SIG – III meeting

Human Factors in "Open Innovation"

Prepared Minds:

From Research to Pro-search

Eindhoven HTC , October 19, 2006

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Program

1. **(L)earning for a Living**
2. **Turning Knowledge into Value For Your Organization**

Part 1

(L)earning for a Living

1. Information is like...

In the Industrial Age,
information was like gold.
In the Digital Age,
information is like milk,
use it quickly.

Information Strategy, 1998

Never before has so much technology and information been available to mankind.
Never before has mankind been so utterly confused.

1. Knowledge and Error…

"Knowledge and error flow from the same mental sources, only the result distinguishes the two"

Source: Ernst Mach, 1905

1. Twice As Smart?

- **Now about 18 months or less, the amount of information available in the world doubles.**
- **That doesn't mean the world gets twice as smart every 18 months, but there is more information available.**
- **What it really means is: "It gets twice as much more difficult to find anything."**

Source: Roy Barton, CEO Dialog, Information Outlook, 2004
(Needle in a haystack - syndrome)

1. How Much New Information Is Created In 2002?

- **Newly created information is stored in four physical media: print/paper, film, magnetic (hard disks, video/audio tape), optical (DVD, CD) and four electronic channels: telephone, radio, TV, internet.**
- **Berkeley University (SIMS) has been studying how much *new* information is created each year.**
- **Total new information in physical media in 2002: 5 exabytes (1.000.000.000.000.000.000)**
- **Physical Media (Stock: guestimate percentage for 2002) :**
  - **Print/paper %**
  - **Film %**
  - **Magnetic %**
  - **Optical %**

  [Five exabytes of information is equivalent in size to the information contained in *half a million new libraries* the size of the Library of Congress (=19 million books; 10 terabytes) *print* collections!]

1. The old adage is truer than ever in the Knowledge- Based Economy

- It's not what you know, it's who you know
- … But nowadays, it's especially important *who knows you*!

1. At some point there's a limiting factor – and that's human attention

"If attention goes one place, then it can't go another"

Source: Davenport & Beck, Attention Economy, 2001

1. R & D Vision

From

"The Lab Is Our World"

▼

"The World Is Our Lab"

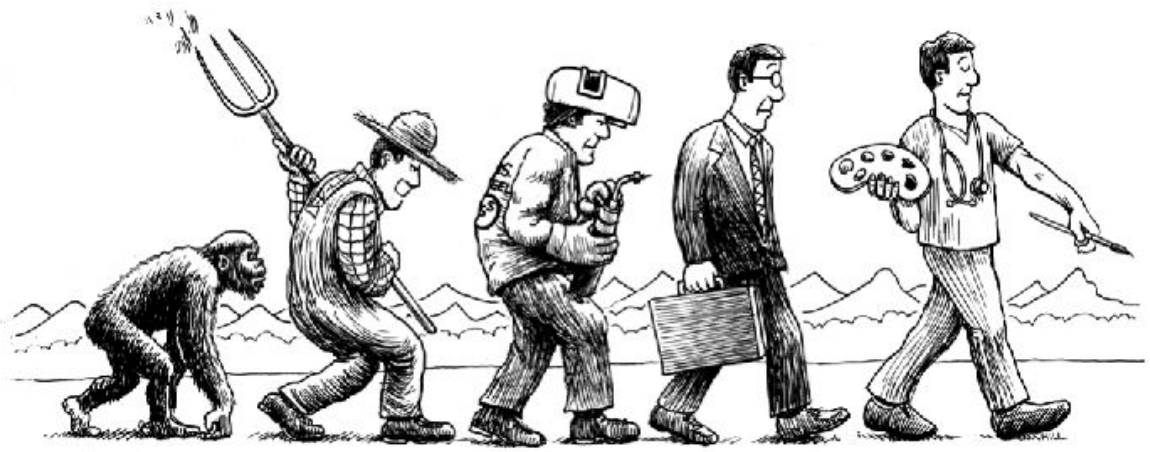
Source: Minutes:*EIRMA SIG III*, 20/21 April 2006, p.13

