

Appendix G

Figures

Chapter 1

Figure 1-1	Conflicting Concepts of Knowledge
Figure 1-2	Knowledge and Information Sources
Figure 1-3	How Knowledge should be provided
Figure 1-4	The use of IT Systems

Chapter 2

Figure 2.1-1	Knowledge Pyramid
Figure 2.1-2	Knowledge Staircase [North, 2002]
Figure 2.1-3	Types of Knowledge [Haun, 2002]
Figure 2.2-1	Example of a Definitional Network (part)
Figure 2.2-2	Example of RDF Graph
Figure 2.2-3	Example of reification in a RDF Graph
Figure 2.2-4	Example of RDF /XML
Figure 2.2-5	Classes and Resources as Sets and Elements [Brickley & Guha, 1999]
Figure 2.2-6	Class Hierarchy for the RDF Schema [Brickley & Guha, 1999]
Figure 2.2-7	Example of a Topic Map
Figure 2.2-8	Topics, Occurrences and Associations in Topic Maps
Figure 2.2-9	Examples of Names in Topic Maps
Figure 2.2-10	Example of Using Scopes in Topic Maps
Figure 2.2-11	Overview of Search- and Retrieval-Methods
Figure 2.2-12	Example of Expert Search
Figure 2.2-13	The Case-Base Reasoning Cycle [Aamodt & Plaza, 1994]
Figure 2.2-14	Comparing the Characteristics of the IR Models [Chu, 2003]

Figure 2.2-15 Example of a Tag Cloud and how to Edit a Tag for a Document

Figure 2.2-16 Methods of Knowledge Representation and their Actors
[Stock & Stock, 2008]

Figure 2.3-1 Example of All integrated IT Systems in one search

Figure 2.3-2 Photo of a torque wrench [Wikipedia: torque wrench]

Figure 2.3-3 Elements of a KMS [Maier, 2002]

Figure 2.3-4 Knowledge Repository Layer Example

Figure 2.3-5 Visualisation Layer Example

Figure 2.3-6 Hierarchy of Search Methods in e:kms

Figure 2.3-7 Automatic Creation of Overview Map by Infocodex

Figure 2.3-8 Example of a Collection of Topic Networks

Figure 2.3-9 Example of a Collection of Concept Networks

Figure 2.3-10 Processing a Search in KnowledgeMiner

Figure 2.3-11.a Comparison of the Four KMS

Figure 2.3-11.b Comparison of the Four KMS (continued)

Chapter 3

Figure 3.1-1 Standard Wiki vs. Semantic Wiki [Haller et al., 2006]

Figure 3.1-2 Trend from storage oriented up to collaboration oriented
Knowledge Management

Figure 3.2-1 Focus of the Examined Exchange Platforms

Figure 3.2-2 Usability in Relation to the Number of Solution Methods of the
Examined Exchange Platforms

Figure 3.2-3 User Motivation in Relation to Communication Type of the
Examined Exchange Platforms

Figure 3.2-4 Overview of Modules Offered by the Examined Exchange Platforms

Figure 3.2-5 Possibilities for Search of Resources Offered by the Examined
Platforms

Figure 3.2-6 Possibilities for Search of Experts Offered by the Examined Platforms

-
- Figure 3.3-1 Percentage of Attendees with Access to a Knowledge Management System
- Figure 3.3-2 Age of Attendees
- Figure 3.3-3 Class of Experiences of Attendees
- Figure 3.3-4 Satisfaction with Used Knowledge Management System
- Figure 3.3-5 Use of Knowledge Management System
- Figure 3.3-6 Reasons Why Users do Not Use the Knowledge Management System
- Figure 3.3-7 Analysis of the Question
“How long will it take to find an answer by ...?”
- Figure 3.3-8 Order of Actions a Employee Will Take to Solve a Problem
- Figure 3.3-9 Valuation of Functionality of a Hypothetical Knowledge Management System
- Figure 3.3-10 Sighted Search Results Before Break-Off in Average
-
- Figure 3.4-1 Elements of Knowledge Management [Probst et al., 2000]
- Figure 3.4-2 Knowledge Spiral [Nonaka & Takeuchi, 1995]
- Figure 3.4-3 Instruments for Knowledge Transformation [Dombrowski & Kuper, 2004]
- Figure 3.4-4 Simplified Business Processes of Traditional Knowledge Management
- Figure 3.4-5 Transfer of Information and Knowledge [Maier, 2002]
-
- Figure 3.5-1 Basic Conditions of Knowledge Management [Wolf, 1999]
- Figure 3.5-2 Model for KM Enablers and Barriers [Anantatmula & Kanungo, 2007]
- Figure 3.5-3 New Paradigm: Knowledge Communication

