Aided Virtual Team Building System:

Zooming in on Web 2.0 Tools and Competence Management

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Agenda

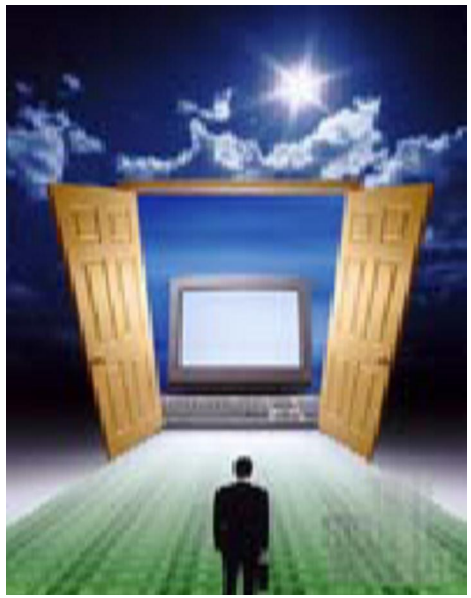
- Context
- Objectives
- Research Approach
  - Functional Analysis
    - Identification of environments
    - Identification of functions
  - House of Quality
- Excursion
- Outcomes

Context → Objectives → Research Approach → Excursion → Outcomes

Context

Context

- Virtual Teams are indispensable because of the demands of modern NPD
  - changes of the professional context
  - developing more sophisticated and innovative products & services
  - global competition
  - mass customisation
  - getting competencies in a faster way and at lower costs
  - strong collaboration on the international market
  - …



Motivation

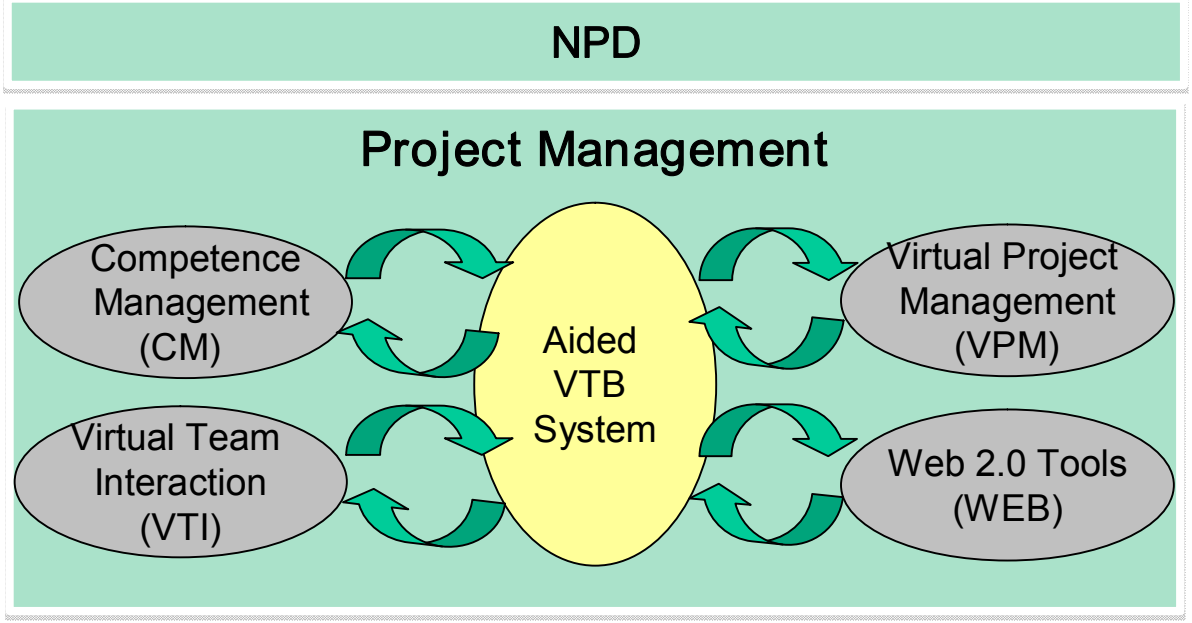
providing an Aided Virtual Team Building System (Aided VTB System) to create Virtual Teams that are active in virtual design projects in the area of NPD

