In Search

Dr. J. Schwarz da Silva
Director, DG-INFSO, European Commission

National Initiatives on Multimedia Content Description and Retrieval
CHORUS Event, Geneva, 10 October 2007
Eighty five percent of internet users use search engines to get to where they want to go.

Typing “Google” is easier than remembering a specific website spelling, its toolbar is by far the most dominant interface to today’s WEB information.
What is the Chorus Project?

CHORUS Project home
Homepage of the Department of Computational Linguistics and Phonetics at the University of the Saarland in Saarbrücken, Germany.
www.cull.unis-saarland.de/projects/chorus/ - 6k - Cached - Similar pages - Note this

SFB 378: project C4 CHORUS
The Chorus project is concerned with the semantic processing of natural language utterances, i.e. determining their meaning...
www.cull.unis-saarland.de/projects/sfb378/previous/projects/CHORUS-en.html - 6k - Cached - Similar pages - Note this

Join Chorus Project
C'piace definire il genere musicale del Join Chorus Project HDPE MUSIC, musica della speranza.
Eseguiamii canti di ispirazione cristiana, con
http://www.jcp.it/

Hallelujah Chorus by Oratorio Chorus - Project Gutenberg
Download the free music file: Hallelujah Chorus by Oratorio Chorus
www.gutenberg.org/ebooks/10277 - 10k - Cached - Similar pages - Note this

INRIA - Press - European Commission selects INRIA to coordinate the...
European Commission selects INRIA to coordinate the CHORUS project, focused on tomorrow's multimedia search engines--------- ...
https://www.inria.fr/presse/pre161. en.html - 12k - Cached - Similar pages - Note this
Welcome to Integrating-ACC
The project which was financed under the EU 6th Framework National Contact Points from 22 counties to establish best practice.
http://www.sustdev-ncps.com/eventdetail.asp?id=60

Power Industry and Gas Industry Exhibition - Energi.
Participation in the Information Day "INDUSTRYLINK 2004" how to participate in the projects of the 6th EU Framework Programme, while special workshops provided instruction.

Fashion To Future - Home
Fashion To Future is a project co-financed by the EU 6th Framework Programme on the competitive SMEs to participate in future European.
http://www.fashionofthefuture.eu/

Institut für Computergraphik und Algorithmen - Abteilung für Virtuelle Wirklichkeit - Harry Wechsung.
Virtual reality to create next generation realtime 3D libraries.
http://www.cg.tuwien.ac.at/research/vr/

LEBIC - LEBIC has started to participate as partner
Actually EU projects LEBIC has started to participate as partner in the project.
http://lebic.lv/projekt/es/alipro.html

Research - European Research 2002
The European Research Area and the Framework Programme ... presenting the aims and results of research projects carried out under past EU research ... europa.eu/research/conferences/2002/index_en.html - 25k - Cached - Similar pages - Note this

PDF The Sixth Framework Programme in brief
EU. Framework Programme for Research and Technological Development (FP6). ... virtually all actions of FP6, from participation in research projects to ... europa.eu/research/fp6/pdf/fp6-in-brief_en.pdf - Similar pages - Note this

UIC - List of projects
Participation in 6th EU framework Programme. E.U. Project ... LCC formulation developed within the project, based on best LCC practices at EU level and ... www.uic.ac.es/bassinfo/proyct/proyct.php?id=61 - 27k - Cached - Similar pages - Note this

FSF Europe - Recommendation for the 6th EU Framework Programme
This document explains some of the reasons why Free Software should be included in the considerations on the 6th European Community framework programme ... www.fsf-europe.org/documents/fp6/recommendation.en.html - 13k - Cached - Similar pages - Note this

Recommendation by the FSF Europe and supporting parties for the ... research centers and projects for the 6th EU framework programme. Free ... The most successful and best known Copyleft license is the GNU General
Which is the best multimedia search engine in the World?

When you search for something at a traditional search site, you get the best results from its indexed version of the Web by entering keywords or tight, concentrated phrases.

Are we getting closer to asking the right questions?

Are we getting closer to context, meaning and nuances (natural language)?
Is this where Search is?

