Participation of Korean SMEs in FP

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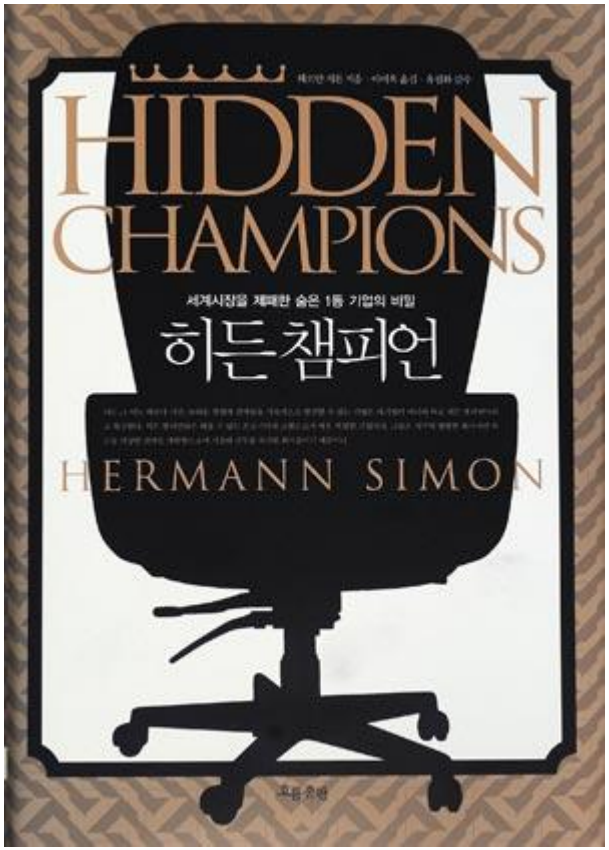
Saltlux
Value Innovation Partner

1. Introduction
2. FP7 LarKC Project
3. Why Korean SME - Saltlux?
4. Summary and Conclusion

21C Hidden Champions



- 2007, Hermann Simon (2nd Edition)
- 2,000 Great SMEs in World

- Avg. History : 61 years
- Avg. Revenue : 430M$
- Avg. Export ratio : 61.5%
- Avg. ROI : 13.6%
- Avg. R&D Invest. : 5.9%
- Avg. # of Emps : 2,047

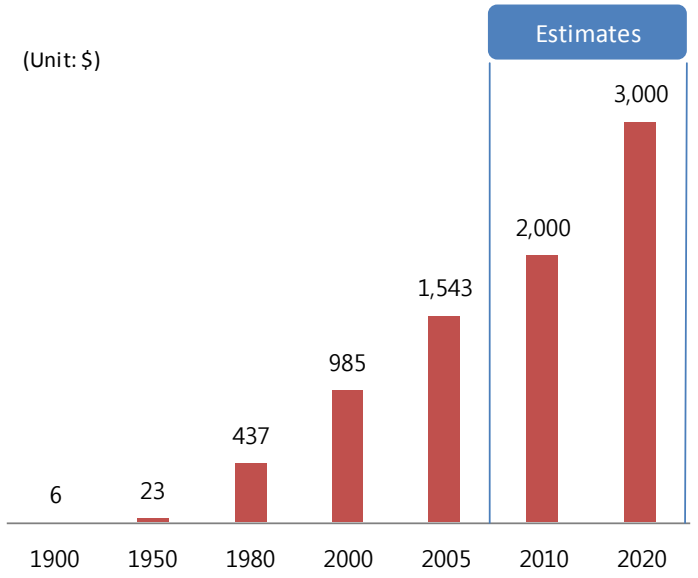
Hidden Champions : Two Growth Engines

- **Globalization**
  - 10~100 times increasing of revenue
- **Innovation**
  - Technology Innovation
  - Process Innovation

Hidden Champions : Globalization

Overseas branches of small and medium Hidden Champions

Company	Main Business	Revenue (Euro in Million)	The # of Overseas Branches
Germanischer Lloyd	Issuing of Ship Certificates	318	171
Semikron	Diode/Thyristor Modules	270	35
Binzel	Welding Burner	80	30
Netzsch	Pumping/Grinding Technology	216	28
heraeus Electro-Nite	Steel Mill Sensors	300	23
Balluff	Sensor Technology	200	23
KTR Kupplungstechnic	Clutch Technology/Clutches	110	19
Kleffmann Group	Agricultural Market Study	13	17
BrainLAB	Surgical Software	141	16
Simon-Kucher	Pricing Consulting	64	12
Taprogge	Water Circulation	50	8
Uniplan	Business Consulting	70	7
Schneeberger	Linear Technology	90	5



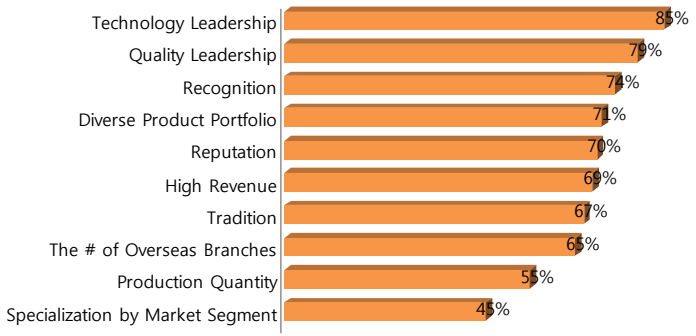
The changes in exportation per capita in the world

