

The principles and practical implementation examples of Knowledge Management by an Intelligent Organization

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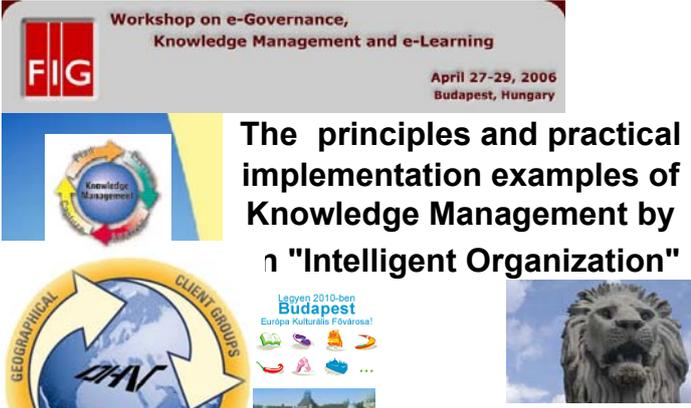
Key words: Knowledge Management (KM), Information Technology, Knowledge Society, European perspective, vision of Intelligent Organization, Implementation Strategy for KM.

SUMMARY

The presentation begins with an introduction dealing with the trends and visions related to the Knowledge Society development, as well from the World's as from EU's perspective, following by the examples of goals and steps as they have been undertaken in the Netherlands in order to create the Knowledge Society.

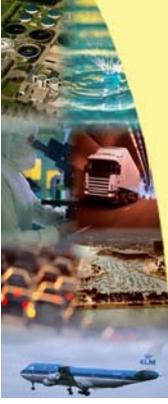
Then the definition and characteristics of an "Intelligent Organization" are discussed in detail. After that, the basic definitions for Data, Information, Knowledge, Knowledge Management (KM), Knowledge Processes, etc. is given.

Focusing on the existing ICT tools, the relation between Knowledge Management and Technology, including an overview of available ICT tools for KM and KM practices" are discussed, followed by pointing out the importance of Knowledge Management for the "Intelligent Organizations". Then the practical implementation of KM by an "Intelligent Organization" as DHV is presented, including the number of ICT tools that have been used there by KM. Finally, the conclusions and recommendations with possible Implementation Strategy for KM is presented and KM experience from firms operating globally is reviewed.



The principles and practical implementation examples of Knowledge Management by an "Intelligent Organization"

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Contents

Background / Visions

- World Environment/perspective based on Knowledge Society principles
- European Perspective, NL steps to knowledge society and competitiveness
- Vision of "Intelligent Organization"

Basic Definitions

- Data, information, knowledge, knowledge management
- Knowledge processes
- Is knowledge = the power ?

How do we Create and Enhance the Knowledge?



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Background / Visions



World perspective is based on Knowledge Society

World trends ...

- Intensive ICT development
- Mass global travels and and world-wide telecommunication (Internet)
- Development of trade / globalisation creates the societies based on knowledge
- Basis for it is development and exchange of non-material assets and services
- Most important are up-to-date information, knowledge and skills
- All these aspects change the structure of the work
- The NEW Economy (NEWWORK) = NETWORK Economy



EU-perspective

Europe has entered the age of Knowledge

Ambitions of EU-top 2000 Lisbon

- Europe intends to create the society and economy based on knowledge
- Europeans must operate in the homogeneous cultural, ethnic and language environment
- All Europeans should have the same conditions to fulfil the expectations and to be able to actively participate in the building of Europe future
- More attention need to be paid to education during the the entire life
- Access to information and knowledge

Objectives of these changes are

- Improvement of competitiveness
 - Possibility to employments
 - Possibility to adjust the works force



NL - perspective

NL supports EU-top 2000 Lisbon ambitions

- NL focuses on creation of society based on knowledge and knowledge economy
- NL introduces changes in:
 - Strategy of education development
 - Level of financing of education
 - Investment in Human resources
- The Government requires from the citizens and firms:
 - (more)Own initiatives
 - Undertaking of (more)responsibilities
- Relation – citizen/organisation/government – is changing

Objective of this changes is

- Preservation the competitiveness of the NL in Europe



Vision of "Intelligent Organisation"

- Intelligent organisation
- Knowledge Employers
- Initiatives related to knowledge
- Roadmap for Knowledge Management (KM)



"Intelligent Organisation" (IO)