Chapter 4

- Figure 4.1-1 A user can search in the Knowledge Broker Portal
- Figure 4.1-2 A user can ask an expert.
A dialogue between the user and the expert starts.
- Figure 4.1-3 Additionally the user can ask a personal Knowledge Broker.
- Figure 4.1-4 The personal Knowledge Broker informs users about available documents and experts.
- Figure 4.1-5 Establishing contact between asking user and expert.
- Figure 4.1-6 Interaction Flow within the KBN Approach
-
- Figure 4.2-1 Example Knowledge Network with Employee Structure
- Figure 4.2-2 Example Knowledge Network with Employee Experiences
- Figure 4.2-3 Automated integrated Documents within a Knowledge Network
- Figure 4.2-4 Meta Structure for Company Hierarchies
-
- Figure 4.3-1 Personalisation Concept based on hidden Nodes in the Enterprise Knowledge Network and added Nodes in Private Parts of the Knowledge Network
- Figure 4.3-2 Personalisation Concept based on Rating Nodes and Links in the Enterprise Knowledge Network
- Figure 4.3-3 KBN Portal: Search Results, Additional Hints and Rating of Results
-
- Figure 4.4-1 Example of a Community of Practice
- Figure 4.4-2 Calculation of Implicit User Relationships
-
- Figure 4.5-1 Simplified Semantic Network for SAA Introduction
- Figure 4.5-2 Simplified Table for SAA Introduction
- Figure 4.5-3 SAA Example Network in a more abstract picture
- Figure 4.5-4 SAA Example First Recommendation in a more abstract picture
- Figure 4.5-5 Recommendation of KBN Knowledge Retrieval Example Algorithm
- Figure 4.5-6 Complexity Reduction step of KBN Knowledge Retrieval Example Algorithm

- Figure 4.5-7 User Interaction in KBN Knowledge Retrieval Example Algorithm
- Figure 4.5-8 Final Recommendation of KBN Knowledge Retrieval Example Algorithm
- Figure 4.5-9 Using more than the First Ranked Search Result
- Figure 4.5-10 SAA using Rated Links
- Figure 4.5-11 Meta-Links / Abstract Links
- Figure 4.5-12 SAA using Rated Nodes
-
- Figure 4.8-1 Connecting KMS Islands using the KB Network
-
- Figure 4.9-1 Positioning of Information Boxes within the KBN Portal
- Figure 4.9-2 KBN Portal: Login Dialogue
- Figure 4.9-3 KBN Portal: Start Screen
- Figure 4.9-4 KBN Portal: Sending a Request to the Personal Knowledge Broker
- Figure 4.9-5 KBN Portal: Answer from an Expert
- Figure 4.9-6 KBN Portal: Question of a Colleague to the User
- Figure 4.9-7 KBN Portal: Answering the Request of an Colleague (asked in Figure 4.9-6)
- Figure 4.9-8 KBN Portal: Confirming Saving and Sending of an Answer shown in Figure 4.9-7
- Figure 4.9-9 KBN Portal: Example of a Search Result
- Figure 4.9-10 KBN Portal: Example of Details of a Search Result and Additional Hints
- Figure 4.9-11 KBN Portal: Sending an Internet Call
- Figure 4.9-12 Portlets Displayed Within a Portlet Container [Reinbold, 2007]
- Figure 4.9-13 KBN System Using a Portal to Separate Search and Communication Functionality
-
- Figure 4.10-1 Example of a Method within a DLL
- Figure 4.10-2 Implicit Binding of a DLL
- Figure 4.10-3 Explicit Binding of a DLL
- Figure 4.10-4 How Web Services, WSDL and UDDI work
- Figure 4.10-5 Example for the Creation of a Dynamic JAVA Class

-
- Figure 4.10-6 MVC Architecture used by Struts [Turner & Bedell, 2003b]
- Figure 4.10-7 Prototype Directory Structure as Extension of Struts Directory Structure
- Figure 4.10-8 The K-Infinity MVC Architecture
- Figure 4.10-9 KPath Examples
- Figure 4.10-10 SAA Prototype Use-Case
- Figure 4.10-11 Adapted Variant of “Strategy” Design Pattern for SAA Infrastructure
- Figure 4.10-12 Flowchart of Gathering and Validating of existing Algorithms
- Figure 4.10-13 Source Code of the Method “getLabel”
- Figure 4.10-14 Source Code of the Method “printHitList”
- Figure 4.10-15 Source Code of the Method “hitListToXML”
- Figure 4.10-16 Example SAA Result Coded in XML using the Method “hitListToXML” (upper part) and how it looks like in a Browser formatted with XSLT (lower part)
- Figure 4.10-17 Signature of the Method “doKEMSearch”
- Figure 4.10-18 Example for using the Method “doKEMSearch”
- Figure 4.10-19 Signature of the Method “getSuperConcepts”
- Figure 4.10-20 Working with KEM illustrated using Source Code Parts of “doKEMSearch”
- Figure 4.10-21 Import of all KEM Interfaces
- Figure 4.10-22 Part of a Knowledge Network for the SAA Test
- Figure 4.10-23 Navigating through the Knowledge Network using K-Infinity Standard Search Methods
- Figure 4.10-24 Hints (Recommendations) calculated by SAA after three User Interactions
- Figure 4.12-1 Acceptance of Knowledge Broker

