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Methodologies and Technologies for Networked Enterprises

ArtDeco: Adaptive Infrastructures
for Decentralised Organisations

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Preface

The needs for flexibility and globalization force enterprises to decentralize their activities and continuously (re)structure their network of relationships regarding both their productive “supply chain” and their design and innovation processes.

The goal of the ArtDeco project (<http://artdeco.elet.polimi.it/>) was to address these issues by studying the problem and proposing solutions from three main diverse perspectives: the organizational perspective aimed at studying how companies work in a network and how their design processes can benefit from the collaboration with other companies and subjects; the informational perspective focused on how to acquire relevant knowledge from unstructured information and processes and on how to organize and manage such knowledge to make it useful for the networking and innovation objectives of enterprises; finally, the infrastructural perspective has focused on understanding how self-adaptive workflows and software systems can help in supporting the dynamic interconnection of enterprises and on how peripheral devices such as wireless sensor networks (WSNs) and radio frequency identification (RFID) devices can be useful in acquiring on-the-field data and in communicating such data to all interested parties belonging to the same supply chain.

ArtDeco was funded by the Italian Ministry of Education and Scientific Research under the FIRB program (funding for basic research) and was developed by the following Italian research centers and universities: Centro Nazionale delle Ricerche, Free University of Bolzano, IBM, Politecnico di Milano (project coordinator), Scuola Superiore S. Anna, Università dell’Aquila, Università di Bari, Università dell’Insubria, Università di Pisa, Università del Sannio. The project started in 2006 and ended in 2010.

The objective of the monograph is to collect in a coherent manner an overview of the main results produced by the project and to provide a comprehensive survey of the main organizational, conceptual, and technological challenges raised by networked enterprises. The intended audience for the book is researchers that are interested in getting a multidisciplinary overview of the main issues and challenges concerning networks of enterprises.

The book is structured into four main parts addressing the organizational (Part I), informational (Part III), and infrastructural (Parts II and IV) perspectives we have mentioned. It also includes a case study that is used through the book as the reference example and is developed in detail in the last chapter.

We wish to thank the Italian ministry for research and university (MIUR) for funding the project and Professor Maurizio Zamboni (Politecnico di Torino) for acting as project reviewer. Special thanks go to Professor Paolo Tiberio (University of Modena) for reviewing the whole book. We also wish to thank all students that contributed to different aspects of this project. Finally, we would like to thank all the industries of the wine and fashion areas that participated in our surveys.

February 2012

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