Characteristics

- Decision making on all levels
- Information Technologies should be:
 - Close related to the goals and business processes
 - Expanded also on external partners and clients
 - Used for better communication and closer cooperation between employers
- Co-operation with partners and suppliers
- Continuously improvement of quality
- Learning from the competitors
- Improvement of quality of products and services



"Knowledge employer"

Characteristics

- Takes initiatives
- Is in continuous contact
- Manages himself
- Act in a team
- Is a leader
- Co-operates with his manager
- Remembers about strategic goals
- Solves conflicts
- Combines the competitive interests, individual and group ones

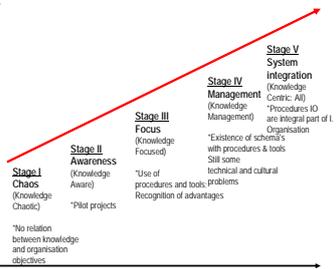


Initiatives related to the knowledge

- Creation / development of organisational culture
- Learning broader than this can be done by an individual
 - Maximize information circles
 - Combining the human systems with IT systems
- Position of KM in the context of Management strategy by IO
 - Priorities in investments in the technological tools
 - Targeting on maximal return on investment



Roadmap for "Knowledge Management"



Stage	Knowledge State	Focus	Key Activities
Stage I	Chaos (Knowledge Chaotic)	Aware	*No relation between knowledge and organisation objectives
Stage II	Awareness (Knowledge Aware)	Aware	*Use of procedures and tools *Pilot projects
Stage III	Focus (Knowledge Focused)	Focused	*Existence of schema's with procedures & tools *Recognition of advantages
Stage IV	Management (Knowledge Management)	Management	*Procedures IO are integral part of I. Organisation
Stage V	System (Knowledge System)	System	*Procedures IO are integral part of I. Organisation



Basic Definitions

What is the definition of data?

The Data

- ◆ By the data we understand the symbolic representation of numbers /figures, quantities, or facts.

70 people
21 ∞C
"A pleasure experience"

What is the definition of information ?

Information

- ◆ is when a person adds the meaning/interpretation to the received data.

Data

70 people
21 ∞C
"A pleasure experience"

Today are more people than yesterday
The weather forecast
Maria has passed exam

What is the knowledge?

It is equation: $K = I + ESA$

- ◆ I: information (explicit knowledge / record-able)
- ◆ ESA (implicit knowledge - in the head):
 - ❖ E: experience
 - ❖ S: skills
 - ❖ A: attitude/culture

What is the knowledge?



Knowledge: does not exists outside human being; it is located "between the ears" of the employers of your organizations!

What means knowledge by an IO?

- ◆ Generally, the Knowledge is defined as combination of explicit (record-able) and implicit(in the human's head).

It is an equation : $K = I + ESA$

Explicit Knowledge = Info

Explicit Knowledge is stored in archives, dossiers, libraries. All information can be stored in theories, formulas, procedures, instructions, schema's, etc. Explicit Knowledge can be also stored electronically.

Implicit Knowledge : ESA

Implicit Knowledge of employers is stored in the heads. Implicit Knowledge can be divided into various categories:

- Experience (projects)
- Skills (competences)
- Attitude,culture (personal characteristics)

Processes related to the Knowledge

Processes related to the Knowledge

Conceptual

Sharing
Storing
Retrieval/capture
Use
Gathering
Creation
Delete

Practical

Lectures, seminars, courses, creation of teams..
Digital data storage (Intranet, electronic libraries)..
Intranet, queries to the DB's, IO language/jargon ...
Creation of teams, re-use of information
Recruiting of new employees, alliances / co-operations,
Innovations, trainings, ...
"Cleaning up" files, dossiers, training of employees

DHV has a lot of knowledge!

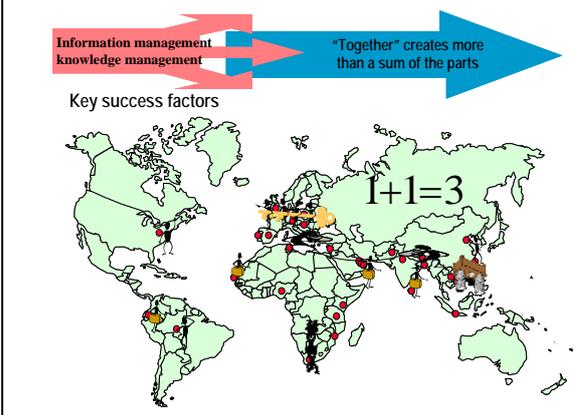
Attitude (culture): Does Knowledge gives you the power ?