Hidden Champions : R&D Investment

R&D Investment

Research Institution		R&D Investment
German Institute for Economic Research (both research & development)		3.0%
German Machining Companies		3.5%
Booz-Allen (the world's top 1,000 companies)		4.2%
Hidden Champions	**Main Business**	**R&D Investment**
Median		**5.9%**
ScheBo Biotech	Biotech Technology for Exterior Diagnosis	20%
Windpilot	Wind Control System for Yachts	20%
GEUTEBRÜCK	Surveillance System	15%
Heidenhain	Length & Angle Measurement Technologies	15%
Binder	Temperature Measurement or Thermostat Case	13%
BrainLAB	Medical Software	11%
Vitronic	Industrial Image Processing	More than 10%
ZÖLLNER	Warning System for Railway Construction Sites	More than 10%
Carl Zeiss SMT	Waferstepper	More than 10%
Firmenich	Aroma/Fragrances	10%
Jenoptik	Photonic & Mechatronic Technologies	10%
Omicron	Scanning Tunneling Microscope	10%
alki-Technik	Screw System	10%
JK Ergoline	Solarium	10%
Kontron	Embedded Computer	10%
LOBO Electronic	Laser & Multimedia Systems	10%
QIAGEN	Molecular Analyzer	10%
Soring	Ultrasonic Tissue Destruction Instrument	10%
Dr. Suwelack	Collagen	10%

Major Factors for Market Competency



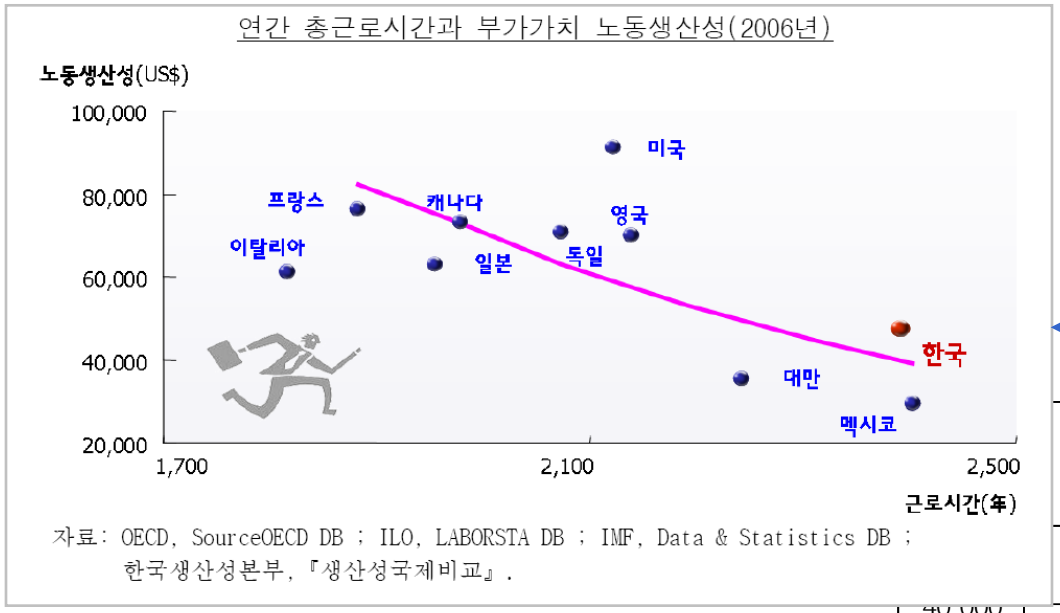
Number of Patents

	Company	Patents / 1K_Emps
Large Companies	Siemens	5.2
	Bosch	8.6
	Daimler	5.0
	Volkswagen	2.5
	BASF	7.8
	Average	**5.8**
Hidden Champions	Voith Paper	32.5
	Behr	12.9
	Koenig*Bauer	25.0
	Giesecke&Devrient	24.9
	Man Roland	15.1
	Sick	20.5
	Heidenhain	25.8
	Brainlab	87.1
	Qiagen	31.9
	Tracto-Technik	30.0
	Average	**30.6**

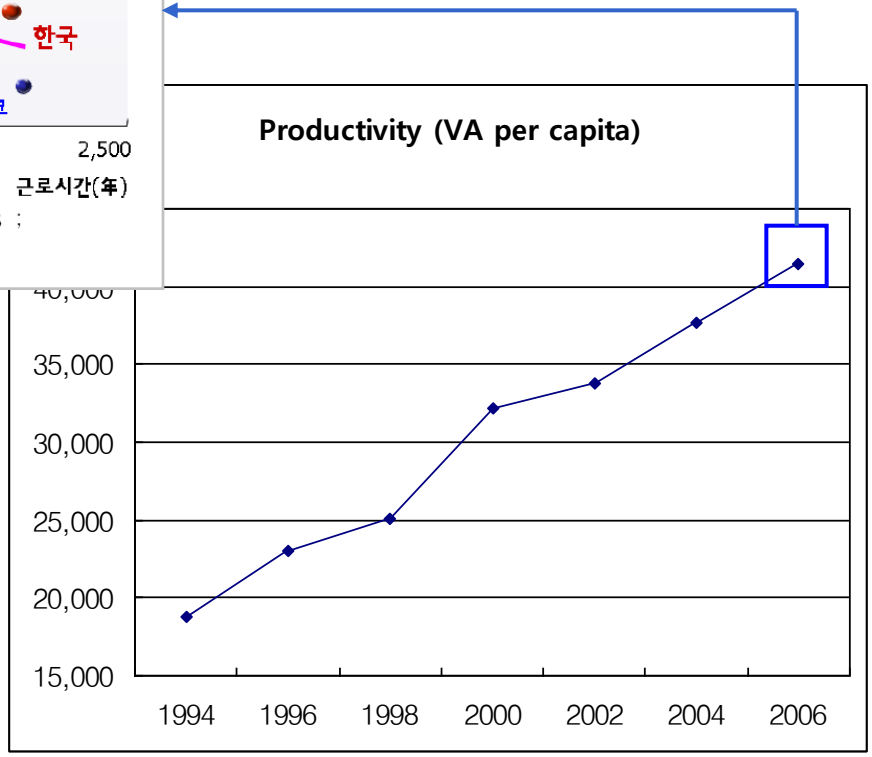
Korean SMEs : Statistics ?

