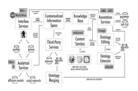
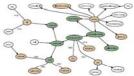


Part I: Presentation of the Project

IDIOM Project Review Austrian Research Promotion Agency Sensengasse 1, 1090 Vienna 20 June 2008

Prof. Arno Scharl MODUL University Vienna Mag. Alexander Szlezak **CEO**, Gentics Software











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Overview



Information Diffusion across Interactive Online Media http://www.idiom.at/

- Work Packages
 - Content & Annotation Services
 - Ontology Services (Extension, Validation)
 - Interface Services (Semantic, Geographic)
 - Analytical Services (Visual, Statistical)
- Use Cases
 - Media Watch on Climate Change
 - CATER Tourism Portal
 - US Election 2008 Web Monitor















Content and Annotation Services



- **Information Sources**
 - **Web Sites**
 - **RSS News Feeds**
 - Web Logs, Wiki Applications
- **Contextualized Information Space** Collaboration platform and knowledge repository annotated along multiple dimensions
 - Semantic Assigning controlled vocabulary concepts
 - Temporal Timestamp for each document (time of validity based on incremental mirroring)
 - **Geospatial** Distinguishing source and target geography
 - Geo-Tagging (Geo-Parsing, Geo-Coding)
 - BBC Article "Vienna Marking Mozart Milestone" Source: Europe / United Kingdom / London Target: Europe / Austria / Vienna

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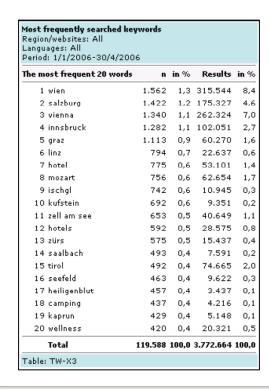






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Acceptance of Geospatial Services



Geospatial Platforms

Google Maps, Google Earth, Map24, MapQuest, Yahoo Maps, ViaMichelin, Microsoft Live Local 2D & 3D. NASA World Wind, aon Routeplanner

- Frequency of Usage (n=1227)
 - 40% at least once a week
 - 73% before traveling
- **Most Requested Services**

Encyclopedias, event and restaurant guides, sports information, travel offers, shopping information

Drivers of Acceptance

Effort expectancy, performance expectancy, facilitating conditions (e.g. hardware requirements)

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Sources of Geospatial Information



- Annotation by the author, manually or through location-aware devices such as car navigation systems, RFID-tagged products and GPS-enabled cellular handsets.
- Determining the location of the server (Whois, Geo IP Tool, monitoring Internet traffic, analyzing the domain of a Web site for additional cues).
- Automated annotation of existing documents. The processes of recognizing geographic context and assigning spatial coordinates are commonly referred to as geoparsing and geocoding, respectively.













idiom **Geotagging Process** Austria Carinthia Tyrol Spittal/Drau Vi**ll**ach compute the location tree Rangersdorf Marterle Lainach Austria, Marterle, Lainach, Rangersdorf extract determine the geo-locations most probable location(s) GeoTagger **K** geo-database return the (gazetteer) result to the client The landmark of Rangersdorf/Lainach is the highest pilgrimage church of Austria - named "das Marterle" - at Marterle:0.95 1,861 m above sea level.

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Overview

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Information Diffusion across Interactive Online Media http://www.idiom.at/

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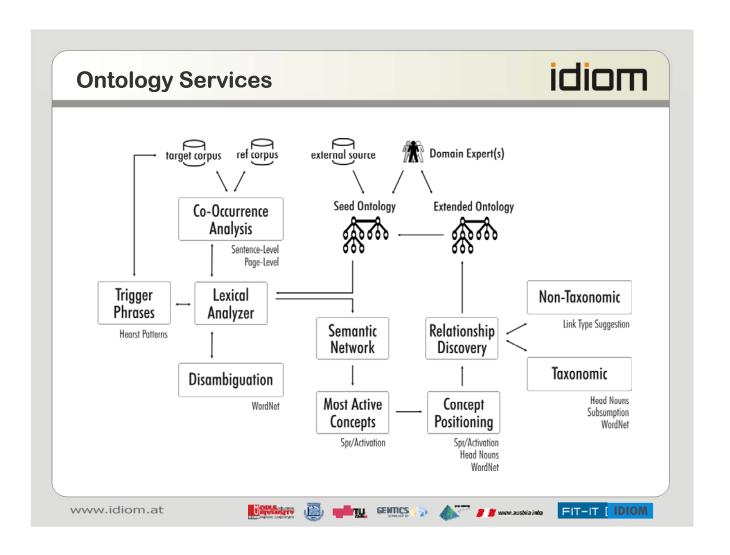