The Knowledge hardly gives the power!



Sharing of knowledge gives the power !





Information management
knowledge management

“Together” creates more than a sum of the parts

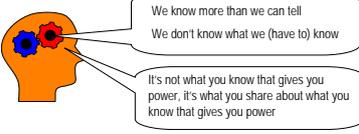
Key success factors

$1+1=3$

Knowledge definition again



Knowledge is the interplay between information, experience, skills and attitude that enables us to make decisions, to accomplish our tasks and/or to meet our objectives.



We know more than we can tell
We don't know what we (have to) know

It's not what you know that gives you power, it's what you share about what you know that gives you power

How do we Create and Enhance Knowledge?



Informal and formal on-the-job training

Interaction with customers/suppliers

Cross functional teamworking

Cross functional projects

Informal networks within organisation

Face-to-face meeting

Teamworking

Learning by doing

Coaching & mentoring

Performance management

Competency development

Documents and reports



$1+1=3$



What is Knowledge Management?



Knowledge Management is formalizing the management of an enterprise's intellectual assets.

Enterprise look to manage their intellectual assets because of the capital embedded in them. This embedded capital is not financial – rather, it is human, organizational and relationship capital. Those forms of capital are often hidden, are not highly leveraged and are difficult to value.

Relevant data, information and knowledge are everywhere, but where?




Knowledge from clients and competitors

Info in books

Knowledge in heads

Information in dossiers

Information from magazines and conferences

Experience from Business projects

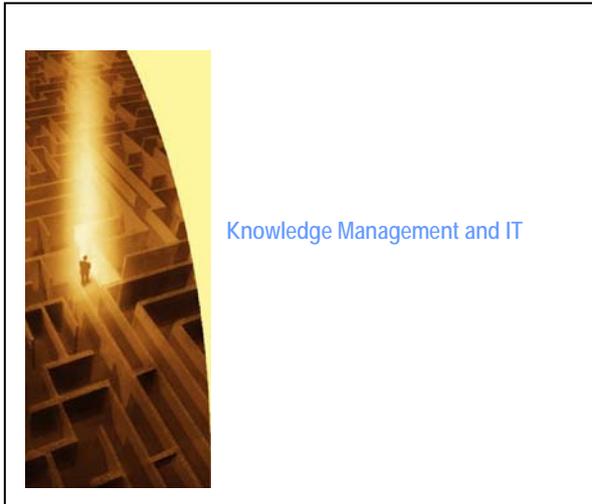
Data in internal databases

Competencies in people

Data in external databases

Knowledge in external professional networks

Organization



Knowledge Management and IT

Knowledge Management is enjoying a technology renaissance

Until 2001, KM practices were not well supported by software vendors. However, due in part to economic pressures and tight IT budgets, vendors began providing integrated KM in 2001.

One of the biggest challenges for KM is that so little relevant knowledge is actually in any kind of documented form.

KM Key Facts

KM is a disciplined process, not a technology

KM is an integral part of the organization and its processes

KM programs must

- ◆ Be designed to directly support business objectives and process
- ◆ yield measurable results; the ROI well-managed KM programs can be 2:1

New Technology
Old Organization
-----+
Expensive Old Organization

e – Knowledge management

data
information
knowledge

=

ICT tools for KM (based on DHV example)

<p>Knowledge sharing</p> <p><u>Group Collaboration Systems</u></p> <ul style="list-style-type: none"> -Groupware: (Office 2000) -Intranets (Plaza, DHV Gateway, Portals) "Who-what-where": Blue Pages, CVS -Virtual collaboration on the internet 	<p>Knowledge distribution</p> <p><u>Office Systems</u></p> <ul style="list-style-type: none"> -Word Processing -Desktop on Web Publishing -Document management systems -Document Imaging system, Workflow, -Databases: desktop databases, spreadsheets, user-friendly interfaces to mainframe databases
<p>Knowledge capture and archiving</p> <p><u>Artificial Intelligence Systems</u></p> <ul style="list-style-type: none"> -Expert Systems -Neural Nets -Fuzzy Logic -Genetic Algorithms -Intelligent Agents Group 	<p>Knowledge development</p> <p><u>Knowledge Work Systems</u></p> <ul style="list-style-type: none"> -CAD/CAM -Virtual Reality -E-learning

KM practices and Information Technologies

Document Management

A server-based repository that offers library services, with many extended and related technologies.

