Chapter VIII

The Organizational Model for a Market of Resources

Introduction

This chapter presents a complete specification of the Market of Resources, to allow a complete understanding of how this environment can support the implementation and management of Agile/Virtual Enterprises.

The model of the Market of Resources includes three views:

1. The functional specification of the service provided, its processes structure and data structure using IDEF0 and IDEF1x modelling techniques;
2. The definition of a regulation regarding the operation and management procedures of the Market of Resources; and
3. A cost and effort model to allow a further analysis of the model performance.
The chapter starts with the selection of an adequate methodology to adopt in the functional specification of the Market, justifying the option by the IDEF1 suit, and also presents the main topics of this technique to prepare the not familiarized reader to better understand the diagrams.

The Global Structure of the Market of Resources section presents the overall structure of the Market of Resources, the entities present and the relationships between them, defines the main concepts (such as resource, resource provider, negotiation, etc.) and details how A/V E design, integration and reconfiguration takes place and is supported by the Market.

The Market of Resources Project section describes the creation of the Market of Resources, its organization, maintenance and optimization. This section also introduces a regulation guiding the Market of Resources project (creation and management), a “design rules system” describing and regulating the processes of subscription and unsubscription of the service by the participating entities, their corresponding duties and responsibilities.

The Operation of the Market of Resources section, details the main operations performed by the Market of Resources, concerning requests for A/V E creation or reconfiguration, negotiation and contractualization. The section also introduces an “operation rules system” regulating A/V E design and integration and A/V E operation, including contractualization procedures, negotiation between resources providers and selection, taxation and operation management.

To complete the specification, this chapter presents the overall data architecture to support the Market of Resources, based on IDEF1x diagrams, and the final section introduces the cost and effort model developed to traduce the operation of the Market of Resources, with the purpose to allow the comparison of performance between the Market of Resources and the traditional Internet-based technologies (introduced in Chapter VII), in the support of activities of A/V E integration.

### A Methodology for the Functional Specification

A model is an abstract representation of reality that excludes details of the world, which are not of interest to the modeler, or the ultimate users of the model (Presley, 1997). Ross and Schoman (1977) lists the four main requirements of any modelling technique. These include:

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