Foreword

Nowadays, it becomes very hard to ensure the performance of a company. There exist external and internal reasons. With the opening of markets, the external environment can quickly evolve all the time with, for example, the emergence of new competitions, the scarcity of certain resources, the setting of new regulations. The internal environment can be also submitted to more or less rough variations. It is thus necessary that any company can acquire a good flexibility to adapt itself quickly to any change and find the best performance.

Methodologies and technologies of information and communication constitute an effective way for adaptation and performance. The interest of this book is precisely to propose adequate descriptions of the main approaches and the main tools of the domain.

First, the book includes several chapters which deal with data organization and data management within an information system: architecture of information systems and implementation within databases, approaches for the integration of information systems, composition of Web services, definitions and concepts to ensure the security of an information system. Also, two chapters deal with data analysis approaches: a generic architecture to combine sensors’ networks and data warehouse techniques, a solution to store simulation results in a database in order to facilitate their analysis. It is important to recall that data analysis is now a very useful mean to extract hidden information from data.

A welcome focus is proposed on mobile systems with a presentation of the Android system and a state of the art on the various approaches to ensure the security of this system.

Others important subjects are those related with the modelling and the reengineering of business processes. These subjects are explained in three chapters: general presentation of the concepts and the models, improvement of processes by using techniques of data mining, in-depth focus on the e-sourcing and e-purchasing process with illustrations in the Healthcare sector.

Another chapter reviews the various techniques of the artificial intelligence with pertinent applications to industrial cases. All the functions of a company are concerned and very significant gains of performance can be obtained.

The information and communication techniques induce more or less some risks. So a chapter deals with the evaluation of these risks and operational approaches to minimize them. This is a very hot topic because companies are now the target of frequent cyber attacks.

All the chapters are written in an academic style and are very easy to read. Each includes prerequisites and definitions useful for its presentation. This book is thus accessible to a large public.
This book will be very useful for all the actors of the performance of a company: managers, developers, researchers. Managers will find principles and ideas to improve the functioning of their company. For developers, this book will be the opportunity to consolidate their vision and to select new features for incorporating it in their products. For researchers, the reading will help to establish a preliminary state of the art before starting a research action.

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