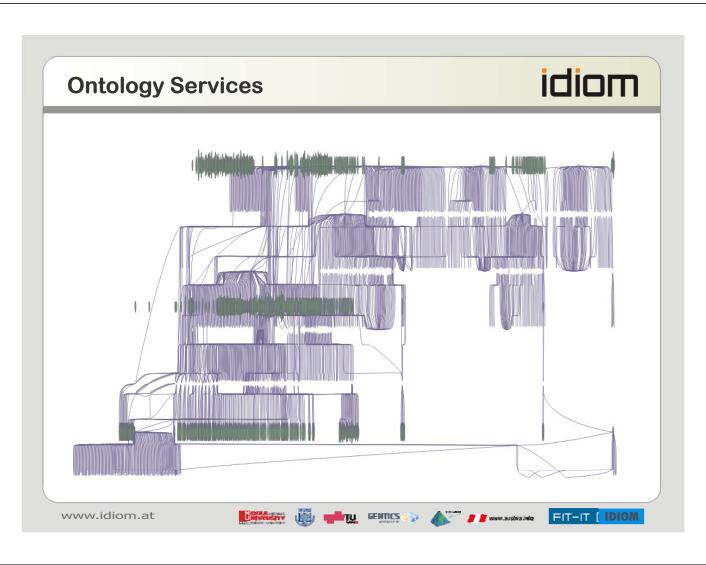


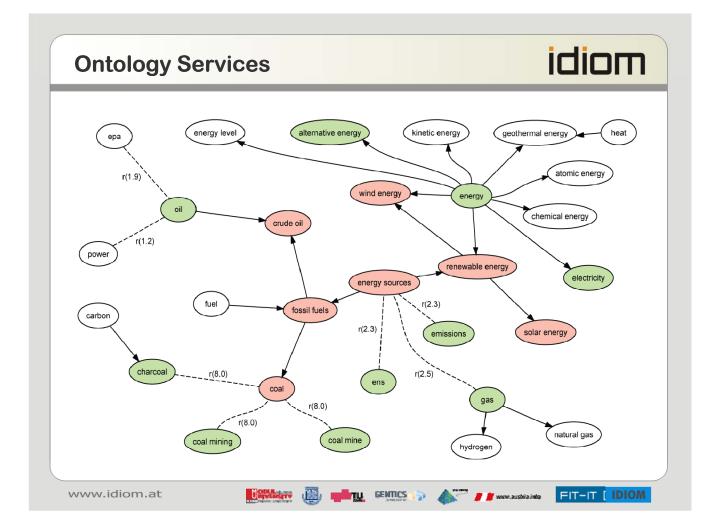












Interface Services



Semantic Interfaces

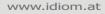
- Ontology-based Visualizations
- Tag Clouds
- Information Landscapes (2D, 3D)

Geospatial Interfaces

- The Geospatial Web "may ultimately be the big disruptive innovation of the coming decade" (Erle et al. 2005, xxv).
- **Data Integration**
 - Cartographic Data
 - Real-World Indicators
 - Geo-tagged Hypermedia