- KBIZ Survey, 2006 (KBIZ : Korea federation of small and medium business)
- No. of SMEs : 3M (Large Enterprise : 4.2K)
- >20 yrs old SMEs : 6.8% (LE : 25%)
- Total No. of EMPs : 10M (LE : 1.5M)
- Avg. R&D investment : only 140K$ / year
  - 2.6% from revenue , manufacturing companies : 1.2%
- Net profit ? (stop growing)
  - 4.6% (FY92) , 3.3% (FY04) , 5.5% (FY06) , under 3%? (FY08)

Korean SMEs : Productivity?



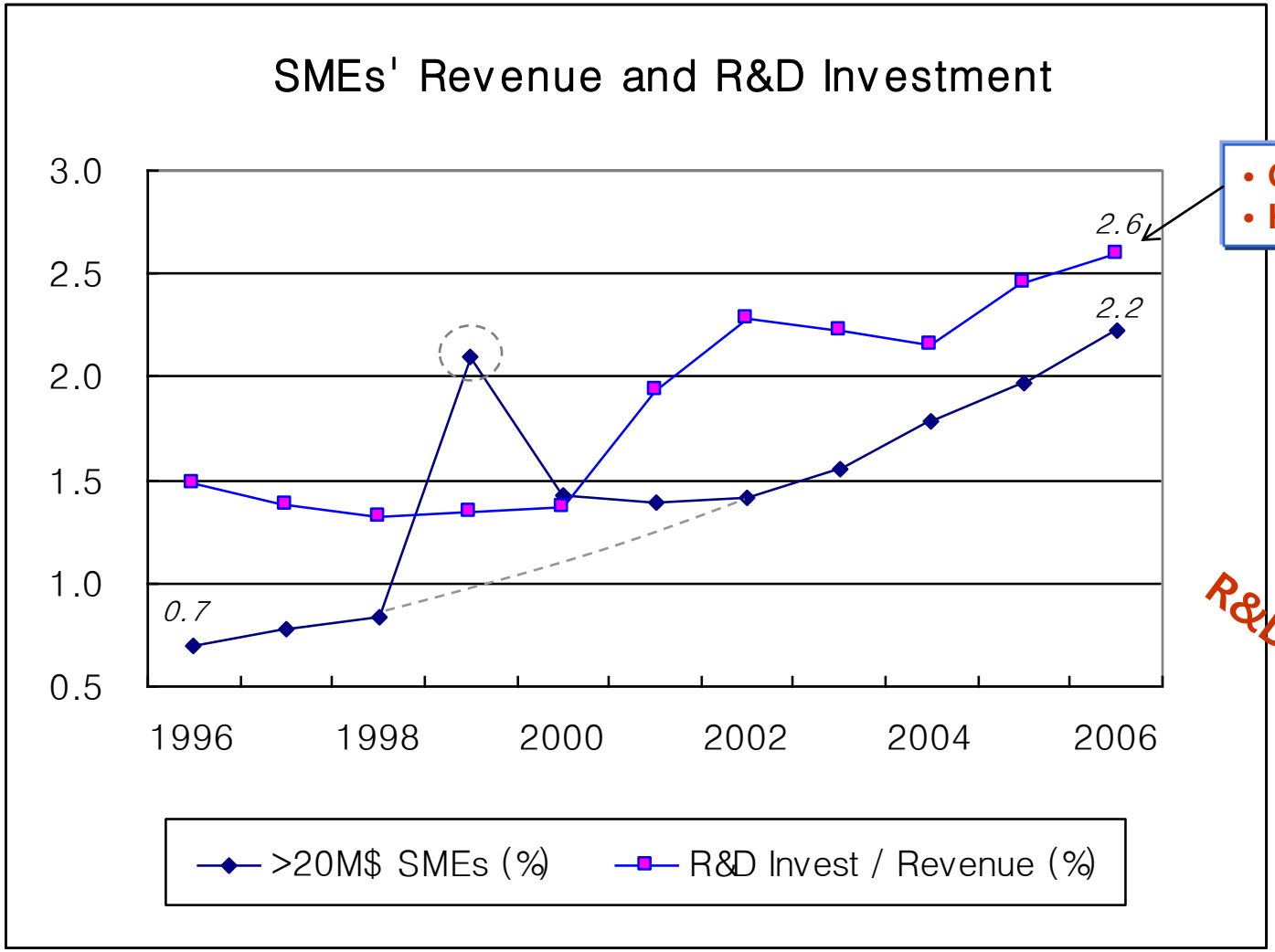
자료: OECD, SourceOECD DB ; ILO, LABORSTA DB ; IMF, Data & Statistics DB ;
한국생산성본부, 『생산성국제비교』.



R&D Productivity ????

(Source : KBIZ Survey, 2006)

Korean SMEs : Revenue and R&D



- German Corp : 3.0%
- HC. : 5.9%

R&D Productivity ????

(Source : KBIZ Survey, 2006)

Challenges ? : Same topics

- **Globalization ?**
  - Global Product and Service?
  - Global Competition?
  - Global Market Share?
- **Innovation ?**
  - R&D Investment?
  - World Best Technology?
  - World level Process Innovation?