1. The world is…

1. ***…Round*:**
   - Five hundred years ago, Columbus returned safely to prove definitively that the world was round.
2. ***…Flat* (Friedman, 2005):**
   - Friedman believes that the world is flat (for the elites). Thanks to the advances in technology, the global playing field has been leveled. Everyone's a player, no matter where on the surface of the earth he or she may reside. In a flat world you can innovate without having to emigrate.
3. ***…Spiky* (Florida, 2005).**
   - Florida believes that the international economic landscape is not flat but "spiky". In terms of both sheer economic horsepower and cutting-edge innovation, surprisingly few regions truly matter in today's global economy.

     What's more, the tallest peaks – the cities and regions that drive the world economy – are growing even higher, while the valleys mostly linguish. For example: when it comes to actual economic output, New York's economy alone is about the size of Russia's or Brazil's!

1. Living in the Conceptual Age



Source : Daniel Pink, 2005

1. The Conceptual Class Rules…

"The past few decades have belonged to a certain kind of person with a certain kind of mind—computer programmers who could crank code, lawyers who could craft contracts, MBAs who could crunch numbers.
But the keys to the kingdom are changing hands.

The future belongs to a very different kind of person with a very different kind of mind—creators and empathizers, pattern recognizers and meaning makers.
These people—artists, inventors, designers, storytellers, caregivers, consolers, big picture thinkers—will now reap society's richest rewards and share its greatest joys."

Source : Dan Pink, A Whole New Mind

1. R - Professionals versus I - Professionals

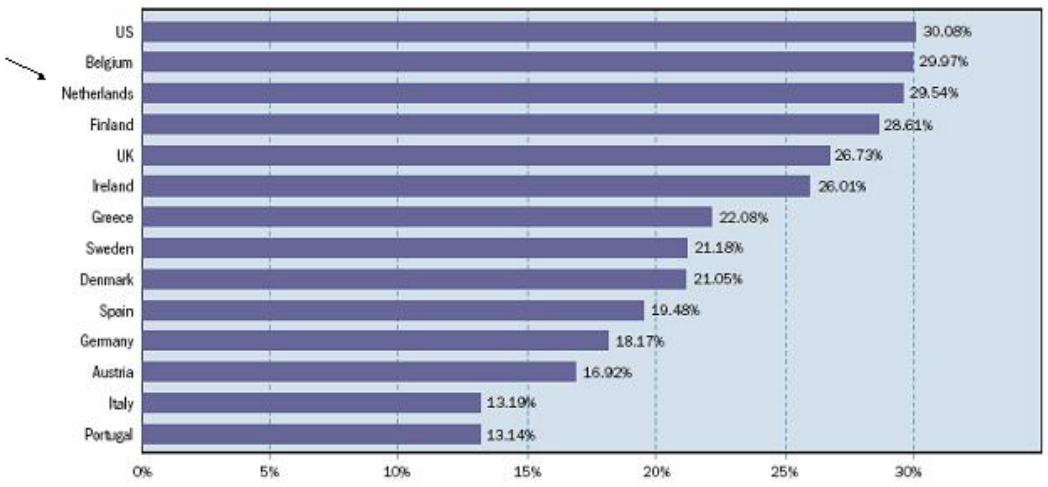
- **Routine/Repetitive Knowledge Professionals (80 – 85%):**
  - Doing the same things faster ("doing better")
  - Strive for efficiency: the ability to provide the effect wanted without waste of time, energy etc..
  - Repetitive, volume based work, predictable
- **Innovative/Improvising Knowledge Professionals (15- 20 %):**
  - Developing new activities, applications, business processes ("doing different")
  - Strive for effectiveness by modifying activities or develop something completely different. They organize innovative ideas, concepts in an understandable and attractive format
  - One-of-a kind, volume-of-one, unpredictable

Source: M. Weggeman, 2000

1.The Intellectual Workers Rule….