Objectives

Aided VTB System

- This Aided Virtual Team Building System (Aided VTB System)
  - should give recommendations for Virtual Team Building to support NPD processes
  - should help to improve NPD processes to raise innovation in organisations
  - should be applicable to a wide range of organisations in the domain of NPD, to various application domains and to different design projects

Positioning & Objectives



Our focus

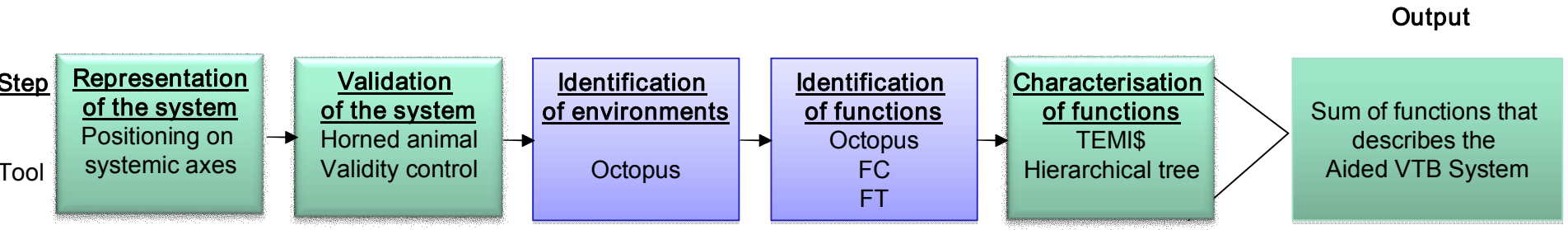
is set on the Aided VTB System that gives best practices, guidelines and recommendations. It is strongly connected with the domain CM, VTI, VPM and WEB.