Best-Practices Programs

A process of capturing processes-oriented knowledge in a explicit form, and sharing that knowledge or incorporating it into a continuous process improvement program.

Web Content Management

Controlling Web site content through the use of specific tools. Web content management solution offer core functionality that goes well beyond simply managing HTML pages.



KM practices and Information Technologies
Adoption speed: two to five years

Virtual Teams
 A project-oriented group of knowledge workers who are not required to work in the same location or time zone.

Information-Retrieval/Search
 The retrieval of documents based on a similarity metric applied to user's query.

Team Collaboration Support
 Team-oriented collaboration tools that bring together real-time communication and asynchronous collaboration for team activities and tasks.

E-learning
 The use of electronic technologies to deliver cognitive information and training that improves understanding and competency.

Automates Text Categorization
 Use of statistical models or hand-coded rules to rate a document's relevancy to specific subject categories.



KM Practical implementation

(Based on DHV Group, an example of "Intelligent Organisation")



DHV Group

Our Vision
 To be, as a member of a close-knit global alliance, a leading consultancy and engineering firm operating in the public-private spectrum.

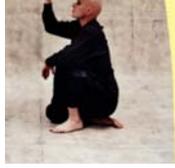
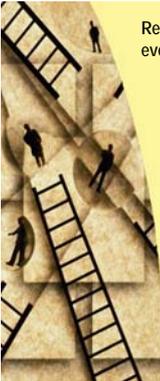
Our Mission
 To provide multi-disciplinary services for the sustainable development of our living environment, based on mutual loyalty with our clients, employees, partners and shareholders.

Differentiating
 Strengthening our IREPs (internationally-recognized expertise positions).
 Our specific know-how and experience are our main assets and the essence of the DHV identity in the world, embodying the DHV Group's one-company concept. They are the basis for our existence and our future.

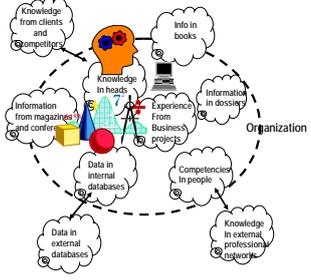


Management of knowledge is of vital importance !

DHV is a knowledge-intensive organisation, which implies that the planning and management of knowledge is of vital importance. Knowledge management helps to improve the cohesion within the DHV Group, is a critical success factor for growth and profit and is essential for the realisation of DHV's Mission Statement and goals.