Figure 2: The Euro-Creative Class Index

Creative Occupations as a percent of Total Employment (2000)



Source: ILO, LABORSTA Labour Statistics Database, http://laborsta.ilo.org for European countries, US Bureau of Labor Statistics for the United States. Note: All the data referring to European countries are classified according the ISCO-88 standard. Last available year for Ireland, United Kingdom, US: 1999, Belgium: 1998; all other countries refer to year 2000.

Source: R. Florida 2004

1. Knowledge Professionals are…

- self navigators (autonomous)
- career driven (not job driven)
- minimally supervised (‘hire smart people and leave them alone’)
- working at home or in sites away from their unit
- committed (‘crafting dreams with a deadline’’)
- experience ‘shared leadership’ and ‘portable leadership’
- make long working hours (ad hoc)
- passionate about what they do
- sensitive to values and norms of a company
- refresh and refocus
- gradually evolve into *intellectual* workers (Furedi, 2004): revolutionary, stretch the existing, ‘open-space mindset’ and they value ‘making sense’ instead of ‘making things’.

1. Five Basic Ways To Improve Knowledge Worker Productivity?

1. **output increases, while input decreases**
2. **output increases, while input remains constant**
3. **output increases and input increases but at a lower rate**
4. **output remains constant and input decreases**
5. **output decreases but input also decreases but at a higher rate**

Source: Sink and Tuttle, 1989

1. Are There Three Types of Employees?

- **Engaged**
  - Employees work with passion and feel a profound connection to their company. They drive innovation and move the organization forward (27% are "*Passionates*")
- **Not – Engaged**
  - Employees are essentially "checked out". They are sleepwalking through their workday, putting time – but not energy or passion – into their work" (59% are "*Sleepwalkers*")
- **Actively Disengaged**
  - Employees aren't just unhappy at work; they are busy acting out their unhappiness. Every day, these workers undermine what their engaged coworkers accomplish (14% are "*Survivors*")

Source; The Gallup Organization, January 12, 2006,
based on a representive sample of 1.000 employed adults

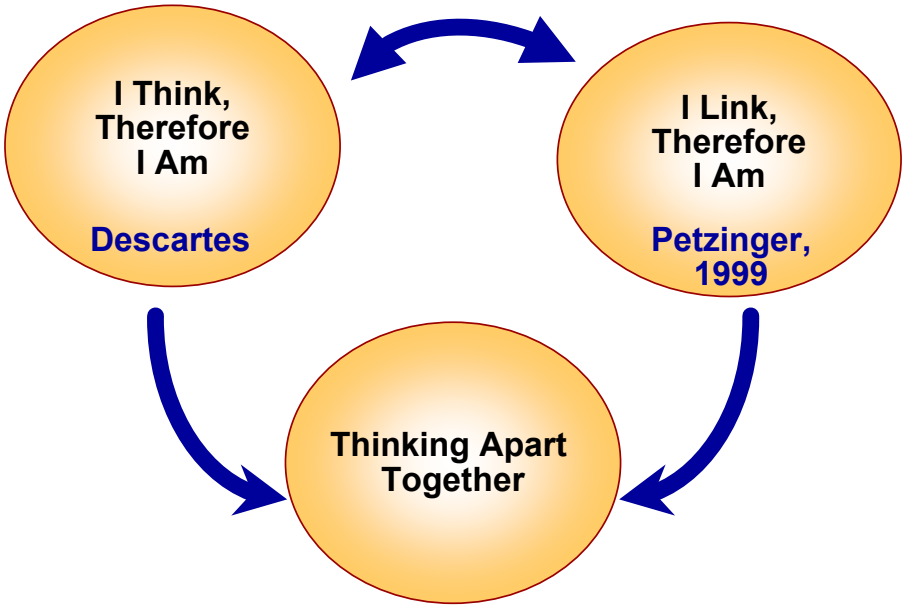
1. The Search for Talent

- **Talented people need organizations less than organizations need talented people (Pink, 2005)**
- **For companies the main task is *simply* to end up with more talented people than their competitors (Economist, 2006)**
- **The Impact of a *broken string* on talent and organizations (Springborg, 2006)**
  - If you break a string on your guitar in the middle of a concert, you end up playing a lot of things you would not normally play - some would call that errors. Some of it might be wonderful or interesting or surprising or awful, but the point is you might never have thought of playing the piece just like that, unless you had lost the string right then and there.
  - Errors have an almost magical ability to change people's focus from a preset schedule to an intense listening experience. Maybe that is why it is a well known fact among musicians that some of the best ideas come when we play something 'wrong'.

