Tutorial 3: Use Cases and Activity Diagrams 12 February 2010

An existing manual system is described below. This is to be replaced by a computerised system in to which the sales representative will enter orders after checking and amending them if necessary. Orders requiring special materials are to be handled within the system and orders placed with suppliers via a business-to-business link. Customers are to be notified of projected delivery dates or estimated delays by e-mail if they provide an e-mail address otherwise they are notified by post. Order scheduling is to be automated and the workshop is to be notified of the next order to be manufactured on request.

A company manufactures a wide range of products to order. A sales representative checks each incoming order and if all the details are complete it is added to the production file and the customer is notified of the projected delivery date. If there are problems with the order then the sales representative contacts the customer and the necessary amendments are made before the order is added to the production file. If an order requires special materials that are not in stock then these are ordered from the relevant supplier before the order is added to the production file. Study of the existing system has shown that less than 10% of orders require amendment and only about 5% require special materials.

Orders are added to the production file in the order of receipt so that products are manufactured on a 'first-come first-served' basis as far as possible. When the workshop is ready to produce a new item, the first order is taken from the production file and manufacture proceeds unless materials are not available, in which case the order goes into a special holding file and the customer is notified of the estimated delay to the order. As soon as appropriate materials are received, orders from the holding file are given priority. Study of the existing system indicates that less than 5% of orders are held at this stage.

(a) Draw an activity diagram summarising the process described above.

(b) For each use case (identified in the previous tutorial), draw an activity diagram describing what happens in the use case. Also write a description of the use case in structured pseudo-code.

(c) For each use case, identify a number of scenarios. Describe the primary ("happy day") scenario for each use case in detail, and summarize the other scenarios more briefly.