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Integration of Third-Party Applications and Web Clients by Means of an Enterprise Layer

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EXECUTIVE SUMMARY

This case study presents an experience report on an Enterprise Modelling and Application Integration project for a young company, starting in the telecommunications business area. The company positions itself as a broadband application provider for the SME market. Whereas its original information infrastructure consisted of a number of stand-alone business and operational support system (BSS/OSS) applications, the project's aim was to define and implement an Enterprise Layer, serving as an integration layer on top of which these existing BSS/OSSs would function independently and in parallel. This integration approach was to be nonintrusive and was to use the business applications as-is. The scope of the case entails the conception of a unifying Enterprise Model and the formulation of an implementation architecture for the Enterprise Layer, based on the Enterprise JavaBeans framework.

BACKGROUND

This case study deals with a company acting as supplier of fixed telephony and of broadband data communication and Internet services. A particular feature of the company is that all the telecom services it offers are facilitated via "Unbundling of the Local Loop" (ULL).

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ULL is the process where the incumbent operator makes its local network (the copper cables that run from customers' premises to the telephone exchange) available to other operators. These operators are then able to use individual lines to offer services such as high-speed Internet access directly to the customer. The European Union regulation on ULL requires incumbents to offer shared access (or line sharing). Line sharing enables operators and the incumbent to share the same line. Consumers can acquire data services from an operator while retaining the voice services of the incumbent. Some operators may choose to offer data services only, so with line sharing consumers can retain their national PTT service for voice calls while getting higher bandwidth services from another operator without needing to install a second line.

The regulation on ULL can have a significant impact on the competing forces in the telecom industry: it offers a great opportunity for new companies to enter the telecom market and compete with the incumbent operator. Indeed, by means of ULL the sunk cost of installing a countrywide network infrastructure is not an obstacle anymore for new entrance in the telecom market.

A large telecommunication company immediately understood the business opportunities behind this new regulation and decided to exploit the ULL benefits in all European countries. In a first step, it has created a starter company that is the subject of this case study. As a means to differentiate from the services offered by the incumbent operator, the new company focuses on telecom services for the business market, the small- and medium-sized sector in particular. The main headquarters are located in the first European country where ULL is possible. The starter company was set up in September 1999. In March 2000, it succeeded in acquiring two major investors from the US, which are both specialists in new media. The company has evolved rapidly, and in August 2001 it already surpassed 2000 customers and employed about 150 people. Presently, the company offers its services in two countries. Gradually, the company will extend its coverage of the European Union by opening new premises in the countries that enable ULL.

SETTING THE STAGE

Business Units with Stand-Alone Software Packages

The company is organised around four key business units: Sales & Marketing, Service Provisioning, Finance and Customer Services. The business unit Sales & Marketing is responsible for identifying emerging trends in the telecom industry and offering new telecom services in response. They are in charge of P R activities, contact potential customers and complete sales transactions. The business unit Service Provisioning is responsible for the delivery of the sales order and organises the provisioning of all telecommunication services the customer ordered. They have to coordinate the installation of network components at the customer's site and the configuration of these components according to the type of service requested. The business unit Finance takes care of the financial counterpart of sales transactions and keeps track of the payments for the requested services. The business unit Customer Services is responsible for the service after sales. They have access to the entire network infrastructure, and on request they can inform a customer about the progress of a service provisioning activity, about the network status or possible network breakdowns. The main business process is shown in Figure 1.

It is a company policy that the amount of in-house developed software must be limited. The company has therefore acquired a number of off-the-shelf software packages. Apart from

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