Preface

Knowledge Management

Today the economy of knowledge is already a reality. It is recognized by the European Union as a major factor in durable growth. Recent studies by the OECD[1] have shown the influence of Knowledge Management on the productivity of companies. Companies constantly test, in a precise or diffuse way, the consequences of actions that touch their knowledge capital, whether in a positive way (if, for example, their know-how leads to an increase in market share), or in a negative way (if, for example, knowledge is lost for one reason or another: reorganization, retirements, etc.).

Knowledge Management (KM) started from a number of basic problems and has now developed to become a real discipline with its own problems, methods and tools. It is a developing discipline that borrows from various fields: economics, management, social sciences, information sciences and technologies, educational studies, etc.

The aims of KM are ambitious: to set up devices (organizations, methods and tools) that develop, in a very extensive sense, the knowledge capital that any social organization accumulates during its life cycle.

The challenge for companies is strategic: productivity, competitiveness, continuity … But there is a long way to go. After an "information revolution" that was carried out almost under duress, will we go forward to a "knowledge revolution" (it would be more relevant to speak about a "revolution through knowledge")? The path is being built step by step, and the directions are all still far from being marked out. There is still much room for creativity, innovation and experimentation.

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1 Organization for Economic Co-operation and Development, http://www.oecd.org.

Two French KM players have joined together to produce this book.

The GET and INT

The Groupe des Ecoles des Télécommunications (GET) constitutes one pole of reference within the French network of public research in Information and Communication Sciences and Technologies. Its research force includes about 550 full-time-equivalent-researchers, and its scientific activity is likely to be doubled by 2005. The GET is composed of four "high" Engineering and Management Schools, to which three establishments created jointly with universities have been added, in the form of GIE (Economic Grouping of Interest).

Among the GET schools, the National Institute of Telecommunications (INT) is unique: for 25 years, it has been made up of two schools on the same campus: an engineering school (Telecom INT) and a management school (INT Management). This combination has constituted a major asset, because today, more than ever, this double competence has become both essential and natural and is focus of concern of most companies.

It is thus natural that INT is developing along the axis of Knowledge Management, which lies between the management of companies and the science and technology of information and communication.

The Club Gestion des Connaissances: the Knowledge Management Club

The *Club Gestion des Connaissances* is an association of companies founded in 1999. Its founder members were PSA Peugeot Citroen, Microsoft France, Cofinoga and OSIS group (Bull). It includes within its structure organizations of all types and all sizes.

Already members of this club are: industrialists such as PSA Peugeot Citroën and Thales; software producers such as Microsoft and SAP; French state organizations such as the General Direction of the Armament (DGA) and the National Navy; research organizations such as the National Office of Studies and Aerospace Research (ONERA), the National Institute of Research and Safety (INRS), the National Center of Space Studies (CNES), Hydro-Québec (Canada) and Radio-France; service companies such as Cap Gemini Ernst and Young and Cegos; and SMEs (small and medium-sized companies).

The companies and organizations that decided to found the Club Gestion des Connaissances considered that knowledge is economic capital, a factor in productivity,

stability and determination of competitive assets. They wished there to be no delay in French and European companies compared to their world competitors in this field.

Its objectives are:

– to develop intersector dialogue and debates between decision makers and experts;

– to help managers to locate their actions within the major evolutions in this strategic field;

– to propose thinktanks, meetings, documents, etc., so that in a very short time rich and global information could be collected;

– to increase the dialogue between all players and to extend networks;

– to provide the members with a set of concepts and operational tools that will helping to implement developments within knowledge management in their organizations.

The club functions through thematic workgroups, which study topics identified as crucial for knowledge management: economic aspects, innovation, continuous progress, competence management, business intelligence, knowledge cartography, etc. Each commission, under a chairman, produces deliverables that are integrated into the club knowledge capital to be shared by all the members. Special events allow members to come together for more informal exchanges.

The Knowledge Management seminar

INT and the Club Gestion des Connaissances joined together to organize a seminar entitled *Trois jours pour faire le point sur le Knowledge Management* (Three days to provide a progress report on Knowledge Management) in April 2003. This seminar stressed the importance of KM as a key factor in success and a lever of growth and innovation. This provided a progress report on the whole of theoretical and practical work in this field over recent years. On one hand, recognized researchers in the field presented concepts, methods and tools of KM. On the other hand, players in the economic/business world shared their experiments and their thoughts by presenting experience feedback, case studies and concrete syntheses.