1. To the Highest Bidder? Pitfalls in The Battle for Brainpower (Pfeffer, 2001, Economist 2006)

1. **Overemphasis on the individual, underemphasis on the team**
   - The assumption is that there are individual stars. It makes sense to provide these stars differentiated rewards that recognize their stardom. Behavioral implications? Excessive internal competition instead of sharing ideas and problems + 'people who come for money leave for money'!
2. **The glorification of outsiders**
   - The tendency to think that the person hired from outside has better competencies and qualifications that those inside. There is the mystery of the outsider (a person from outside with a good reputation will look 'larger than life')
3. **The self-fulfilling prophecy, working in reverse**
   - The very labeling of people will affect their performance: high expectations increase performance and low expectations will decrease performance (battle for attention: high talented versus low talented: who's the best and who's the rest)
4. **Underestimate the impact of good organizational design**
   - Build a culture and a set of management practices that permits everyone to perform as if he or she were in the top 10%
5. **Hire the best…and they will learn nothing**
   - If you hire the best people who think (or even know) they are the best, how likely are they to be willing to listen and learn?

1. Knowledge Workers THINK, DO and DARE…

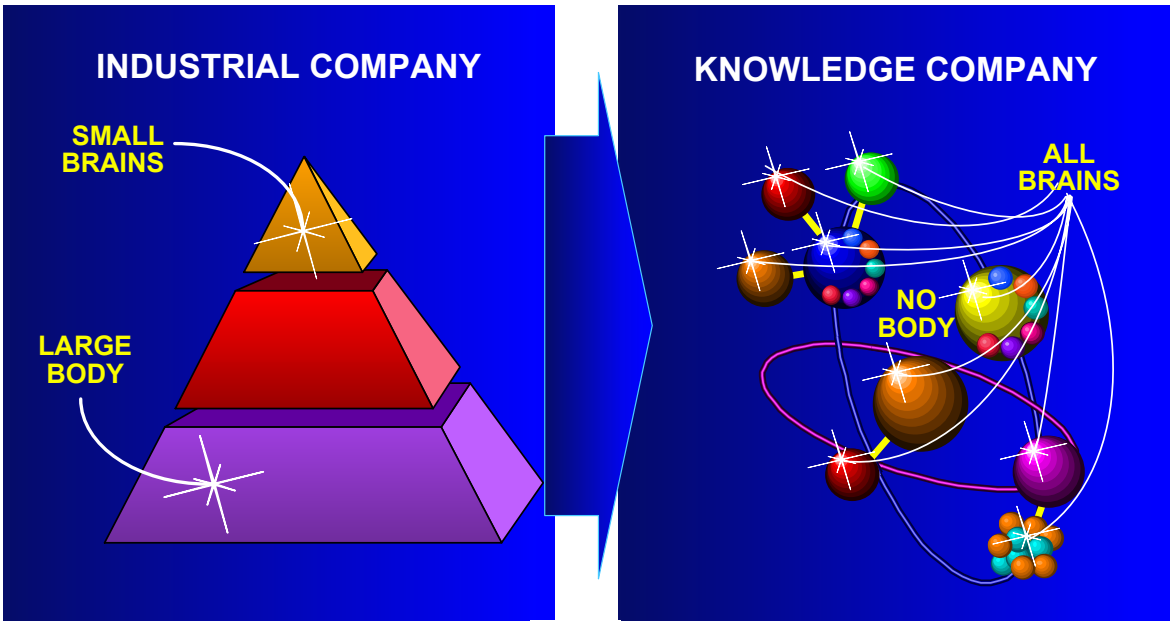


1. In Search For Creative Collectives?

"A group of people get together and create an institution that we call a company, so they are able to accomplish collectively what they could not accomplish separately. They make a contribution to society"

Source: David Packard, cofounder of HP. In: C.Handy, 2003

1. Organizations Are Fundamentally Changing



Source: Tissen, Andriessen, Lekanne Deprez, 1997

1. Mental Space ("Zeromindedness")

"One always fears that in certain corporate environments Thomas Edison might not had the freedom to invent the lightbulb.