CIA World Factbook





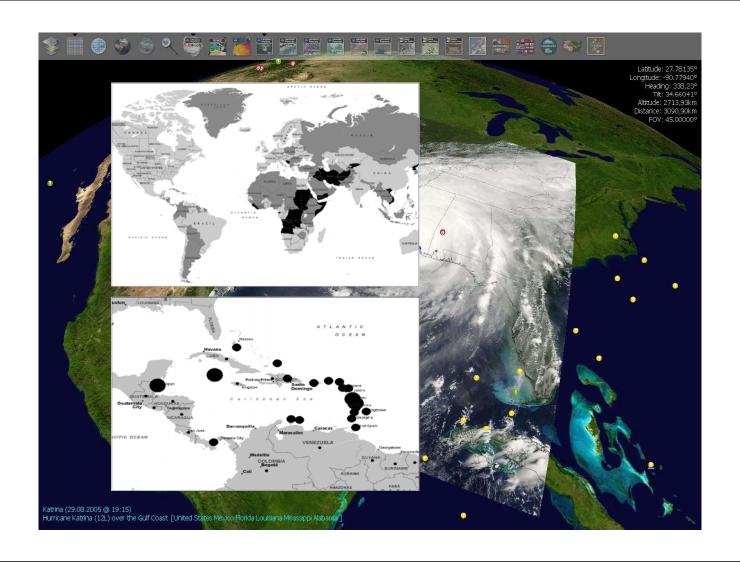












Max Tourism Coverage	Freq	Freq-T	so	SO-T	Freq-%	ApC	RpC
Niue	75	59	.252	.288	78.7	.93	928
Dominica	93	72	.168	.171	77.4	1.05	736
Cook Islands	74	57	.037	.061	77.0	2.03	1,198
Maldives	303	221	.066	.065	72.9	1.66	937
Cayman Islands	191	138	.129	.104	72.3	6.82	13,572
Belize	218	154	.195	.153	70.6	.81	487
N Mariana Islands	22	15	.161	.017	68.2	5.77	8,370
Martinique	30	20	070	051	66.7	1.04	570
French Polynesia	98	65	.190	.253	66.3	.80	1,224
Netherlands Antilles	65	43	.070	.128	66.2	1.24	3,878
Min Tourism Coverage	Freq	Freq-T	so	SO-T	Freq-%	ApC	RpC
Min Tourism Coverage Djibouti	Freq 82	Freq-T	.030	SO-T 042	Freq-% 12.2	ApC .04	RpC
Djibouti	82	10	.030	042	12.2	.04	9
Djibouti Kiribati	82 70	10	.030	042 .068	12.2 12.9	.04	9 30
Djibouti Kiribati Serbia & Montenegro	82 70 1835	10 9 244	.030 .064 021	042 .068 058	12.2 12.9 13.3	.04 .05 .04	9 30 7
Djibouti Kiribati Serbia & Montenegro Kyrgyzstan	82 70 1835 768	10 9 244 119	.030 .064 021 123	042 .068 058 205	12.2 12.9 13.3 15.5	.04 .05 .04 .01	9 30 7 5
Djibouti Kiribati Serbia & Montenegro Kyrgyzstan French Guiana	82 70 1835 768 212	10 9 244 119 34	.030 .064 021 123 018	042 .068 058 205 061	12.2 12.9 13.3 15.5 16.0	.04 .05 .04 .01 .34	9 30 7 5 235
Djibouti Kiribati Serbia & Montenegro Kyrgyzstan French Guiana Togo	82 70 1835 768 212 305	10 9 244 119 34 52	.030 .064 021 123 018	042 .068 058 205 061 014	12.2 12.9 13.3 15.5 16.0 17.0	.04 .05 .04 .01 .34 .01	9 30 7 5 235 2
Djibouti Kiribati Serbia & Montenegro Kyrgyzstan French Guiana Togo Moldova	82 70 1835 768 212 305 209	10 9 244 119 34 52 36	.030 .064 021 123 018 .080	042 .068 058 205 061 014	12.2 12.9 13.3 15.5 16.0 17.0	.04 .05 .04 .01 .34 .01	9 30 7 5 235 2 12

Semantic Interface Services

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- **Ontology-based Visualizations,** Tag Clouds (via Web Map Server)
- **Knowledge Planets**
 - Topography of Information Landscape
 - Peak = Cluster of Documents on a Specific Topic
 - Ocean, Valley = Sparsely Populated Part of the Information Space
 - Projecting Information Landscapes onto **Virtual Globes**
 - Initial Arrangement and Stability of Topics
 - Seamless Navigation across Layers and 0° Meridian Line