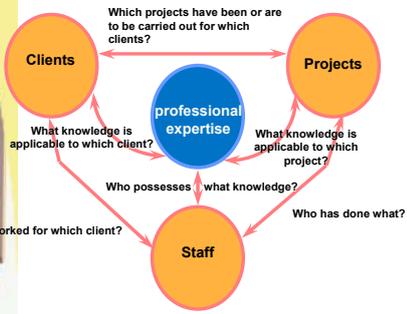
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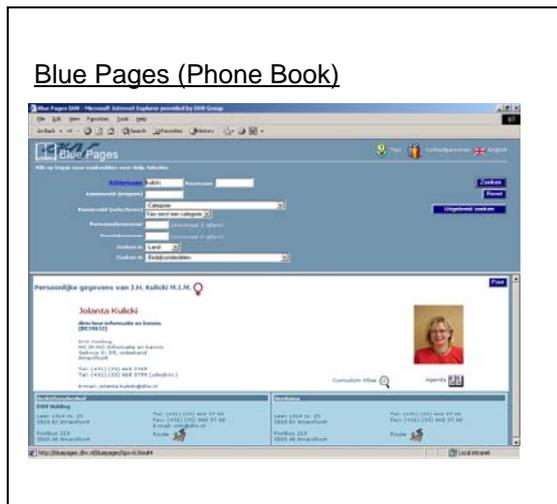
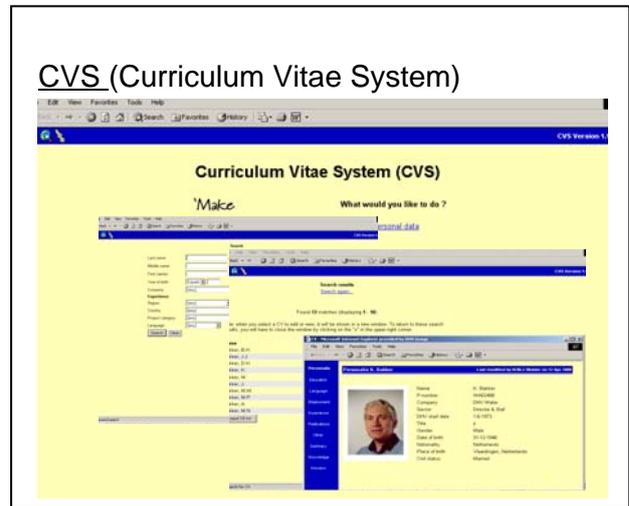
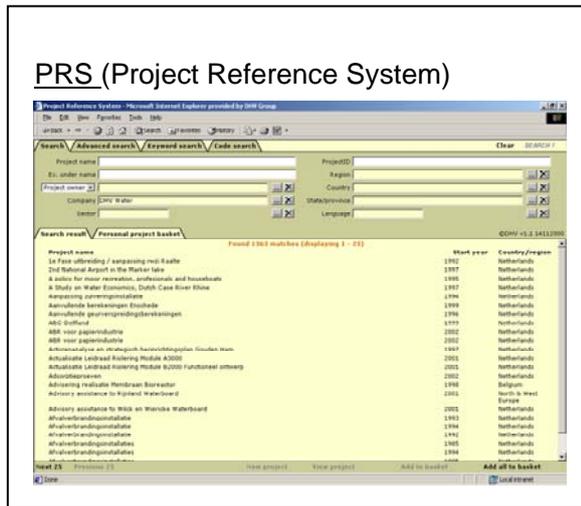
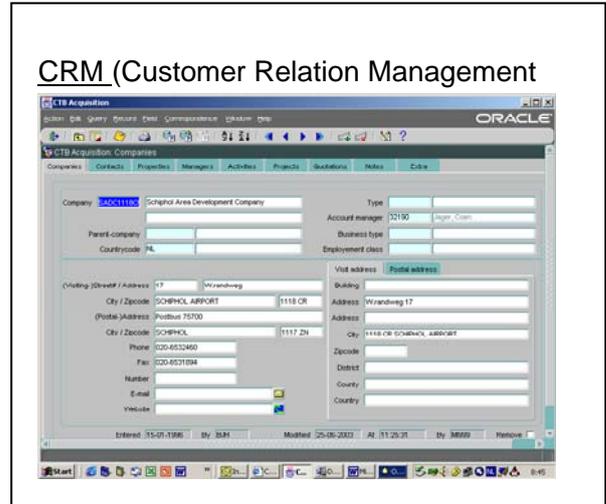
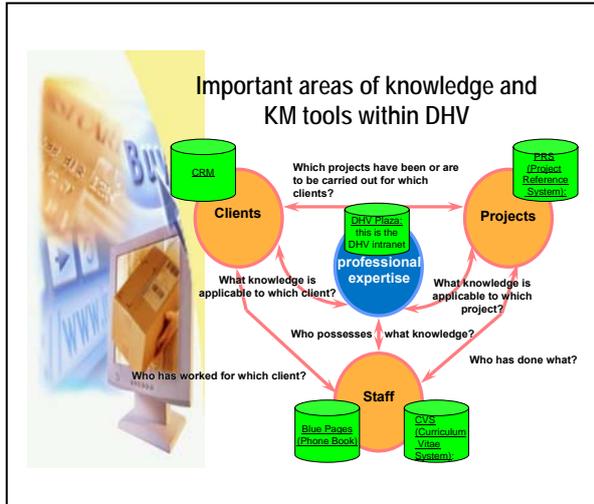
The diagram shows a central 'Organization' node connected to several knowledge sources: 'Knowledge from clients and competitors', 'Info in books', 'Knowledge in heads', 'Experience From Business projects', 'Information in databases', 'Data in internal databases', 'Competencies in people', 'Data in external databases', and 'Knowledge in external professional networks'.