1910

1960
Content - From Abundance to Pollution?

- 2006 “digital production”: 160 exabytes, fuelled by user generated content, 12 book stacks from earth to sun;
- 6 fold increase expected by 2010, 990 exabytes (pro + non pro)
- Recorded outputs of every human language since world began: 5 exabytes;
- Within 3 years, 70% of created and archived content expected to come from users;
- Europe and US, about 75% of content origin. Expected to decrease (in proportion), as Asia Pacific grows;
- Networked amplified phenomenon: 253 Million e-mail boxes in 1998, 1.6 Bn today;
  - Unprecedented connectivity,
  - Terabyte personal storage
  - Device size, mobility/location, ubiquity

Source: IDC consultancy report,”The expanding Digital Universe” March 2007
Some search opportunities

Babelgum's slogan is: "TV experience, Internet substance."
Veoh slogan: "VeohTV makes watching Internet as simple as watching television."
Joost slogan: "The new way of watching TV."
Understanding the Users’ needs

Google Street View

NY Times on a mobile screen
# Mobile Users: Global Search + Local Find

## Worldwide Mobile Internet Users, Mobile Search Users and Mobile Search Advertising Revenues, 2006-2011 (millions)

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Internet users</td>
<td>337.3</td>
<td>405.5</td>
<td>489.6</td>
<td>596.4</td>
<td>757.1</td>
<td>982.4</td>
</tr>
<tr>
<td>Mobile search users</td>
<td>266.0</td>
<td>327.2</td>
<td>410.7</td>
<td>516.8</td>
<td>672.3</td>
<td>901.1</td>
</tr>
<tr>
<td>Mobile search ad revenues*</td>
<td>$6.8</td>
<td>$63.1</td>
<td>$221.3</td>
<td>$580.3</td>
<td>$1,148.9</td>
<td>$2,361.5</td>
</tr>
</tbody>
</table>

*earned from sale of display or text listings alongside mobile search results

Source: eMarketer, July 2007
### comScore Core Search Report*
**August 2007**
**Total U.S. – Home/Work/University Locations**
**Source: comScore qSearch 2.0**

<table>
<thead>
<tr>
<th>Core Search Entity</th>
<th>Jul - 07</th>
<th>Aug -07</th>
<th>Point Change Aug-07 vs. Jul-07</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Core Search</strong></td>
<td>100.0%</td>
<td>100.0%</td>
<td>N/A</td>
</tr>
<tr>
<td>Google Sites</td>
<td>55.2%</td>
<td>56.5%</td>
<td>1.3</td>
</tr>
<tr>
<td>Yahoo! Sites</td>
<td>23.5%</td>
<td>23.3%</td>
<td>-0.2</td>
</tr>
<tr>
<td>Microsoft Sites</td>
<td>12.3%</td>
<td>11.3%</td>
<td>-1.0</td>
</tr>
<tr>
<td>Time Warner Network</td>
<td>4.4%</td>
<td>4.5%</td>
<td>0.1</td>
</tr>
<tr>
<td>Ask Network</td>
<td>4.7%</td>
<td>4.5%</td>
<td>-0.2</td>
</tr>
</tbody>
</table>
74.5% users take Baidu as their primary search engine, increased from 62% from one year ago, while Google China’s market share slipped significantly from 25.3% to 14.3%. (CNNIC 25.09.2007)
### Social Networking Goes Global

#### Worldwide Growth of Selected* Social Networking Sites
June 2007 vs. June 2006
Total Worldwide Home/Work Locations Among Internet Users Age 15+
Source: comScore World Metrix

<table>
<thead>
<tr>
<th>Social Networking Site</th>
<th>Total Unique Visitors (000)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jun-06</td>
<td>Jun-07</td>
</tr>
<tr>
<td>MySpace</td>
<td>66,401</td>
<td>114,147</td>
</tr>
<tr>
<td>Facebook</td>
<td>14,083</td>
<td>52,167</td>
</tr>
<tr>
<td>Hi5</td>
<td>18,098</td>
<td>28,174</td>
</tr>
<tr>
<td>Friendster</td>
<td>14,917</td>
<td>24,675</td>
</tr>
<tr>
<td>Orkut</td>
<td>13,588</td>
<td>24,120</td>
</tr>
<tr>
<td>Bebo</td>
<td>6,694</td>
<td>18,200</td>
</tr>
<tr>
<td>Tagged</td>
<td>1,506</td>
<td>13,167</td>
</tr>
</tbody>
</table>
The Power of Social Networking

- 1 Billion subscribers in Social Networking Websites WorldWide
- 154 Million people accessing a Social Networking Website every day
- 3 Billion minutes spent on Social Networking every day
- 8 Billion pages accessed on Social Networking Websites every day
Trend is to offer a bundle of networked media services
Virtual Worlds