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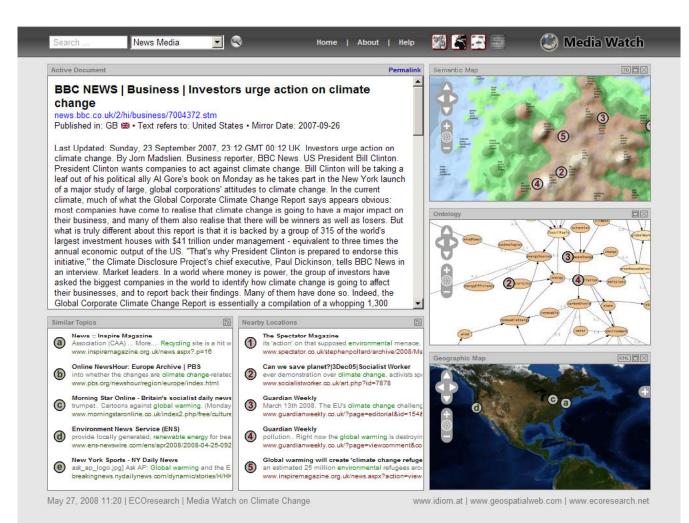


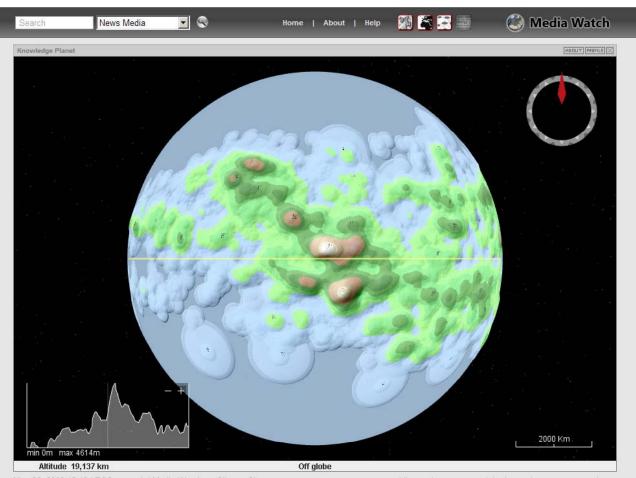


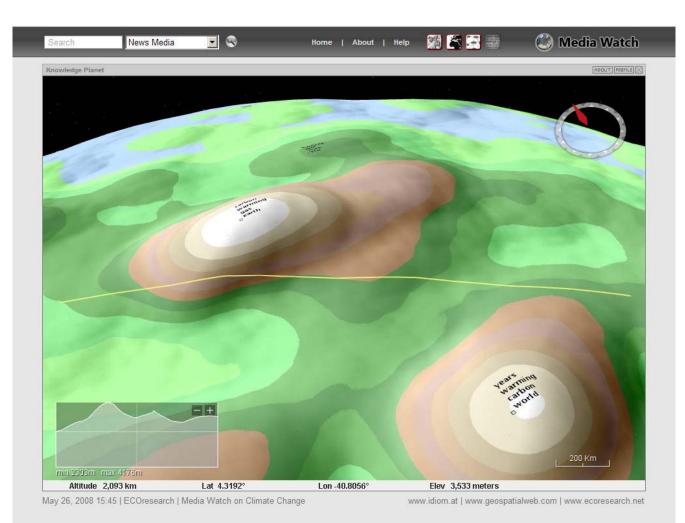


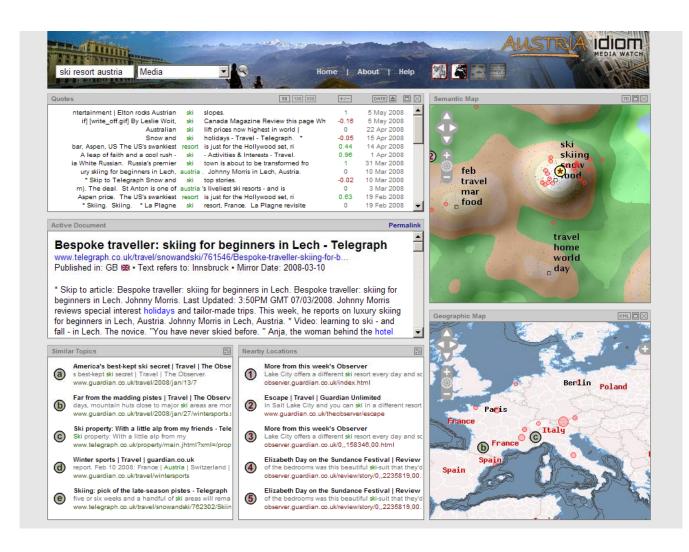
Tightly Coupled Views Main IDIOM JavaScript Object **Main View Semantic Map** 5 6 **Similar Topics Nearby Locations** Geographic Map