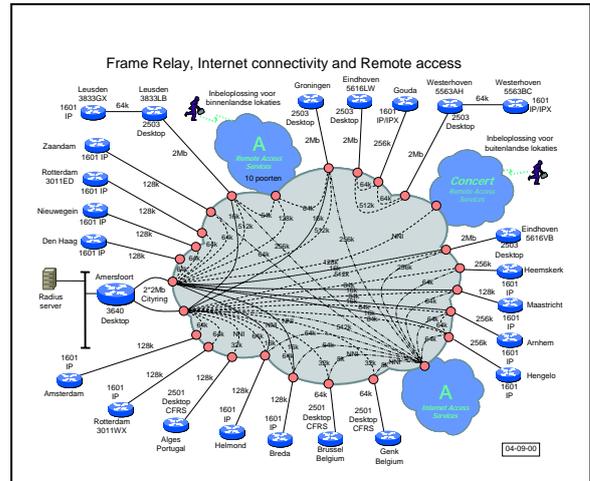
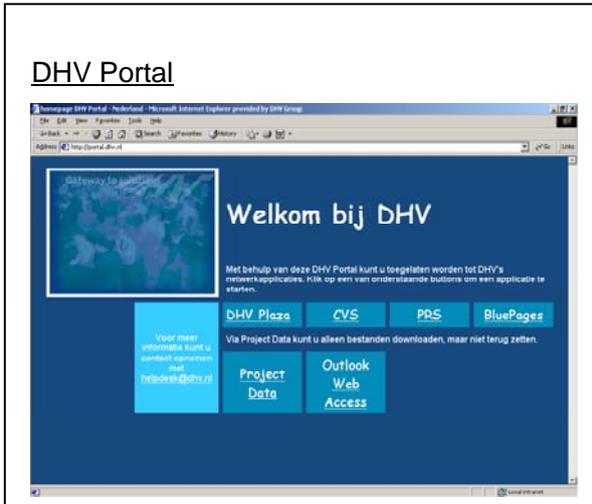


Important areas of knowledge and KM tools within DHV



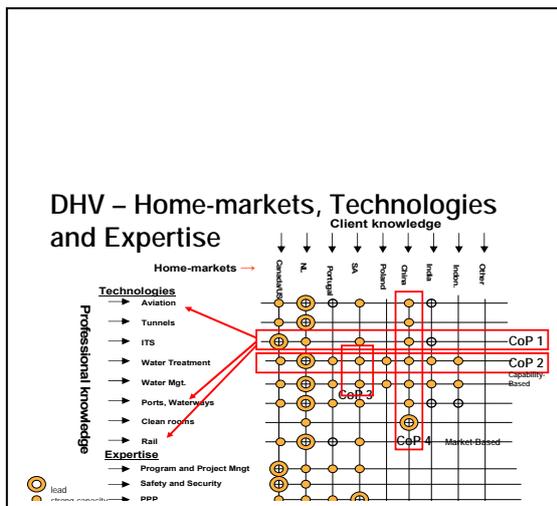
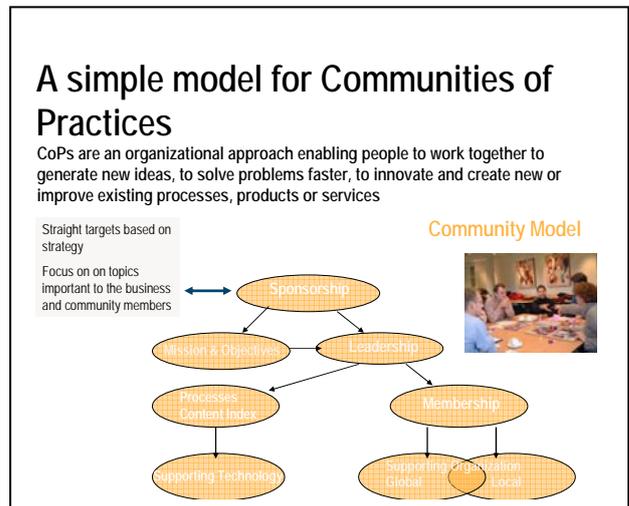
The diagram illustrates the flow of knowledge and expertise between four main areas: Clients, Projects, Staff, and professional expertise. The central node is 'professional expertise'. Arrows point from Clients to Projects, Projects to Staff, Staff to professional expertise, and professional expertise to Clients. Text labels around the diagram ask: 'Which projects have been or are to be carried out for which clients?', 'What knowledge is applicable to which client?', 'What knowledge is applicable to which project?', 'Who possesses what knowledge?', 'Who has worked for which client?', and 'Who has done what?'.