Research Approach

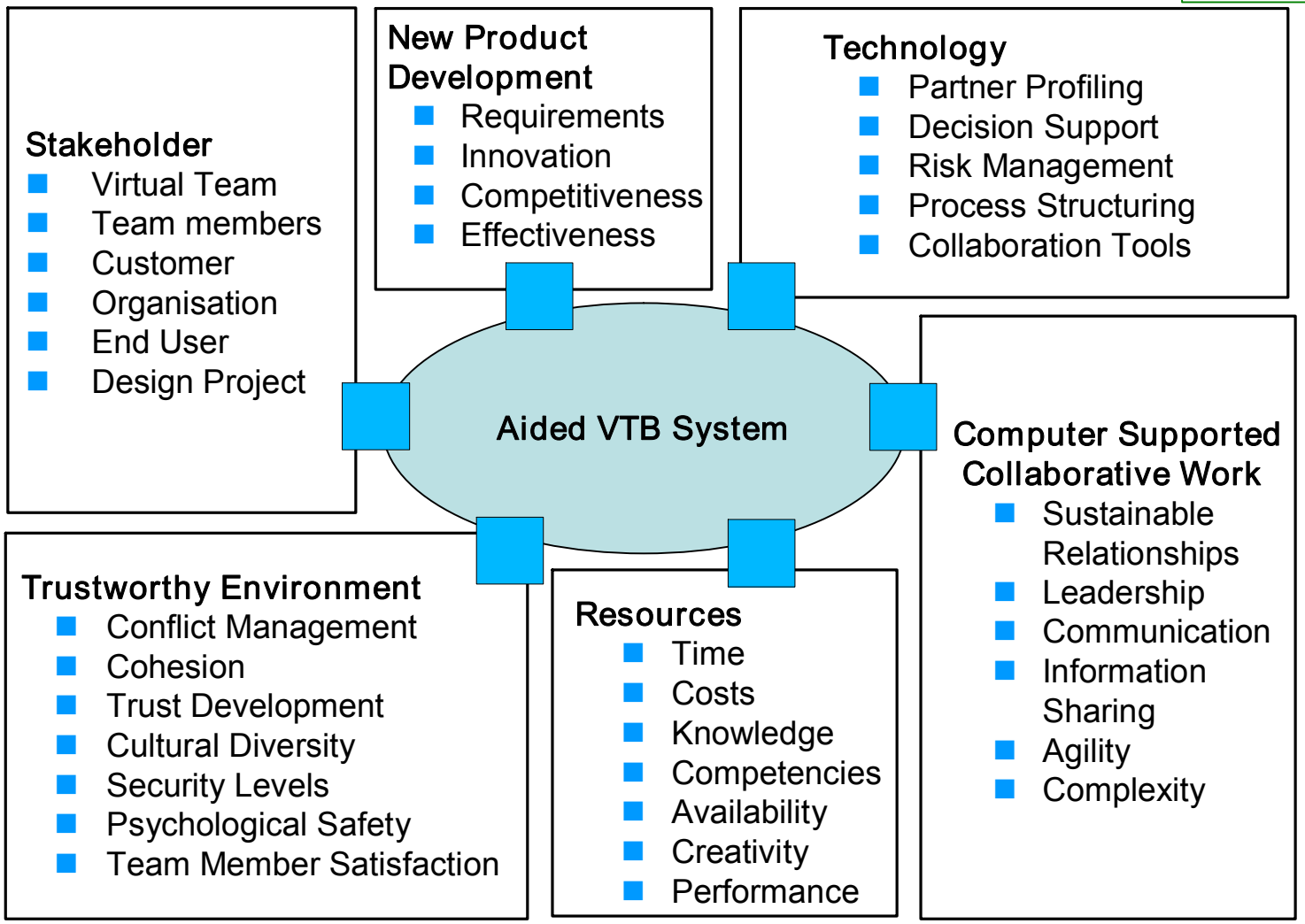
- 1st part:
  - Functional Analysis

Functional analysis

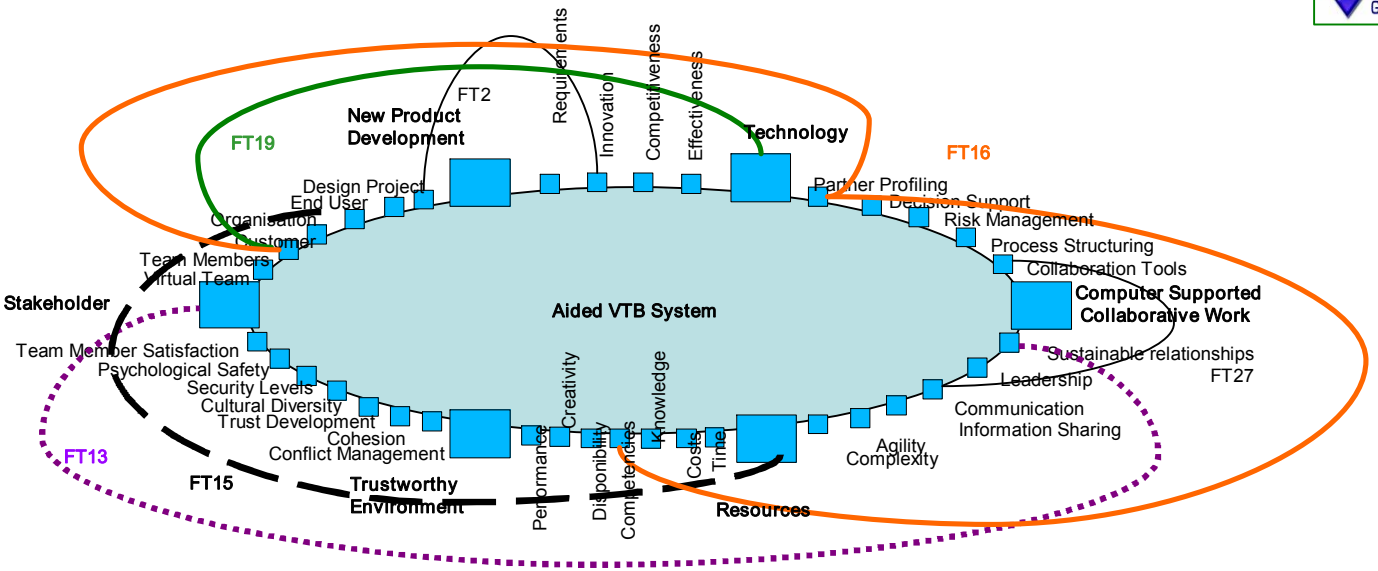
- for understanding and mastering the complexity of new products or industrial systems
- helps to identify needs and requirements
- deals with the important features
- shows interrelations
- the product is considered as a system
- this system is described by functions



Identification of environments



Identification of functions



The system should …

Extract 8/80

FT2 … provide **design projects** to afford **innovation**.