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CATER Portal Evaluation



Criteria

- Perception of search metaphors (ontology, tag cloud, semantic map, geographic map).
- Usability, navigational design, usefulness, interactivity, robustness, aesthetic appeal, content quality, system availability, informativeness, believability.

Methods

- Experiment Two tasks (goal-directed search versus exploratory browsing) monitored on four portal variations
- Questionnaire Pretest (n=383) and Evaluation (n=441)
- Log File Analysis

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Analytical Services



- How do macroscopic information flows shape public opinion? What are appropriate methods to measure and model the extent, dynamics and latency of this process? [US Election 2008 Use Case]
- Which content placement strategies increase the impact on the target audience and support self-reinforcing content propagation in virtual communities? [Facebook, OpenSocial]
- How widespread is content redundancy, and what influences content replication within and across information networks? [IDIOM Phase IV]

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Barack Obama Statistics "More Perfect Union" Speech Wins Super Tuesday Denounces Rev Wright 'Elitist' comments Loses Pennsylvania Wins Iowa Caucus **Media Attention** Rev Wright NAACP Speech 15000 11250 7500 3750 Sentiment 0.300 0.238 0.175 0.113 0.050 12/31 1/7 1/14 1/21 1/28 2/4 2/11 2/18 2/25 3/3 3/10 3/17 3/24 3/31 4/7 4/14 4/21 4/28 5/5 10/22 www.idiom.at University BENTICS I Www.austria.info



Social Media Applications



Web 2.0

- Governed by strong network effects and harnessing collective intelligence through customer-self service and algorithmic data management (O'Reilly 2005)
- Blurs the distinction between content production and content consumption

Facebook Application Development

- Gather data for social network analysis
- Analyze viral dissemination effects
- Sentiment detection and validation by means of crowdsourcing
- Investigate hostile media effects





