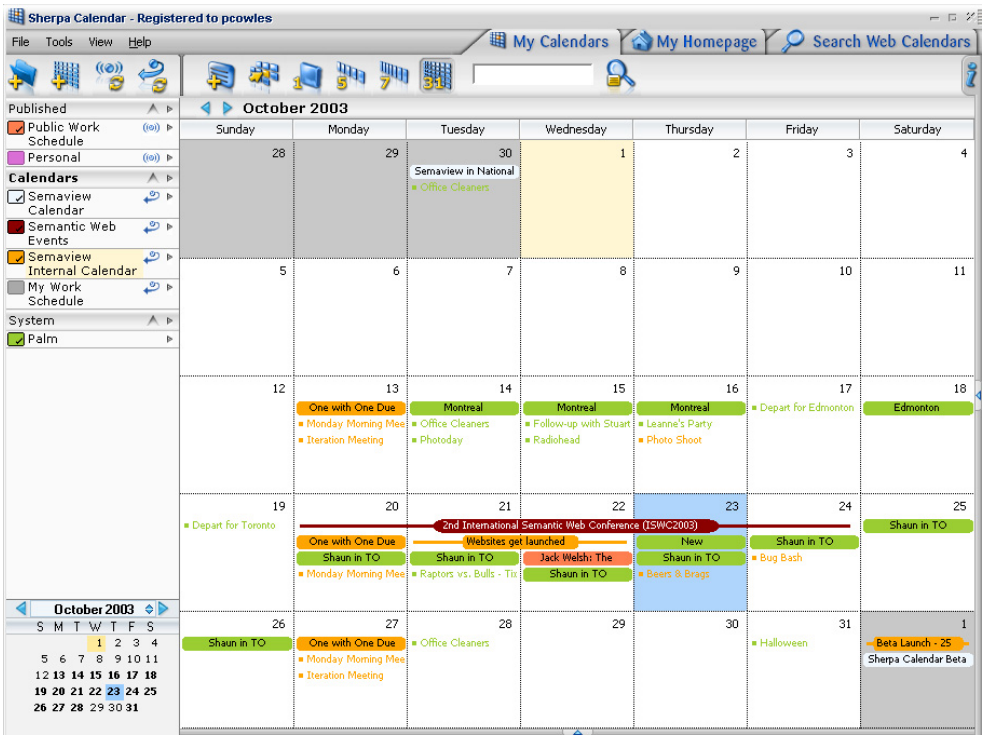
Commercial Tucana Knowledge Server along with Open Source solutions (e.g. Kowari) − "massively scalable, transaction−safe, purpose−built database for the storage and retrieval of metadata."

Semantic Web Calendars − Semaview's Sherpa

RDF representation of calendaring information

Publish and Merge personal (work, home, etc) events

Publish and Merge calendaring events of friends and colleagues



Semantic Web Engines − NetworkInference's Cerebra

commercial product focusing on efficient, scalable reasoning

spin−off of University of Manchester

enterprise−strength software platform that provides business logic inferencing and processing capabilities for developing dynamic policy−driven applications

supports OWL

What this talk didn't cover

but related to deployment ...

Interesting projects: e.g. Simile, SWAD−E

Complementary vocabularies / initiatives: RSS 1.0, FOAF, SKOS, CC, etc.

Enabling Semantic Web toolkits: e.g. HP's Jena, IBM's Semantiks, Sesame, Relands, etc.

Community adoption: e.g. Life Sciences, Creative Commons, etc.

Applications / Best Practices : Describing People / taxonomies, etc.

Specific lessons learned from specific applications

'Gaps' in facilitating integration: ontology construction, simple vs complex, Type'ing, value standardization, supportive vocabularies, etc.

General Lessons Learned from Deployment

RDF as a general information model is applicable to many uses (many of which we never even thought about)

Common data representation and architecture drives down (technical / social) costs

Facilitates serendipitous interoperability − breaking down the barriers of domain knowledge

When "Anyone can say anything about anything", who you trust is important

Beneficial to solving interoperability in Open (rather than Closed) systems

Closed systems are becoming more and more Open − addressing these issues now seems cost effective in long run

Common semantics, when appropriate, advances the integration of heterogeneous content.

Additional information

W3C World Wide Web Consortium
−http://www.w3.org/

W3C Semantic Web Activity
−http://www.w3.org/2001/sw/

Eric Miller, W3C Semantic Web Activity Lead
− http://www.w3.org/People/EM/