One of the Solutions

- **We need Global R&D Collaboration**
  - Innovation of R&D Process, Culture, Productivity and People
  - Like FP7, EUREKA
- **Key Benefits**
  - Acquiring world class core-technology and IPR
  - Acquiring world class R&D environment and culture
  - Acquiring world class R&D social network
  - Acquiring global market and R&D roadmap

Case Study : FP7 LARKC Project

SEVENTH FRAMEWORK PROGRAMME

© European Community

the Large Knowledge Collider

The Large Knowledge Collider

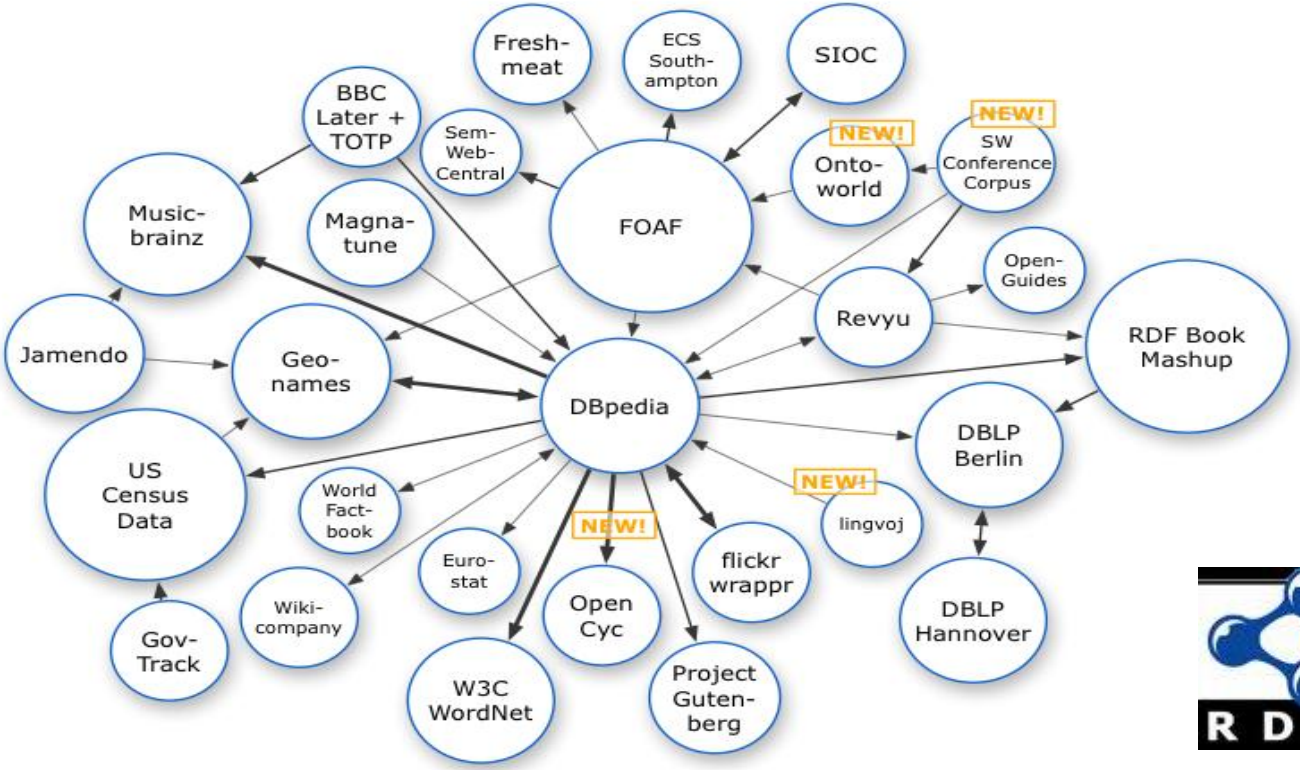
- 10M€ budget
- 7M€ EU contribution
- 3.5 years
- 80 person years
- 3 case studies
- 14 partners,
  12 countries,
  3 continents