FT13 … help to establish quickly **sustainable relationships** between **stakeholders**.

FT15 … help **organisations** to complete missing **resources**.

FT16 … help to represent **competencies** that are acquired by **team members** to provide an appropriate **partner profiling**.

FT19 … deal with **team members** that act interpedently through **technology**.

FT27 … help to choose the right **collaboration tools** to insure effective **communication**.

FT45 … help that **project members** offer voluntary their **competencies** and **availabilities.**

FC19 … consider principles of **risk management**.

Research Approach

- 2nd part
  - House of Quality

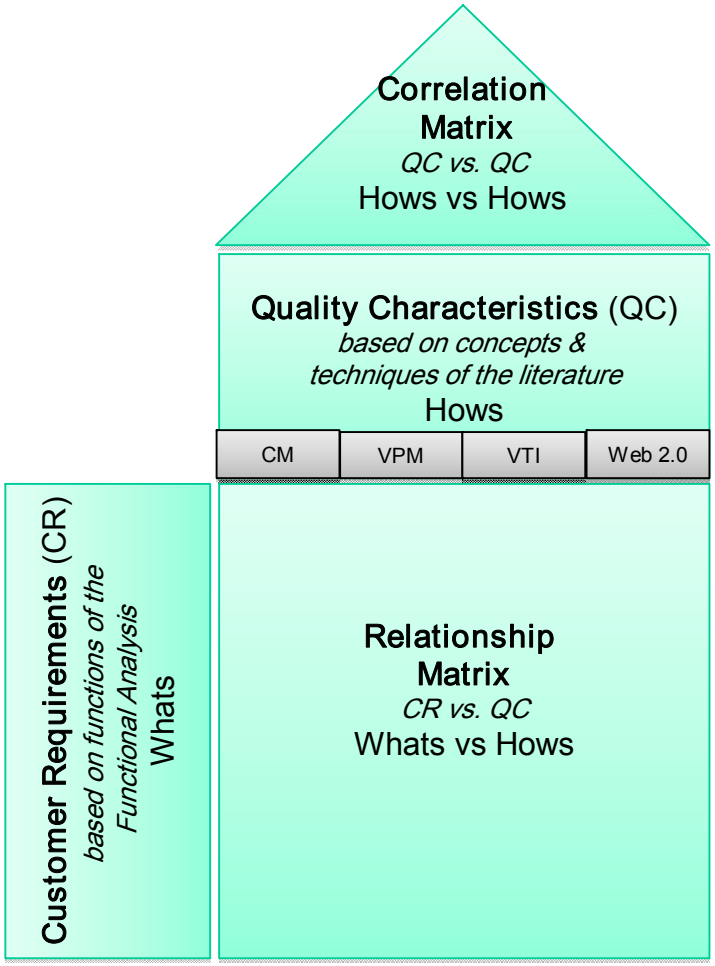
House of Quality

- based on the Quality Function Deployment (QFD) method
- concept for NPD
- transforms customer requirements into design quality by setting up the characteristics that form quality
- transferable to each design problem where solutions can be structured and evaluated regarding customer requirements

House of Quality - Scheme

Legend

Strong Positive Correlation	++	2
Positive Correlation	+	1
Negative Correlation	-	-1
Strong Negative Correlation	▼	-2
Strong Relationship	Θ	9
Moderate Relationship	O	3
Weak Relationship	▲	1