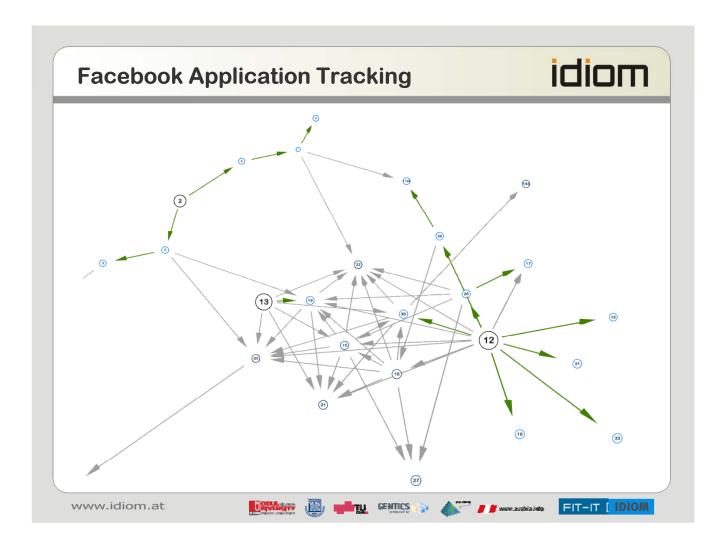


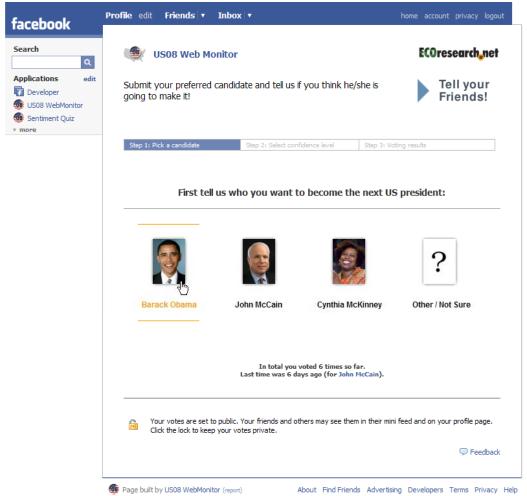


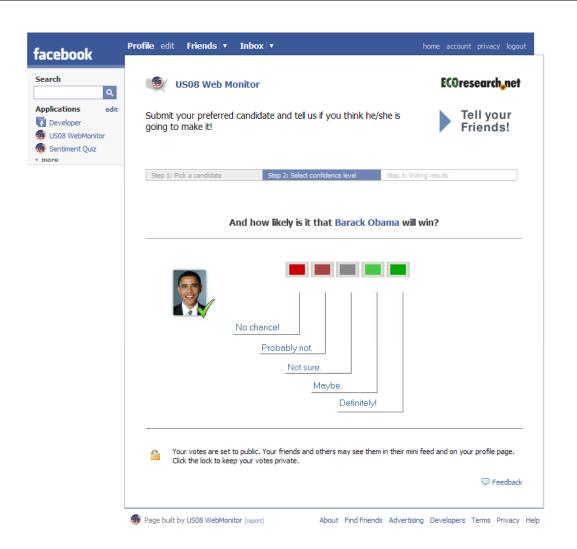




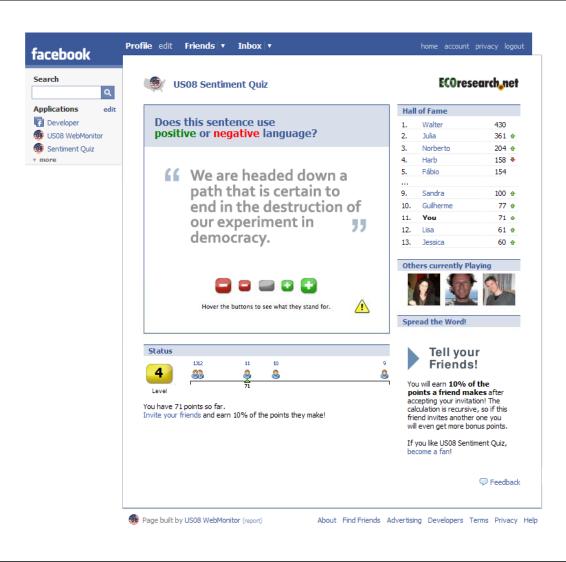












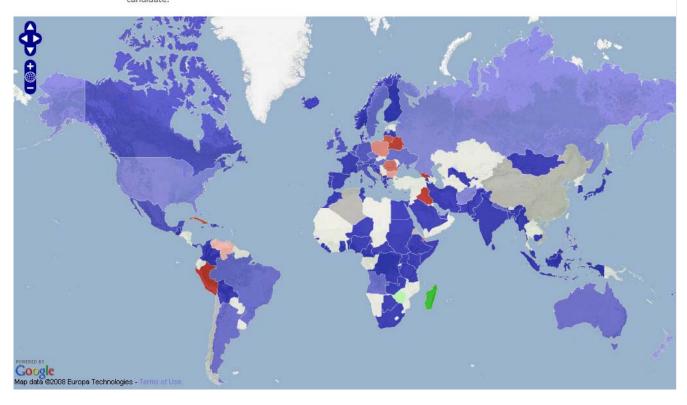


US08 Media Watch

ECOresearch Network

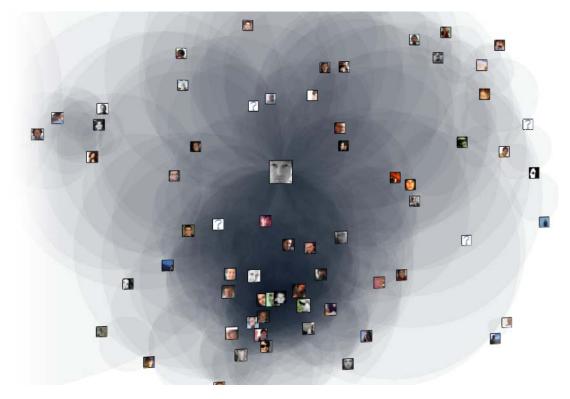
IDIOM Project

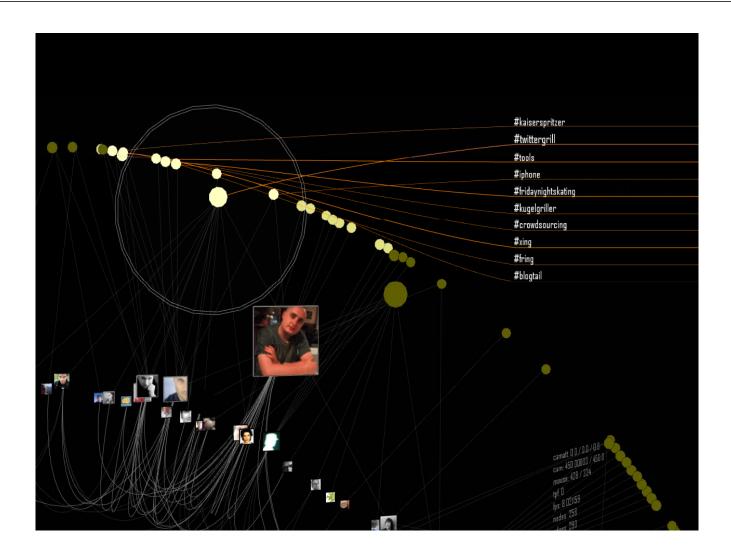
User Poll Results The US Election 2008 Web Monitor aims to analyze both the production and consumption of electronic resources. Therefore, the system not only aggregates and visualizes online coverage, but also lets each individual user vote for a particular candidate.



Social Network Analysis

Visualizing the social graph identifies relations among users of the US Election 2008 Web Monitor. The proximity of two individuals shows how closely related they are in terms of their personal contacts. Such visual methods reveal hubs and clusters, and help explain how these structures impact information diffusion within social networks.





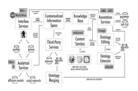


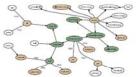
Part II: Market Vision

IDIOM Project Review Austrian Research Promotion Agency Sensengasse 1, 1090 Vienna 20 June 2008

Prof. Arno Scharl MODUL University Vienna

Mag. Alexander Szlezak **CEO**, Gentics Software











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Exploitation Summary



- **Knowledge Acquisition and Management**
 - Unearth hidden knowledge and make it accessible within an organization
- **Market Research**
 - Measuring the Effectiveness of Campaigns
 - **Brand and Product Perception**
 - Viral Marketing, Leveraging the Power of Social **Networks**
- **Web Portals**
 - Advanced Search Engines
 - Visual Navigation Systems
 - Frontend for Semantic Technologies













Challenges for Enterprises



Business challenges where semantic services catalyze innovation:

- User-friendly, context-sensitive access to knowledge repositories (formal and informal)
- Finding relevant information in a certain context across multiple IT systems
- Storage optimization and data lifecycle management (identify irrelevant data)
- Linking structured and unstructured data

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External Applications



- Trend scouting and monitoring; e.g., in product development, campaining, crisis management
- Augmentation of media monitoring and clipping services
- Competitive analysis e.g., product and price comparisons
- e-Commerce personalized product offerings, recommender systems















Austria.Info



- Insights into the usage of visual navigational aids on tourism portals
- Potential integration of search metaphors within the Austria.info portal
- **Provision of domain-specific semantic** search functionality
- **Community features (Web 2.0)**
- **Opinion monitoring and mining**