- project nr. FP7 – 215535

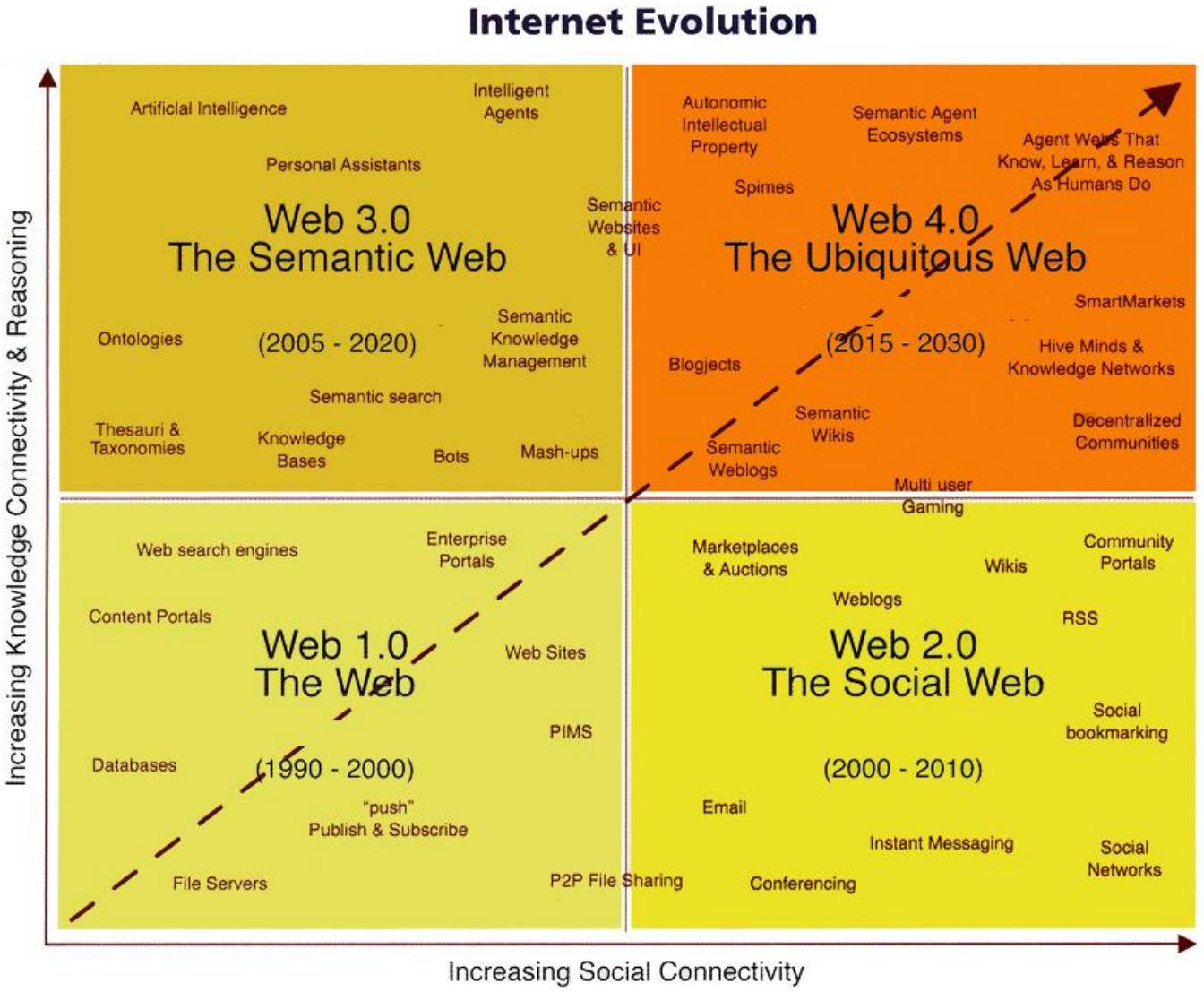
The Vision of LarKC

"a configurable platform for infinitely scalable semantic web reasoning"

for the Next Generation Google...



R&D Theme : Semantic Web (Web 3.0?)

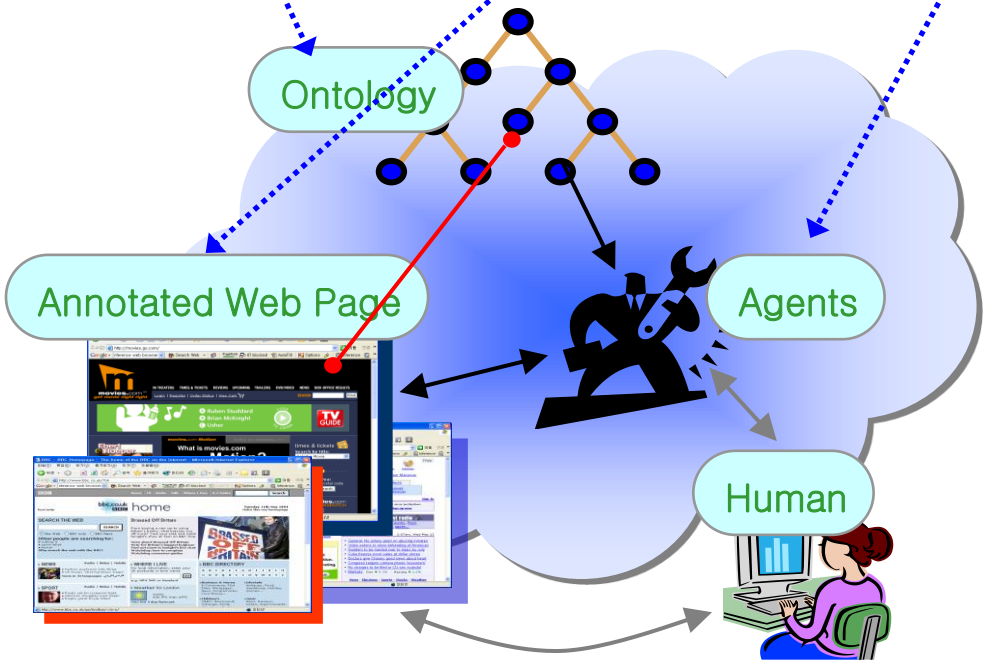


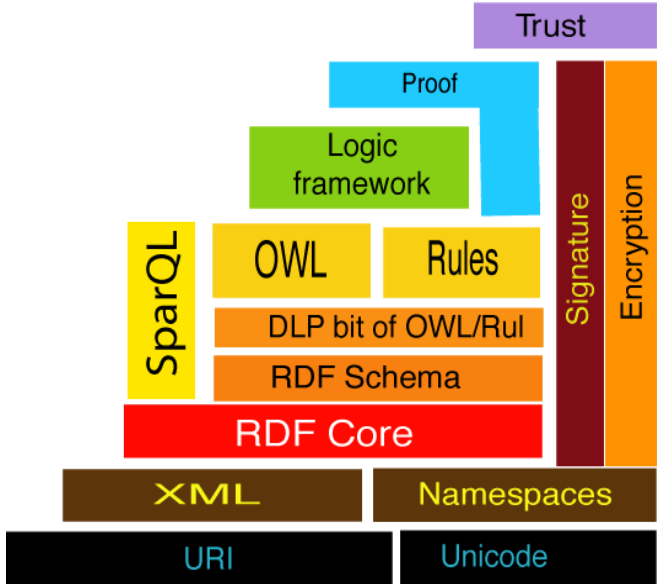
Definition of Semantic Web

"The Semantic Web is a web of data."