Chapter 5

- Figure 5.1-1 Geographical Oriented User Interface Example
- Figure 5.1-2 Zooming Grid User Interface Example
- Figure 5.1-3 Broker User Interface Example
-
- Figure 5.2-1 Personal Assistance Network Using External Experts and Services
-
- Figure 5.3-1 IBN Overview
- Figure 5.3-2 Infobroker Directory LDAP Structure [Preuss, 2002]
- Figure 5.3-3 Java Client Tool for Browsing and Searching the Infobroker Directory [Preuss, 2002]
- Figure 5.3-4 Infobroker Workflow Flowchart
-
- Figure 5.4-1 Distinguished Name (DN)
- Figure 5.4-2 Example LDAP Directory Structure
- Figure 5.4-3 Example LDAP Group
- Figure 5.4-4 LDAP Class “top”
- Figure 5.4-5 Private Enterprise Numbers for Use in Prototype
- Figure 5.4-6 Pre-Defined LDAP Classes Chosen for Use by Infobroker Prototype
- Figure 5.4-7 Definition of Private Class “cIndustry” for Use by Infobroker Prototype
- Figure 5.4-8 Definition of Private Attribute “cSpeciality” and Private Class “cSpeciality” for Use by Infobroker Prototype
- Figure 5.4-9 Attributes of the Infobroker Profile
- Figure 5.4-10 Definition of the Attributes of the Infobroker Profile
- Figure 5.4-11 Definition of the Class “cIBProfile”
- Figure 5.4-12 DTD of “alBSkills”
- Figure 5.4-13 Using Kerberos / SASL for Authentication

Chapter 6

Figure 6-1 Trends changing from storage oriented KM to collaboration and communication oriented KM

Appendix B

Figure B.1-1 Example DTD
Figure B.1-2 Example XML Data
Figure B.1-3 Example XSL Style sheet
Figure B.1-4 Example Output Using Data of Figure B.1-2 and Style sheet of Figure B.1-3
Figure B.1-5 Example XSL Style sheet Using XPath Functionality
Figure B.1-6 Example Output Using Data of Figure B.1-2 and XPath Style sheet of Figure B.1-5
Figure B.1-7 Example URIs Using XPointer
Figure B.1-8 Example of Simple XLink
Figure B.1-9 Example of Extended XLink
Figure B.1-10 XLink Link Types [Jeckle, 2004]

Figure B.2-1 Topic Classes [Rath, 2003]
Figure B.2-2 Occurrence Classes [Rath, 2003]
Figure B.2-3 Association Classes [Rath, 2003]

Figure B.3-1 Example of depth-first search [Winston, 1993]
Figure B.3-2 Example of breadth-first search [Winston, 1993]
Figure B.3-3 Example of Hill-Climbing [Winston, 1993]
Figure B.3-4 Example of Beam-Search [Winston, 1993]

Appendix C

- Figure C.1-1 Knowledge Management Applications in 2000 [Nohr, 2000]
- Figure C.1-2 Purpose of Systems for Knowledge Management in 2000 [Nohr,2000]
- Figure C.1-3 Size of participating companies in Nohr, 2000
- Figure C.2-1 Knowledge Management Applications in 2001 [unicmind, 2001]
- Figure C.3-1 Features Asked for in Knowledge Management Systems in 2001
[Inst. f. e-Management 2001b/c]
- Figure C.4-1 Localisation of Knowledge [Ohle, 2003]
- Figure C.4-2 Knowledge Sources for Daily Work [Ohle, 2003]
- Figure C.4-3 Size of participating companies in Ohle, 2003
- Figure C.5-1 Used Knowledge Sources for KM [Koeder & Rohleder, 2004]
- Figure C.5-2 Used and Planned IT Systems for KM in 15 Participating Companies
[Koeder & Rohleder, 2004]
- Figure C.6-1 Focus in KM [Linde, 2005]

Appendix D

- Figure D-1.a Functions of Examined Platforms in Details
- Figure D-1.b Functions of Examined Platforms in Details (continued)
- Figure D-2 Search Functions and Result Types by Searching for
Resources in Details
- Figure D-3 Search Functions and Result Types by Searching for
Experts in Details

Appendix E

- Figure E-1 Icons to identify a Person or a Community
- Figure E-2 Icons to identify a Colleague and the direction and
status of the communication
- Figure E-3 Icons to identify a Knowledge Broker and the direction and
status of the communication
- Figure E-4 Icons to identify myself and the direction and
status of the communication

Appendix F

- Figure F-1.a Comparison of the Four KMS with KBN Concept
- Figure F-1.b Comparison of the Four KMS with KBN Concept (continued)