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**SGKM**
Schweizerische Gesellschaft
für Kommunikations-
und Medienwissenschaft

**SSCM**
Société suisse des sciences
de la communication
et des médias

**SSCM**
Società svizzera di scienze
della comunicazione
e dei media

**SACMR**
Swiss Association
of Communication and
Media Research

Boisot, Max; MacMillan, Ian & Keyong Seok Han (2007). Explorations in Information Space: Knowledge, Actors, and Firms. Oxford: University Press.

Much has been written about knowledge management and value creation. But a real theoretical framework for the creation and the sharing of knowledge is lacking in much of the work done so far.

In fact, with the rise of the knowledge economy, economic value is increasingly seen as relying on intangible assets rather than physical assets. Strategies for managing knowledge thus become of central concern. This is one of the reasons why "knowledge" has been so crucial for economic and management fields over the last two decades. But since "knowledge" is not only bare data, or information, but rather the result of a process involving space and time, the nature of knowledge takes on a strategic dimension. Across disciplines and functional boundaries, philosophers, economists, sociologists, organisation theorists as well as managers have debated the nature of knowledge without a real theoretical consensus.

This book is precisely concerned with this issue. It aims at providing a theoretical framework to explore the nature of relevant organisational knowledge within and between firms, and in any other social system. The authors stress the fact that current knowledge management approaches are mainly Information and Communication Technology driven, focusing on the application of tools, and con-

sidering knowledge as a stand-alone resource: something that can be commercialised, stocked, manipulated and defined with clear perimeters. In this book, the authors conceive knowledge as a value creating process, demonstrating that the knowledge management field lacks a founding theory focused on the nature of knowledge and knowledge flows. It is, consequently, not possible to have a credible theory about how to manage knowledge in a firm without first developing a knowledge-based-theory of the firm.

The two main goals of the book can be summarized as follows: Firstly, to build up the foundations of a theory for a conceptual framework centred on knowledge flows, which the authors call the Information Space or I-Space. Secondly, to connect the I-Space framework to the actual world by exposing the managerial implications deriving from the heterogeneous institutional structures that emerge from data processing strategies.

The book is an anthology of articles that have been published in various journals and that are sorted in a coherent order. There are, of course, advantages and disadvantages of publishing an anthology, a fact that the authors acknowledge themselves: on the one hand, each chapter can stand alone, but, on the other hand, the reader will notice redundancies between the different chapters, as well as the fact that the chapters are very different in nature: the perspective and the level of analysis change from one chapter to another.

The structure of the book is quite clear: the five first chapters are dedicated to building the theory for a conceptual

framework (the I-Space) and to fo-
cusing on knowledge flows. The sixth
chapter demonstrates how and for what
type of research studies the I-Space can
be applied. A seventh chapter concludes
proposing a research agenda.

In what can be called an introduc-
tory theoretical chapter, Max Boisot
sets up the scene for his theory by high-
lighting the main issues linked to the
knowledge society and the evolution of
the different approaches to knowledge
according to various disciplines and to
historical and economical contexts. It is
well written and offers accurate defini-
tions. In fact, knowledge management
is a field in which most definitions are
abstract and to some extent unclear.
Thus, the first chapter is dedicated to
the conceptualisation of knowledge
and clarifies how it is related to data
and information. The authors claim
that the distinction between data, in-
formation and knowledge has to be
revisited, and that light should be shed
on how these three concepts relate
to each other. In fact, they conclude,
these concepts are weakly grounded
in theory, although understanding
knowledge requires understanding
their conceptual foundations. Without
this elucidation it would be difficult to
understand the data-processing strate-
gies that emerge.

Information can be used, it is ar-
gued, to mediate the relationship be-
tween the stimuli of the world that
reach an actor and the actor's prior
knowledge. Knowledge is viewed as a
set of expectations that filters incom-
ing stimuli and makes the actor behave
in a particular way. One may fear that
this approach reduces knowledge to a

subjective experience, as argued by the
radical constructivists. But it actually
adopts an evolutionary perspective,
affirming that even if knowledge dif-
fers across individuals, some objec-
tive knowledge will gradually emerge
thanks to the overlaps in the respective
situations and data-processing strate-
gies of the different actors.

In the two following chapters
(chapter 2 and 3), the different strate-
gies when using knowledge are exam-
ined. This analysis takes place first at
the individual level and second at the
organisational level. At the individual
level, two distinct and yet complemen-
tary paths (or mindsets) to the devel-
opment of knowledge are identified:
the entrepreneurial mindset and the
managerial mindset. They operate with
different epistemologies and there-
fore have profound implications for
knowledge management. An epistemic
strategy of an entrepreneurial mindset
is more appropriate under conditions
of uncertainty and novelty, while the
managerial mindset is more appropri-
ate where accumulated and objectively
verifiable experience is available. The
entrepreneur or manager will not act
the same way according to his or her
level of justification rigour and beliefs.
Two patterns derive: the plausible pat-
tern (entrepreneurs) and the probable
pattern (managers).