"The Semantic Web is an extension of the current web in which information is given well-defined meaning, better enabling computers and people to work in cooperation"

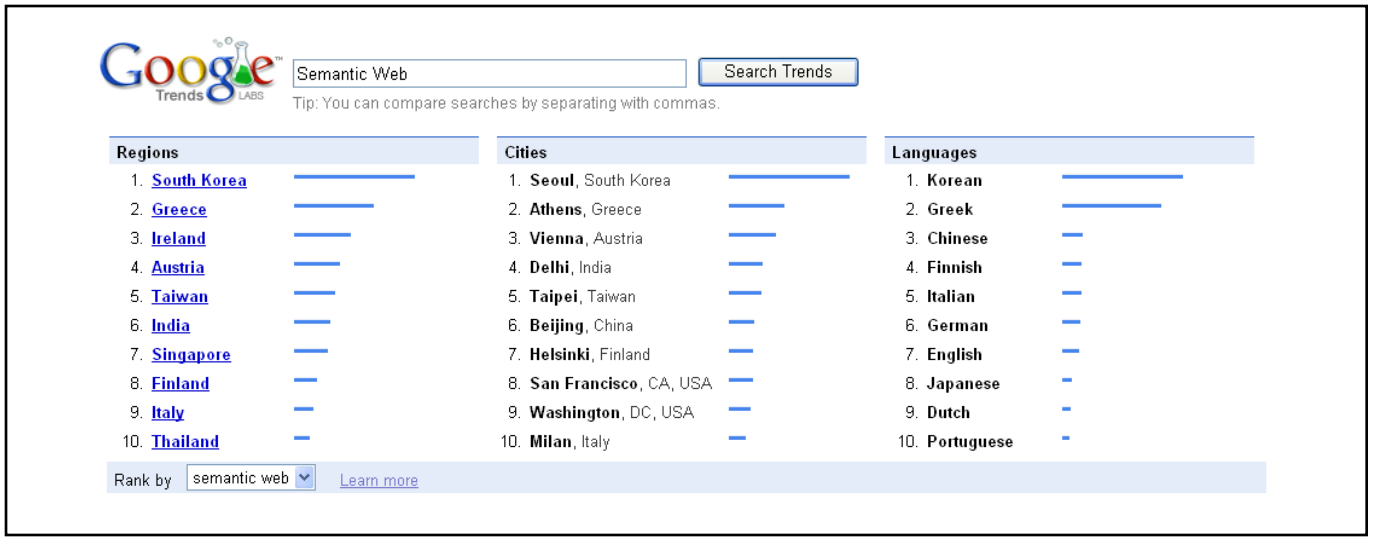
T. Berners-Lee, J. Hendler, O. Lassila, The Semantic Web", Scientific American, May 2001





TBL Cake

Semantic Web and Korea



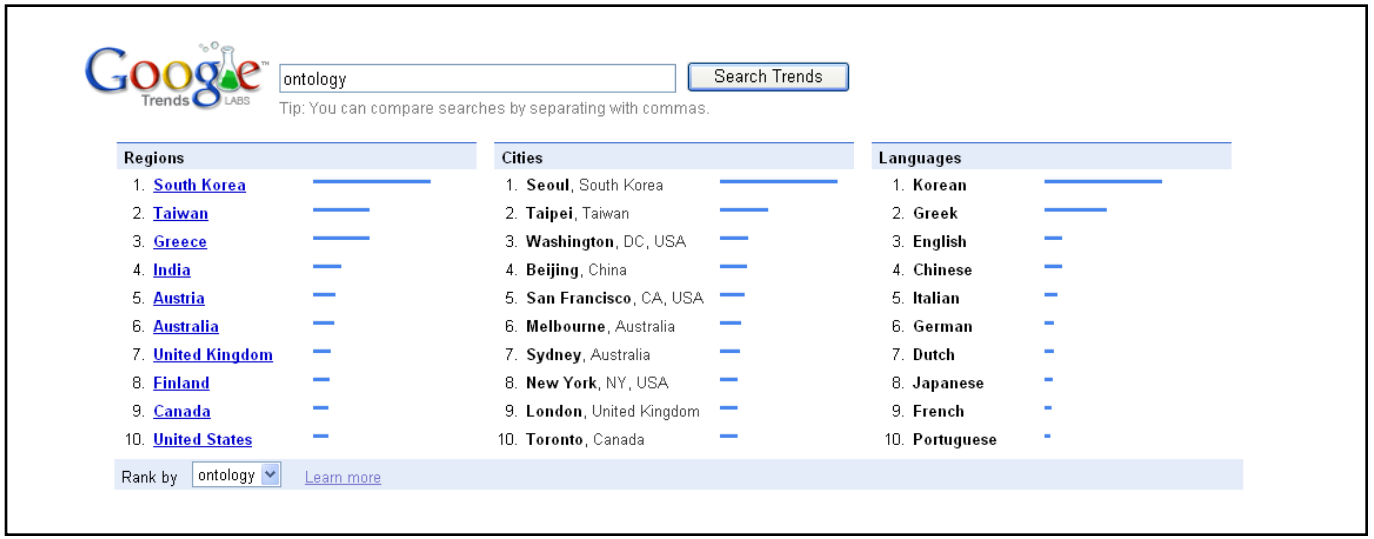
Google Trends

Semantic Web | Search Trends

Tip: You can compare searches by separating with commas.

Regions	Cities	Languages
1. South Korea	1. Seoul, South Korea	1. Korean
2. Greece	2. Athens, Greece	2. Greek
3. Ireland	3. Vienna, Austria	3. Chinese
4. Austria	4. Delhi, India	4. Finnish
5. Taiwan	5. Taipei, Taiwan	5. Italian
6. India	6. Beijing, China	6. German
7. Singapore	7. Helsinki, Finland	7. English
8. Finland	8. San Francisco, CA, USA	8. Japanese
9. Italy	9. Washington, DC, USA	9. Dutch
10. Thailand	10. Milan, Italy	10. Portuguese

Rank by semantic web | Learn more



Google Trends

ontology | Search Trends

Tip: You can compare searches by separating with commas.