Instead, Mr. Edison might have come up with – a *bigger candle*"

Source: Philip E. Rollhaus, 1986

Newman, 2006: 30/70 rule

1. Lifelong Learning?

1. Lifelong Learning : No Thanks!

During a presentation on learning organizations /lifelong learning a student stood up and said:

"For me lifelong learning means lifelong imprisonment. I can't imagine myself doing this stuff all my life. Please, what's the alternative!"

Part 2

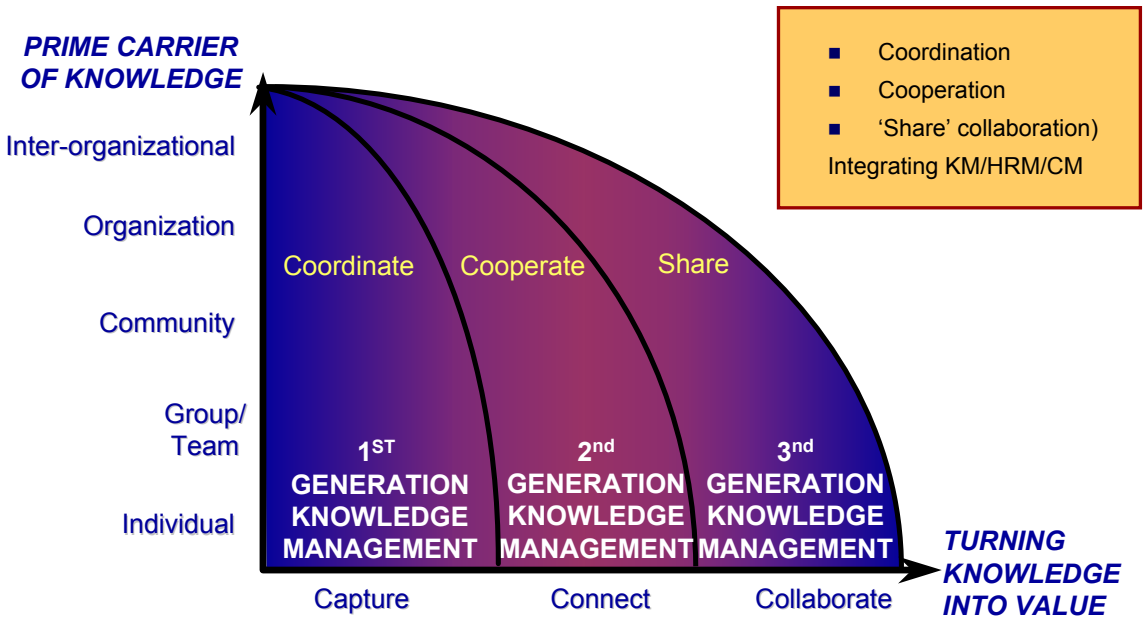
Turning Knowledge into Value for Your Organization

2. A short journey…

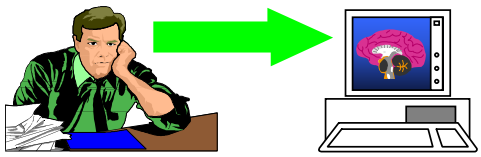
Knowledge:

- Resides in the ‘heads’ (‘stock’: directly available, but today’s knowledge is soon out of date)
- Circulates among people; something people do together (‘flow’: exclusive, it updates organically)
- Is not easy to organize
- Must be turned into action (reflection is also an action…)
- Stimulates the process of organizational learning (and forgetting)

