Foreword

The intertwined evolution of information technology and management practices is at the core of this book. Developments in computing and in Information Technology (IT) lead to the emergence of new artifacts capable of increasing the capacity of management. Anytime this happens, new needs and new opportunities for novel IT artifacts emerge. From the perspective of management and decision-making, the situation is complementary. New, IT artifacts amplify the capacity of managers and decision-makers. This leads to the emergence of new work practices and to demands for more advanced artifacts that will be involved in those human activities.

But there is yet another strand woven into this. Sensors and other event detection devices are invading the environments of our life: work, home, entertainment, health, …, you name it. Information storage capacity and bandwidth are increasing. Tera- and Mega- are nowadays common multiples to express the magnitude of personal needs for information storage and transmission. So, imagine the magnitude of these needs at the level of enterprises…. IT is thus enabling records of human activities to be created at low cost and by no invasive means. The result is that corporations are accumulating vast collections of records of their transactions and states, together with records of environmental factors that are (or might be) relevant to their operation and to their strategic positioning. The capacity to explore all this information produced by IT relies on IT itself.

It isn’t therefore a surprise that the era we live in—information society, as it is often called—is intense in what concerns the design and usage of IT artifacts associated to the cognitive aspects of enterprises, especially those related with managerial and decision-making activities. In fact, the last decades have been fertile in what concerns the development of new IT artifacts that enhance and enable management practices. Executive support systems, OLAP, data mining, knowledge discovery in databases, business intelligence, knowledge management, and Web mining are all examples of such developments. Sometimes they correspond to incremental advancements derived from new perspectives for older topics. In other cases, they correspond to groundbreaking results that led to widely recognized innovations.

Due to the normal multiplicity of perspectives, approaches, and interests, R&D contributions often appear in a scattered way. It might take a while to realize the need to put together, combine, or integrate R&D results that will, eventually, be parts of a coherent whole. And it also might take some time until someone takes the initiative to call the attention of the R&D community to the need for integration.

The call for this book is such a call for attention. It succeeded in attracting members of the research community that felt they could contribute to the advancement of an area whose growth led to a moment of reflection. A moment to consider the combination of elements that are being discerned as part of something wider.
I am sure that despite the advancements the chapters of this book will lead to, they will also lead to new challenges for further combination and integration of knowledge, and for a more mature vision on how computing and IT can support managerial and decision-making activities.

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