The contributions and exchanges were rich and relevant. The points of view presented were very varied and characteristic of trends in the field. In order that exchanges on these days would not remain confidential, it was decided to produce a book based on the meeting. One will thus find here the major part of the discussions that took place at this seminar. One can thus position the whole of original French work in the field, work that is interdisciplinary based on two complementary points of view: that of companies and that of researchers.

The original French version of this book, entitled *Management des connaissances en enterprise*, was published in March 2004 by Hermès Lavoisier as part of the Technical and Scientific Collection of Telecommunications (CTST).

The content of this book clearly reflects the subjects tackled during the seminar, which corresponded, as far as we could tell, to the major concerns of the companies starting in KM.

Trends in applied Knowledge Management

This book is a translated and augmented version of the original French book with a more international dimension. It includes contributions from authors in different countries (e.g., the UK, Canada, Holland, Argentina, Brazil). It reflects only the opinions and work of that "knowledge network" of contributors, who are, for the majority, recognized as dynamic actors in that field. The work does not claim to be exhaustive on the subject, which would be rather pretentious in a field that some would like to see marked out already, whereas it is only now emerging.

Introduction

Three introductory chapters are given first. Jean-Louis Ermine gives an overview of KM, from a pragmatic and rather engineering point of view. Every succeeding chapter is more or less a detailed study of what is presented there. Patrick Epingard gives an introduction to KM from an economic point of view. This is the fundamental reason why applied KM is set up in companies. Walter Baets gives an introduction to KM from a rather epistemological point of view. The fundamental hypothesis here is that KM is based on complex system theory, which is the framework of each succeeding chapter (even if it may sometimes be hidden!).

Academic studies

The second part of the book is written by academics. It compiles and analyses many applied KM studies and cases.

Nigel Courtney, Clive Holtham and Chris Hendry analyze the experiences of eight varied organizations in managing their intangible assets in the UK, other EU states and the USA. Jean-Michel Viola and Réal Jacob, giving the example of a large Canadian company, show how knowledge elicitation triggers a learning process and tacit knowledge creation. Aurélie Dudezert gives an overview of the different methods and approaches used in companies to value KM performance. Imed Boughzala shows how inter-company co-operative information systems may support KM in the framework of the extended enterprise. Thierno Tounkara puts

forward a proposal to link KM and environment scanning, which is a frequent question but one with few answers. Finally, Pierre Fayard gives a very different point of view on KM, inspired by the Japanese concept of "*Ba*", returning to the sources of KM, which is greatly influenced by the Japanese School led by Professor Nonaka.

French KM Club studies

The third part of the book is an overview of the pragmatic work of the companies of the French KM Club and tools that have been designed and are currently applied in these companies and some others.

Jean-François Tendron describes a general evaluation tool, called the "Knowledge Maturity Model", dedicated to revealing the capacity of a company in managing its knowledge capital. Gérard Aubertin proposes a methodology for elaborating a knowledge map of a company and a strategic assessment of each identified knowledge domain, using "Critical Knowledge Factors". Jean-Marie Bézard describes a tool dedicated to evaluating the capacity of a company to be innovative ("Innovation Maturity Model"). Olivier Lepretre, with the tool "Technology Maturity Model", analyzes how information and communication technologies are used in a company to fulfill KM requirements.

Case studies

The last part of this book gives a number of case studies

Nathalie Le Bris describes KM experience in a European automotive industry. Cécile Decamps and Michel Galinier describe how Thales, a worldwide defence industry, organises "Communities of Practice" for KM. The last two case studies are in the nuclear field, which is particularly involved in KM, a top priority in the world for that domain: the first is by Rita Izabel Ricciardi and Antonio Carlos de Oliveira Barroso concerning a radio-pharmacy centre in Brazil, while the second by Marta Eppenstein concerns a nuclear power plant in Argentina.

Conclusion

We hope, with these contributions to show both that KM is alive and concerns a wide range of issues, and that interaction between companies and researchers is fertile. This is because it is true, in this field, that real problems of research are born out of real problems in the real world.

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