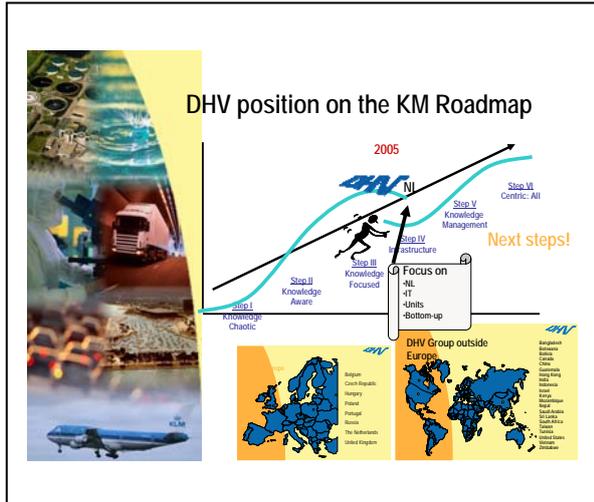




Implementation strategy by DHV: focus on....

- Building a relationship and trust between employees. It will be based on Communities of Practices (CoPs) approach. CoPs will be a flexible organization with temporary structure to link people together
- A standardized Knowledge Sharing System will support global access to the "Intelligent Organisation" knowledge





Knowledge Management

Knowledge Management is formalizing the management of an enterprise's intellectual asset

Enterprise looks to manage their intellectual assets because of the capital embedded in them. This embedded capital is not financial – rather, it is human, organizational and relationship capital.

Final KM Key Facts

- KM is a disciplined process, not a technology !
- KM is an integral part of the organization and its processes
- KM programs must
 - ◆ Be designed to directly support business objectives and process
 - ◆ Yield measurable results; the ROI well-managed KM programs can be 2:1

New Technology
+
Old Organization
=====

The most Admired Knowledge-Intensive Leaders

Drivers for KM →

- knowledge as the main asset
- the need for efficient and effective work
- commodification of products
- globalization of clients
- improving competitive response
- preventing loss of intellectual assets

Focus on

- creating a corporate knowledge-driven culture
- developing knowledge workers through senior management leadership
- delivering knowledge-based products/solutions
- maximizing enterprise intellectual capital
- creating an environment for collaborative knowledge sharing
- creating a learning organization
- delivering value, based on customer knowledge
- transforming enterprise knowledge into shareholder value

Performance ←

- create shareholder value twice as fast as competitors
- showed in 2003 an average ROCE (Return of Capital Employed) of 30.4 compared to the Financial Times Global 500 median of 18.5.

Automotive manufacturers	Bosch, Honda, Toyota
Chemicals	Basf, Dow Chemical, DuPont, Eastman, Shell, W. R. Grace
Consumer products	Beiersdorf, HuggoBosch, Johnson & Johnson, Nestle, Unilever
Electronics and electrical equipment	Canon, Siemens, Sony, Texas Instruments
Information technology	Alcatel, Cisco, IBM, Intel, Microsoft, Oracle, SAP, Sun Microsystems
Oil & gas	BP, Chevron, Exxon, Shell
Pharmaceuticals	AstraZeneca, Johnson & Johnson, Merck
Professional services	Ernst & Young, KPMG, PricewaterhouseCoopers

Source: Teleos - intellectual capital research company 2003 Global Most Admired Knowledge Enterprises (MAKEE) Study

Experience from firms operating globally

KM is an integral part of the (matrix practices/locations) organization

Globally knowledge management initiatives are in place

- ◆ internationally coordinated staff and practice groups develop focussed expertise
- ◆ common procedures and systems
- ◆ an enterprise portal provides global access to the company knowledge database

• Attract the best talent to work in the company
• Investing in KM practises between 2% - 10% as a percentage of revenue !

" Experience indicates that the best knowledge-sharing happens in the companies that create communities of practice - cluster of people linked by common practical interests or activities and sharing knowledge focused on their mutual needs"

Implementation strategy: focus on....



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→ A standardized Knowledge Sharing System will support global access to the "Intelligent Organisation" knowledge

Workshop on e-Governance,
Knowledge Management and e-Learning

FIG April 27-29, 2006
Budapest, Hungary

Closing Info & Discussion, Questions,...

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Thank you for your attention and see you again...

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BIOGRAPHICAL NOTES



Mr. A.A. Kwitowski, The Netherlands,
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