At the organizational level, chap-
ter 3 focuses on how knowledge is used
by organisations in order to give rise to
an identifiable competitive advantage.
Following the knowledge-based-view
perspective, it is argued that organi-
sational differences come from the
way resources are accumulated as time

passes, and that, by exploiting and maintaining such resource differences, firms are able to build up a sustainable competitive advantage. This heterogeneity of resources can result from the way organisations' cognitive activities of codification and abstraction. These two processes on which Boisot's I-Space framework is built, are defined as follows: *codification* is the process of giving form to phenomena or experiences by extracting relevant information from them, and by exploiting them is order to retain regularities, moving from intangible knowledge into manageable processes. Codification involves categorisation. *Abstraction* is the process of reducing the number of categories needed by identifying categories that are redundant or irrelevant for the purpose for which codification is undertaken. Abstraction can thus be seen as the compact representation of phenomena (as an efficient coding). Thus, codification facilitates abstraction by giving an edge to categories, which make them more discernible. Abstraction, in turn, stimulates codification by reducing the number of categories whose boundaries need to be refined. Both, working together, they have the effect of producing more articulated knowledge and therefore more shareable knowledge. The epistemic differences that can arise between firms from the way their respective codification and abstraction strategies operate can be a powerful source of competitive advantage.

Chapter 4 explores the strategic assumptions underlying the current knowledge-based theory of the firm. The I-Space is used as the conceptual framework that relates the articulation of knowledge (through codification and abstraction) to the sharing of knowledge (diffusion). The I-Space framework enables the identification of distinct information environments whose codification, abstraction and diffusion dynamics give rise to different social behaviours (cultures). Thus, according to these information and characteristics, four types of cultures emerge: *markets, bureaucracies, clans and fiefs.*

Chapter 6 finally demonstrates the I-Space's benefit by presenting an agent-based simulation model. This last chapter shows this model applied to concrete empirical problems found in intellectual property rights.

By the end of chapter 6, several issues and questions still remain to be addressed. How is it possible to empirically identify an organisation's critical knowledge assets by measuring its level of codification, abstraction and diffusion? How are they linked to each other? What are the implications of these interaction structures on knowledge creation? The last chapter proposes a rather exhaustive agenda that should attempt to answer these and other questions.

In conclusion, this book takes on the great challenge of articulating a theoretical approach to creation and dissemination of knowledge. Thanks to the relevance of examples (historical examples, biological and physical metaphors as well as specific examples such as the launch of the Walkman by Sony or the problem of intellectual property) and because of the accuracy of definitions, the book remains accessible

to the reader. Furthermore, the repositioning of state-of-the-art knowledge management approaches, according to various disciplines and historical contexts, helps to understand the gap that the authors want to fill. This quality makes the book unexpectedly readable, considering the complexity of the goals. However, the reader is left with a range of thoughts about the applications of the framework. As the authors also confess, the framework is built upon multiple interconnected theories rather than one single theory, making it rather difficult to devise how to apply it to empirical testing. For some readers the content may seem overly dense and difficult to understand in its entirety.

Overall however, the book is worthwhile and recommendable. It succeeds in clarifying most of the unclear definitions linked to knowledge management, as well as explaining their dynamics and interrelationships. It also sheds light on how the development, codification and diffusion of knowledge work at different phases. Knowledge is deeply rooted in history, context, and action, and this book gives a robust framework to analyse it with the underlying idea of building competitive advantage from the robustness of a theorisation.

*Rani J. Dang*
*dang@gredeg.cnrs.fr*
*University of Nice Sophia-Antipolis*

Norman, Donald A. (2002 edition, first published 1988). The Design of Everyday Things. New York, Basic Books.

Everyone's everyday life comprises the use of everyday things. Day by day we open doors, flip switches, use water faucets, operate alarm clocks, coffee machines, and radio tuners, use telephones, and also operate vehicles or other machinery. Normally, we don't ponder over whether all the things we interact with were designed in an intelligent way, in the sense that it is obvious how to use them. Donald A. Norman, however, began contemplating on these everyday things, and – funnily enough – after some months of getting frustrated by the workings of buildings and transportation systems during his sabbatical stay in England, took action and wrote this book.

Norman worked as a cognitive scientist, interested in how the mind works in general and human error in particular, when he was called in to determine why the operators of the Three Mile Island nuclear power plant made such terrible mistakes that lead to the big accident in 1979. After it was concluded that not the operators were to blame, but the faulty design of the control room and its controls, Norman realized the huge influence of the design of everyday things on human errors. After writing this very successful book, he co-founded the Nielsen Norman Group, an executive consulting group that helps companies produce human-centered products and services. He is Professor of Computer Science at Northwestern University and Professor