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Chapter VIII

Supporting Dynamic Essential Modeling of Organizations

Today's information systems design and development activities demand flexibility from supporting arbitrary modeling approaches. Improvements to the business process as a result of the introduction of new technologies and applications requires the adaptation of modeling approaches to accommodate the changing demands of analysis and design. Therefore, this chapter focuses on supporting the new and changing demands in analysis and design of information systems. An understanding of the business process is important in order to design a proper information architecture for the problem at hand, therefore, the modeling of the business process of an organization is the focus of this chapter, to improve the understanding of the problem situation before designing and developing an information system. The problem of analyzing a hotel reservation and reception activities according to the DEMO modeling approach (Dietz, 1996) is presented in this chapter.

A hotel reservation and reception department, which does not have any computerized facilities, functions as follows:

> The hotel reception receives reservation requests daily by telephone, fax, or letter. The following data about a reservation is registered in the reservation register: name and the address of the client, client number, date of reservation, date of arrival, length of the stay, and the type of room, i.e., single, double, or suite. The reservation requests are handled in the order of their arrival. At the same time the room occupation overview is updated. This overview, consists of a table in which the number of available rooms are tracked, one year in advance. On the basis of the occupation overview decisions are made with respect to the requests for reservations. When a request

is accepted or rejected, the customer receives a written confirmation. On the date of arrival, the guest reports to reception to check-in. Only then is a specific room, identified by a room number, assigned to the guest. Each check-in is recorded in the guest register. This register contains date- marked pages, consisting of rows to represent rooms. The rows are used to record the name of the guest and the price of the room. The type of room, the specific room, and their prices are written down in the 'room-list.' When a guest does not appear in person or does not contact the hotel before 18.00 hours on the planned date of arrival, the reservation is cancelled and the room becomes available. In such a case a fine is imposed and an invoice is sent to the client to collect it, which may be remitted through a bank account or otherwise. On the day of the departure during checking out, the guest receives an invoice covering the entire visit and details of all costs incurred. When the total amount is paid by the guest to the cashier, the receptionist hands over the invoice with a stamp indicating the settlement of all payments. This finally concludes the hotel visit by the guest.

At a time when Business Process Analysis (BPA) is attracting great interest due to business systems engineering needs, a problem that requires an uncommon new modeling approach that is useful for today,s information systems development situations is considered. There is a need to choose a new and uncommon modeling approach to business process modeling, to acquire a solid understanding of the transactions that take place in an organization, including the participants involved in these transaction, the information that is needed and created, and the relationships between them. The modeling of a hotel reservation and reception functions, with its communication activities, using the transaction-oriented organizational modeling approach, DEMO, is an attempt to bring about a correct understanding of an organization to the participating information engineers was a natural and interesting candidate.

DEMO modeling approach combines five models, namely Communication Diagram (CD), Process Diagram (PD), Transaction Diagram (TD), Action Diagram (AD), and Fact Diagram (FD). The process diagram, transaction diagram, action diagram, and fact diagram have similarities with already existing modeling techniques in the information systems design area, but the specific transaction orientation in the communication diagram makes it difficult to use the already available components of other modeling techniques. The communication dia-