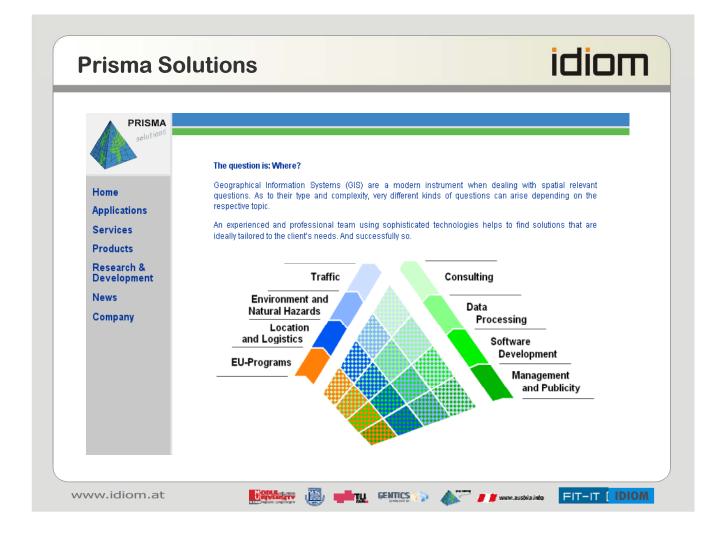












Prisma Solutions



- Integration of semantic and geospatial Web technologies
- **Building ontologies automatically based** on heterogeneous archives of structured and unstructured information
- **Ontology validation**
- **Ontology visualization and** Web-based editing
- **Environmental applications**















Gentics Software





Gentics Software



PORTAL.NODE 3 PORTAL.NODE 3 SDK

CONTENT.NODE 4



Leading Austrian CMS and Portal Developer

- 131 Customers
- 31 Partners in Germany and Austria
- 670 CMS and Portal Projects
- ~70.000 Portal Users
- ~5000 CMS Users















Exploitation Potential



Availability of Technology

- External IDIOM technology to be made available as SAAS (Software as a Service), provided by business partners for corporate marketing services within enterprise portals
- Internal Corporate search infrastructure analyzing file services and unstructured data repositories

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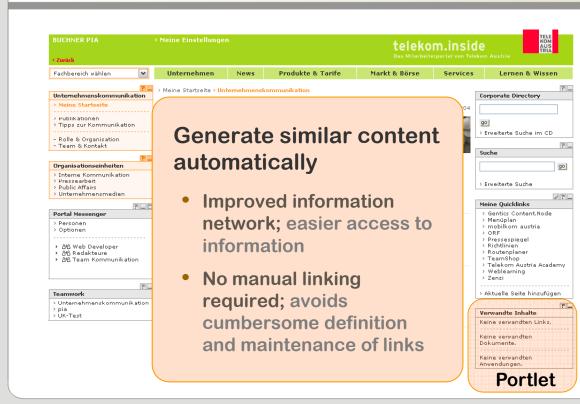
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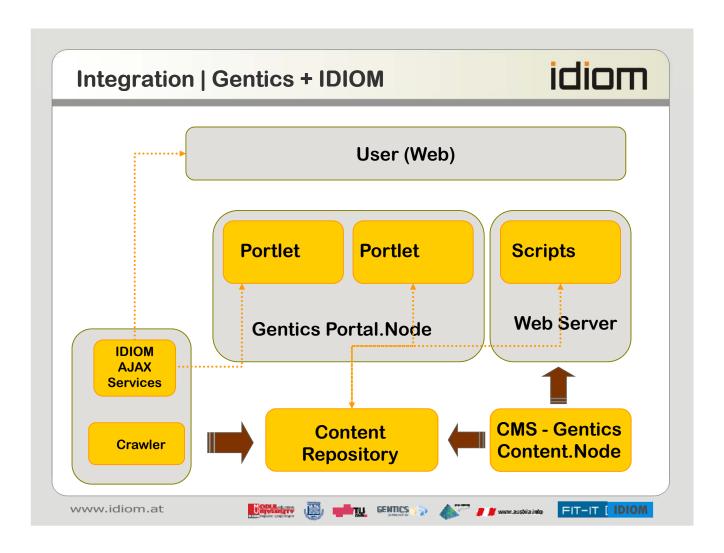


CENTICS WWW.austria.into FIT-IT [IDIOM

Intranet Application







Dissemination



Refereed Publications

- Journal Articles: 6
- Conference Proceedings: 8
- Books: 1
- Book Chapters: 4

News Media Coverage

- Austria: ORF (Futurezone, Ö1), derStandard, APA, etc.
- International: Die Welt, Computerwoche, NASA, MIT, etc.

Web Site Traffic

monthly averages | www.ecoresearch.net

- 15,000 Visits
- 200,000 Page Views