2. Three generations in KM



2.First Generation KM:Content Without Context



= **BRAIN DRAIN**

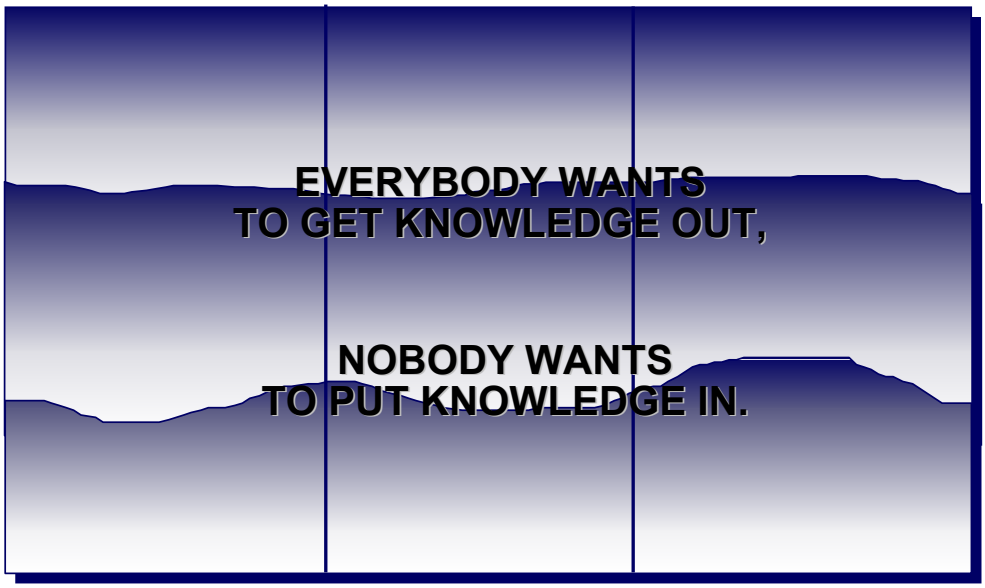
Approach

- Focus on (technically) capturing knowledge from minds to documents
- Make expert knowledge explicit in documents and videos
- Hope that others use the "captured" expert knowledge in their work

Result

- Expensive and elaborate interviewing work that is rapidly outdated
- People have difficulty to transfer the available knowledge into their own workplace environment
- In the end direct contact needed to expert to ask questions and advice (looking for context…)

2. The Problem with Knowledge Systems is...



2. Second Generation KM: Connecting Everybody

= **BRAIN CHAIN**

Approach

- Focus on electronically connecting people anytime, anywhere, anyhow
- Introduce company –wide networks where everybody's connected
- Hope that by connecting everybody, people will instantly and spontaneously start to share valuable and vulnerable ideas and dwell on other's expertise

Result

- Large electronic company networks for cooperation that remain silent (dead forums and websites)
- People do not instantly start to share out of nowhere, without any accountability, without objective, without knowing each other
- Electronic connections do not imply any real sharing is happening.

2. Third generation KM: Creating Prepared Minds: "Occasional Creative Collectives"

= **BRAIN GAIN**

Approach

- Focus on creating intense, focused and valuable sharing
- Companies create focused collaborative workspaces where people work from various locations in "occasional collectives" on the job at hand
- Expect integration of electronic information, online sources, individual expertise and collaborative work results in better collective judgement

Result

- Focus on value. High trust, high integrity, highly portable organization. Value added of professionals is transparent and visible
- Success depends on transforming results of sharing into improved work
- Collective is key. "Nothing great ever came out of a group that never met"

2. Collective Wisdom: How democratisation of information has empowered us all as individuals…

- **For centuries access to the world's information - and the ability to communicate it – was controlled by the wealthy and the well educated. Today the internet (Web 1.0 and web 2.0) has broken down many of the barriers that exist between people and information: effectively democratising access to human and digital knowledge (Schmidt, 2006)**
- **Our initial reaction to the idea of relying on the collective judgement of a diverse group of people is that *it will not work*. The well-informed people will be outweighted by the poorly informed, and the group's decision will be worse than that of even the average individual.**
- **But.. many of the Net's most distinctive landmarks – Google, Slashdot, Wikipedia, Linux, AJAX, Bloggs – are the products of open space, creative commons organizations and the wisdom of crowds.**