How to archive, categorize and search this flood of data?
## European Users in Second Life

**Geographical Location of Second Life Residents Who Logged-in During January and March 2007**

**Unique People, Age 15+**

**Total Worldwide Audience – Home and Work Locations**

*Source: comScore World Metrix*

<table>
<thead>
<tr>
<th>Region</th>
<th>Mar-07 (000)</th>
<th>Percent of Total Active Residents</th>
<th>Increase In Active Residents Mar-07 vs. Jan-07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worldwide</td>
<td>1,283**</td>
<td>100%**</td>
<td>46%</td>
</tr>
<tr>
<td>Europe</td>
<td>777</td>
<td>61%</td>
<td>32%</td>
</tr>
<tr>
<td>Germany</td>
<td>209</td>
<td>16%</td>
<td>70%</td>
</tr>
<tr>
<td>France</td>
<td>104</td>
<td>8%</td>
<td>53%</td>
</tr>
<tr>
<td>UK</td>
<td>72</td>
<td>6%</td>
<td>24%</td>
</tr>
<tr>
<td>North America</td>
<td>243</td>
<td>19%</td>
<td>103%</td>
</tr>
<tr>
<td>USA</td>
<td>207</td>
<td>16%</td>
<td>92%</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>167</td>
<td>13%</td>
<td>N/A***</td>
</tr>
<tr>
<td>Latin America</td>
<td>77</td>
<td>6%</td>
<td>26%</td>
</tr>
<tr>
<td>Middle East &amp; Africa</td>
<td>20</td>
<td>2%</td>
<td>N/A***</td>
</tr>
</tbody>
</table>
The Transition to the 3D Internet

Virtual worlds provide a rich space in which to understand 3D search.
Our contribution to focused R&D

CHORUS
Networking and co-ordination of research and innovation activities
Definition, organisation and management of joint or common initiatives (e.g., this meeting!)
Dissemination of ‘good practices’, information systems
R&D roadmap: expert groups, think tank

VITALAS & PHAROS
Generate the new knowledge: fill the “semantic gap”
“generic plug-in platform). Both IPs integrate a critical mass of activities and resources
Achieve ambitious, clearly-defined S&T objectives
Collaborative European dimension.

SAPIR
P2P SE
 
TRIPOD
GIS SE
 
SEMEDIA
AV files
 
VICTORY
3D SE
 
DIVAS
Direct search (no meta-data)
 
RUSHES
Raw images
 
VIDIvideo
Progress and results so far?

- Discover advanced solutions for organising, searching and accessing large-scale distributed audio-visual content & 3D objects
  - VICTORY: first 3D search engine in Europe
  - VITALAS: tackling the visual and textual information together (multimodal fusion strategy)
- Stimulate innovation beyond existing research efforts and identify the future orientations
  - CHORUS: think tank, use-cases, benchmarking, roadmap
- Develop technologies to represent & interpret, navigate & retrieve audio-visual objects
  - SAPIR: a P2P search engine, no centralized approach to semantics
- Strengthen adaptive search by content and/or context, tested in realistic settings, based on relevance feedback.
  - PHAROS (plug-ins, mobile platform) TRIPOD (Geo-referenced search, 3D city models)
- Develop methods of information retrieval (knowledge discovery, metadata extraction, annotation and summarisation, indexing) of diverse content types (text, image, video, audio, 3D graphical objects, etc)
  - DIVAS (direct search, no metadata) SEMEDIA (web semantics tools)
  - RUSHES (socially-derived profiling & raw video indexing), VIDI VIDEO (TREC-VID competition)
EU search engine R&D emphasis is on

- Future user and service requirements including ubiquitous access (fixed / mobile)
- Handling the context of search (e.g. geographical awareness)
- Multiple environments (local, enterprise, open internet)
- Placing work in a systems context (standardisation, interoperability, bottom-up management of complex adaptive systems)
- Addressing search as a packaged offer, integrated with networked services
- Capturing the semantic aspects of search
- R&D with a clear exploitation drive (industrial participation)
Our ambition - Help you sail into the Future

- Be anchored on a solid portfolio of well coordinated projects
- Look into the future and anticipate user requirements
- Develop new knowledge and disrupt “orthodox” thinking
- Create new technological opportunities for EU industry to shape the future
- Help EU industry to conquer global markets