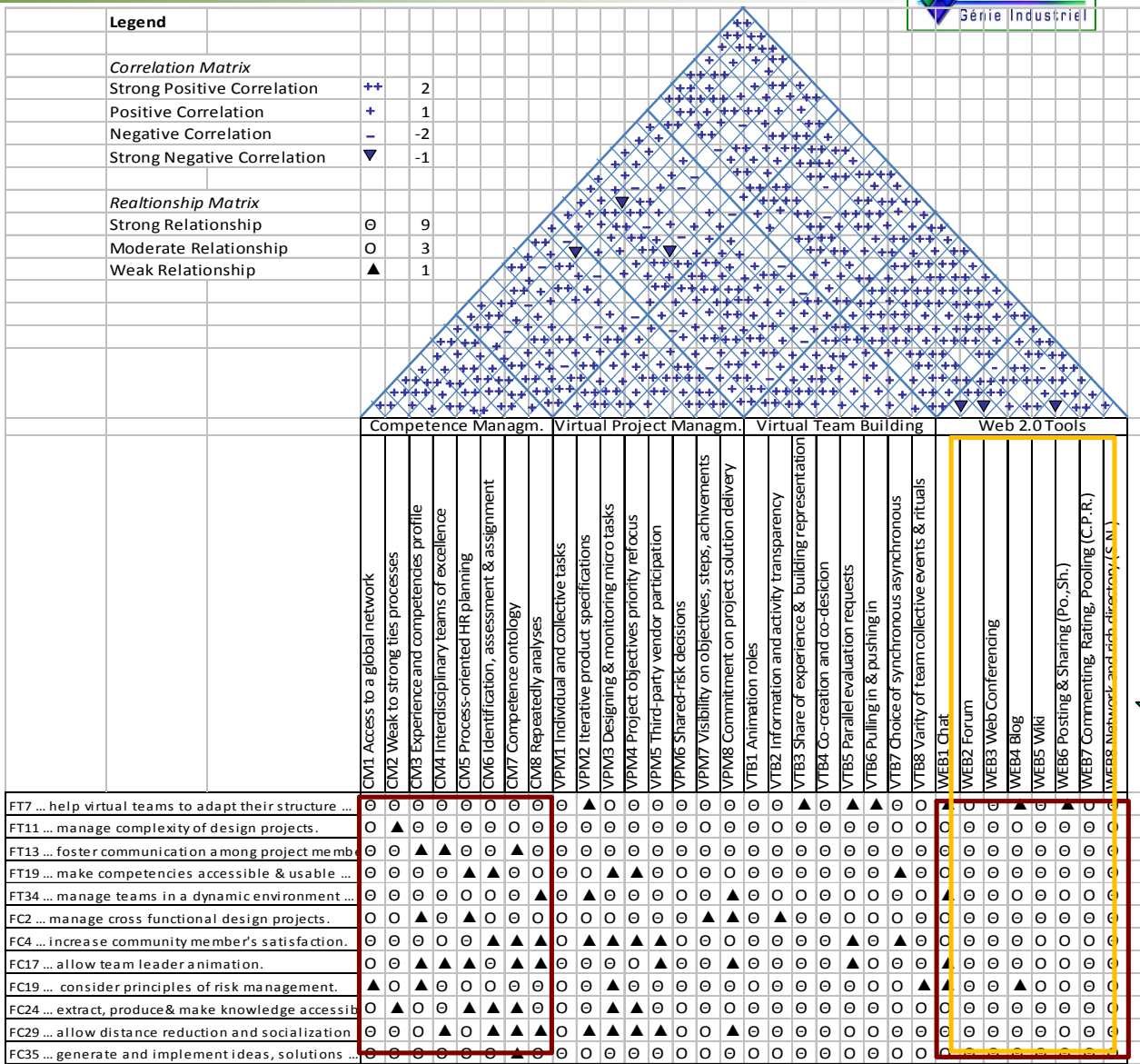


Excursion

Purpose of the study

- 1st purpose: set on an extract of the Aided VTB System
  - how well are the chosen 12 customer requirements satisfied by the extract of 32 quality characteristics
  - which quality characteristics in the domain of competence management and web 2.0 satisfies the best /most of the functions.
  - 2nd purpose: set exclusively on the web 2.0 tools
  - to put our theoretical results in relation with the sample survey of the industrial practice.