Source: James Surowiecky, 2005, Afterword (www.wisdomofcrowds.com)

2. Ways for sharing, distribution and reuse (1)

Prevent to continually re-invent the obvious by …

1. Knowledge mapping
2. Personal libraries and knowledge bases
3. Appoint specialists, subject matter experts, or PRO- AM's
4. Formal and informal networks, trade-groups, virtual communities
5. Ad hoc internal project teams, sponsor projects
6. Question and answer databases, thematic discussion groups
7. Enable to contact a specialist in the area
8. Frequently asked questions, written know-how on what to do
9. Good and best practices, protocols, procedures and models
10. Project debriefing. Affirmative action reporting….

2. Ways for sharing, distribution and reuse (2)

Prevent to continually re-invent the obvious by … (continued)

11. Skill programmes, training, permanent education in specific fields
12. Thematic days, management days
13. CV database, yellow pages
14. Automated expertise locator
15. Start pages for personnel and with thematic websites
16. Collected links to relevant external databases and feeds
17. E-mail newsgroups for each knowledge area to keep people
18. Individual information profiles and send alerts to new info
19. Use spiders on external news and trade publications websites
20. Intelligent search technology pushing and pulling information….

2. Knowledge Management Tools in Action Within New Product Development Processes

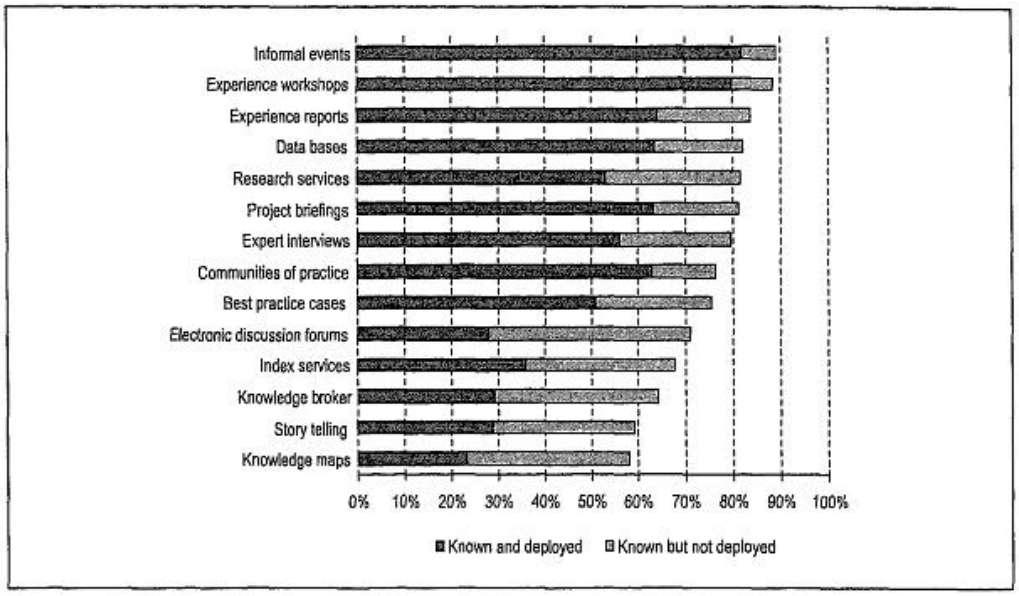


Figure 2 Familiarity and Deployment of Knowledge Management Methods for All Project Phases in % of all Responses (N = 356)

Source: Hoegl & Schulze, 2005

2. From Research to Pro- search: How 'Pro' Can You Get?

- Pro-active
- Pro-totype
- Pro-ductive
- Pro-vocative
- Pro-phesy
- Pro-Am

May the knowledge be with you

www.zerospaceadvies.nl