Regions	Cities	Languages
1. South Korea	1. Seoul, South Korea	1. Korean
2. Taiwan	2. Taipei, Taiwan	2. Greek
3. Greece	3. Washington, DC, USA	3. English
4. India	4. Beijing, China	4. Chinese
5. Austria	5. San Francisco, CA, USA	5. Italian
6. Australia	6. Melbourne, Australia	6. German
7. United Kingdom	7. Sydney, Australia	7. Dutch
8. Finland	8. New York, NY, USA	8. Japanese
9. Canada	9. London, United Kingdom	9. French
10. United States	10. Toronto, Canada	10. Portuguese

Rank by ontology | Learn more

Why we need the LarKC

Gartner (May 2007) :

"By 2012,

70% of public Web pages will have some level of semantic markup,

20% will use more extensive Semantic Web-based ontologies"

- Semantic Technologies at Web Scale?
  - 20% of 30 billion pages @ 1000 triples per page = **6 trillion triples (6 x 10^{12})**
  - 30 billion and 1000 are underestimates, imagine in 6 years from now…
  - data-integration and semantic search at web-scale?

(By Frank van Harmelen)

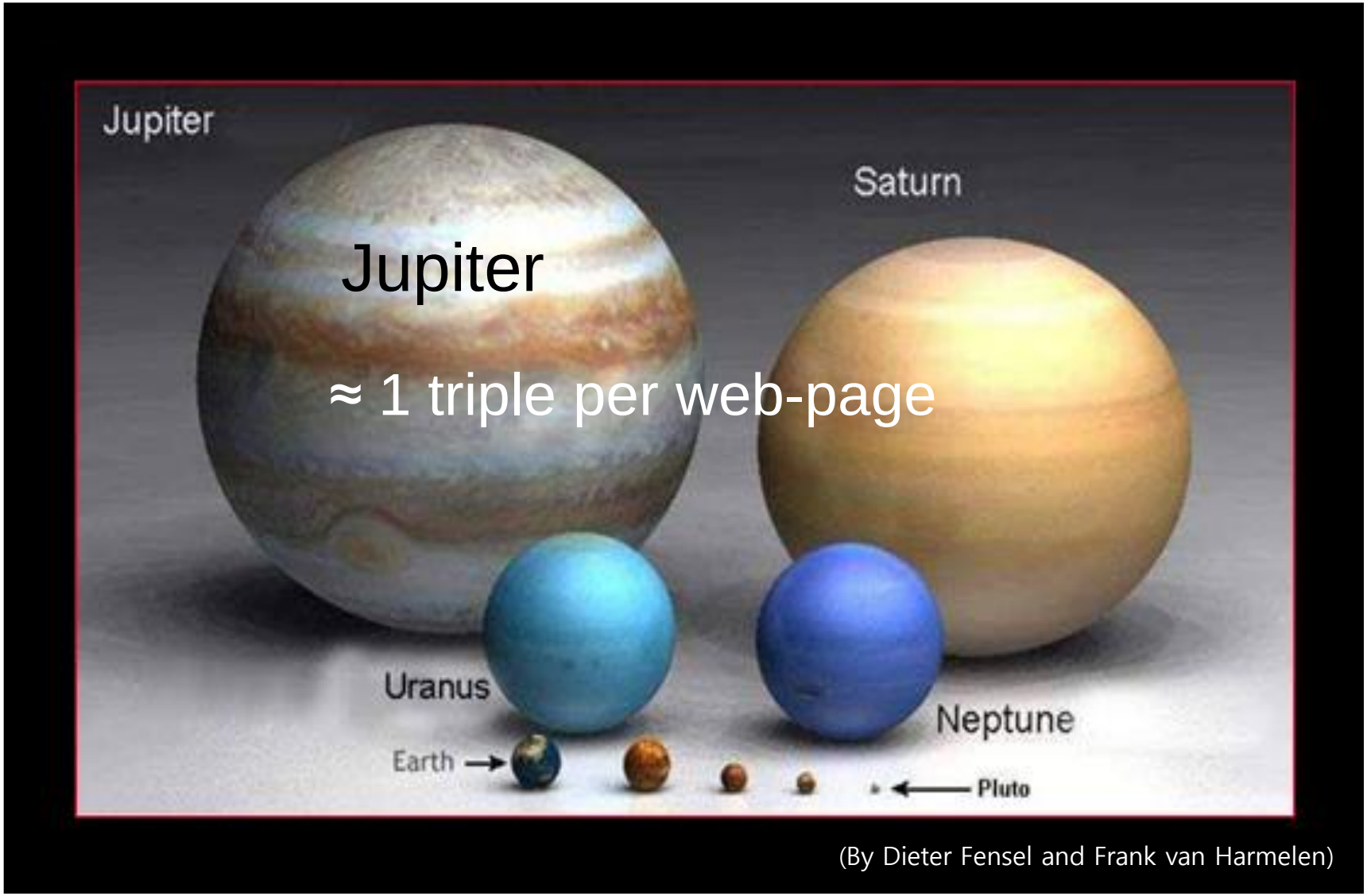
1 triple :

10^7 triple:

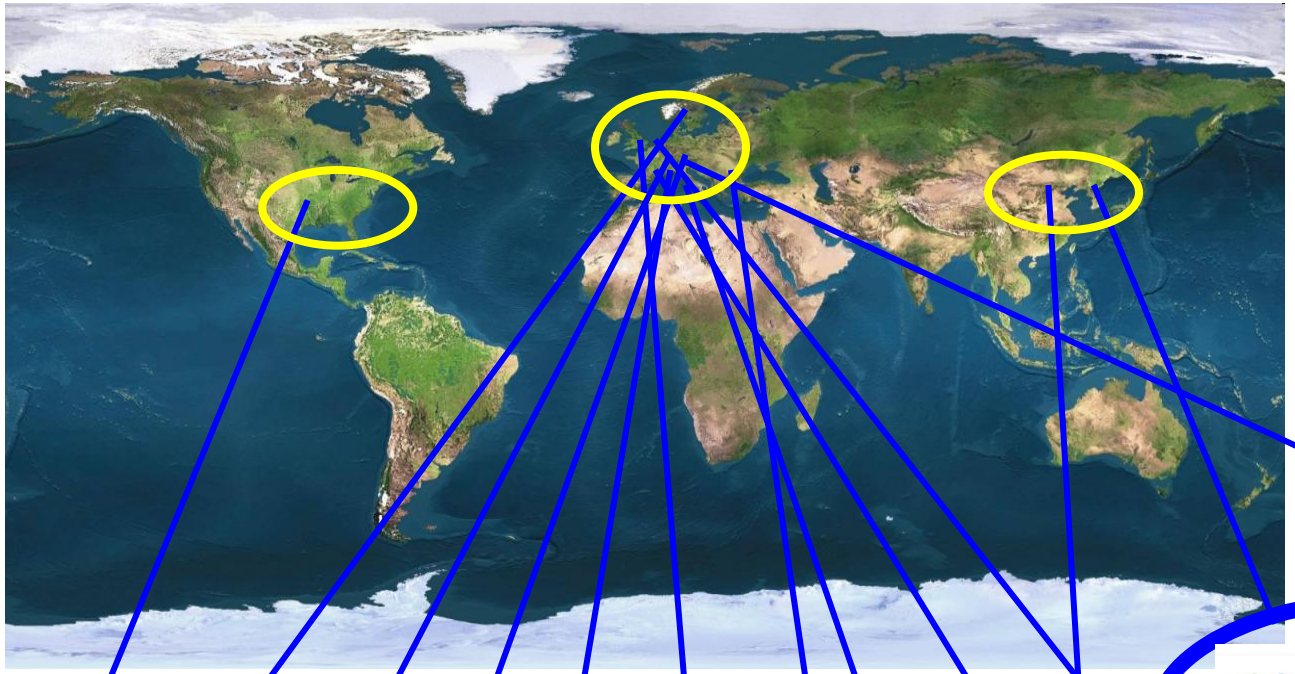

Suez Canal
Views of the Earth, Copyright © 2007 by Christoph Hormann http://earth.imagico.de/

~10^9 triple:

~10^{10} triple = 1 triple per web-page



The consortium



SEVENTH FRAMEWORK PROGRAMME

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STI · INNSBRUCK

AstraZeneca

MAX-PLANCK-GESELLSCHAFT

ontotext Semantic Technology Lab

Web Intelligence Consortium 2002

Saltlux

SIEMENS

The University Of Sheffield.

cYcorp

HLRS

CEFRIEL FORGING INNOVATION

vrije Universiteit

Why would EU projects need Korean partners?

- Partners from Korea provide an opportunity to play a key role in **developing, disseminating and exploiting** leading-edge technol ogies derived from EU projects.
- This collaboration can facilitate the creation of **industrial relation ships** between Asia and EU and beyond.
- European projects can take advantage of **worldwide information infrastructures**, with a Korean domestic market of 35 million Inter net subscribers, 40 million cellular phone users and advanced ubi quitous information services
- Korea has the ability to provide an ideal environment to **demonst rate the added value of technologies** developed in Europe and applied to the resolution of a wide variety of problems associated with current IT systems.

(By Dr. Michal Zaremba)

Korean partner :

and the main reason is that...

- **Saltlux** is a leading Korean company in ontology and Semantic web technologies.
- **Saltlux** delivered many ontology-based products and many national projects in this area.
- **Saltlux** is a key partner with major telecom companies in Korea
- **Saltlux** has experience with several projects which require very large scale reasoning facilities

(By Dr. Michal Zaremba)

What is the role of Saltlux in LarKC?

- LarKC is building new infrastructure for very large scale reasoning on the Web
- **Saltlux will test the limits of what can be achieved** by the consortium
- **Saltlux** provides LarKC with an ideal environment to **demonstrate the real added value**, by resolving problems of current IT systems for ubiquitous-city
- **Saltlux** provides a **global dimension to LarKC's dissemination program**

Progress Report

- 2007. 4.
  - Kick-off proposal team for LARKC project
  - Weekly Teleconference and Documentation
- 2007. 5.
  - Submitted Proposal
- 2007. 6.
  - Selected as candidate of hearing
  - Presentation and Q&A
- 2007. 7.
  - Candidate for agreement (4 projects passed from 22)
  - Additional Q&A
- 2007. 9.
  - Grant Agreement & Consortium Agreement
- 2007. 11.
  - Registration and administration
- 2008. 4.
  - Kick off meeting

Many Challenges

- Frequent communication and face to face meetings
  - 100 mails / week
  - Quarterly face to face meetings
- Collaboration and Integration
  - Documents and Deliverable
  - System and Data integration
- Communication Skill
  - English + Alpha
- Cultural Gap
  - Meaning of requirement, design, responsibility…
  - Collaboration and communication style
- Money, money, money
  - Internal R&D budget + not enough national fund
  - Unexpected expanses
- IPR Management

Lesson to Learn

- Long term preparation and valuable results.
- Great opportunity comes great responsibility.
- We need global thinking and culture.
- Healthy goose rather than big golden egg.

Summary

- Globalization and R&D innovation will make Korean hidden champions
- Lots of benefits through global R&D program
- FP7 LarKC project needs Korean Partner, Saltlux
- We have many conquerable challenges
- We need deep concern and help from Korean Government

Thank You !