House of Aided VTB System (Extract)



Customer Requirements

Customer Requirements The system should…	QC: all Total	 Index	QC: WEB Total	 Index	QC: CM Total	 Index
FT7 … help virtual teams to adapt their structure to the objectives to the requirements by agility.	166	1.16	36	0.65	66	1.48
FT11 … help to manage the complexity of design projects with variable. rich requirements.	172	1.2	51	0.93	52	1.18
FT13 … foster communication among project members.	192	1.34	72	1.3	48	1.08
FT19 … make competencies accessible and useable for organisations.	146	1.06	66	1.2	66	1.48
FT34 … manage virtual teams in a dynamic environment that is described by fluid boundaries and fluid team memberships.	144	1.01	46	0.84	52	1.18
FC2 … help to manage cross functional design projects.	116	0.8	66	1.2	32	0.72
FC4 … increase project member's satisfaction.	120	0.84	48	0.87	45	1.02
FC17 … allow team leader animation.	134	0.94	52	0.94	26	0.59
FC19 … consider principles of risk management.	142	0.99	38	0.69	38	0.86
FC24 … extract, produce and make knowledge accessible.	126	0.88	60	1.09	29	0.66
FC29 … allow distance reduction and easy socialization in trustworthy virtual environment.	102	0.71	66	1.2	29	0.66
FC35 … generate and implement ideas, solutions and improvements.	157	1.1	60	1.09	64	0.66
Ø	143	1	55	1	44	1

Framework of the study

- sample survey based on interviews with 34 marketing managers
- organisations that employ over 5000 employees worldwide
- 3 part of the interview:
  - Introduction part about 20 existing web 2.0 tools definitions to get to a common understanding.
  - Utilisation of each respective tool by the virtual team. Are there others?
  - Evaluation about the interest of the use of the tool within the project teams.

Comparision

House of Quality	Chat	Fm	Conf	Blog	Wiki	P.S.	C.P.R.	S.N.	Ø
A. Relation to customer requirements	40	102	108	80	108	70	90	84	85.3
Index A	**0.47**	**1.20**	**1.27**	**0.94**	**1.27**	**0.82**	**1.06**	**0.99**	**1.00**
B. Correlation to the quality characteristics of all three domains: CM. VPM. VTB	19	35	39	18	35	34	35	28	30.4
Index B	**0.63**	**1.15**	**1.28**	**0.59**	**1.15**	**1.12**	**1.15**	**0.92**	**1.00**
C. Correlation to the quality characteristics of the domain CM	3	10	10	7	11	7	12	11	8.9
Index C	**0.34**	**1.12**	**1.12**	**0.79**	**1.24**	**0.79**	**1.35**	**1.24**	**1.00**
Sample Survey									
% of use in the sample survey	1.38	0.83	1.20	0.53	0.43	1.49	0.88	1.26	1.00
Interest rate in the sample survey	1.01	0.95	1.32	0.82	0.78	1.29	0.93	0.89	1.00

Fm.: Forum
P.S.: Posting & Sharing
C.R.P.: Commenting, Rating, Polling
S.N.: Social Network

Outcomes

Résumé

- represented the approach of the Aided VTB System
- care must be taken in generalizing
  - size of the sample survey and the extract of the Aided VTB System trigger an uncertainty level
- recommendations are given due to the choice of customer requirements

Thank you

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Quality Charateristics CM

Competence Management (CM)	
CM1	Access to a global network of experts, providers and partners
CM2	On demand weak to strong ties processes
CM3	People experience and competencies profile data base
CM4	Interdisciplinary teams of excellence consisting of experts from different areas
CM5	Process-oriented human resources planning
CM6	Systematic identification, assessment & assignment of competence requirements of projects
CM7	Projects' associated competencies ontology
CM8	Repeatedly analyses of partial tasks to determine changed requirements for competencies during the process

Quality Charateristics WEB

Web 2.0 (WEB)	
WEB1	Chat: Instant written conversation area, where the real-time dialog appears line by line as in a book's people dialog.
WEB2	Forum (Fm): Area opened by a moderator who suggests specific topics and invites members to post messages and comments.
WEB3	Web Conferencing: Live meeting combining voice on the phone and onscreen presentations by a speaker.
WEB4	Blog: Personal web site where owner post messages and invite people to post comments.
WEB5	Wiki: Web site which pages can be created and modified by visitors.
WEB6	Posting & Sharing (P.S.): Ability given to visitors to upload & to modify documents located in a web site area.
WEB7	Commenting, Rating, Polling (C.R.P.): Add a written remark, evaluate content & survey participants' opinion with online questionnaires
WEB8	Social Network (S.N.): A site where community members post in a personal area their profile, photo, interest and links with other persons