Chapter 6

INNOVATION AND PRODUCT MANAGEMENT

The product plays a determining role in company strategy especially in the aerospace sector. Pricing, distribution and communication strategies are all closely linked to the choices made as to the product portfolio. Grids and matrixes for analyzing the portfolio are effective tools for making sure that the company is in phase with its market and has a product range to meet objectives. However, before using them we must look at the experience curve and life cycle in the aeronautics and space sector.

1. THE LEARNING CURVE

The product or service corresponds to very different realities depending on its characteristics and technical performance, usage, solutions provided, technology and target markets. In the aeronautics and space sector, the term “product” is very wide, ranging from the complete satellite or aircraft to equipment, a component or a passenger ticket.

In spite of their differences, all of these products have in common the “experience curve” concept based on the observation that total product costs tend to decrease as the volume of production increases. This is due to time savings in manufacturing (or accumulated experience) and the decrease in total costs per unit produced. Total cost includes fixed and variable costs for a given level of production. Fixed costs do not vary with the volume of activity – investments made at launching, structural costs, etc. Variable costs evolve with the volume of production.

The following curve (Figure 6.1) shows the supply of simple components such as rivets. When the experience factor of a much more complex product such as a plane is considered, the accumulated quantities are around a thousand and the curve is much less steep.
As the company gains experience, it improves its know-how thanks to rationalization of work, better management of raw materials, stock management, faster response time to breakdowns on the production line, and the total average cost per unit goes down. This process, called the experience effect, has two origins:

- the accounting effect: absorption of fixed costs linked to material investments, such as production equipment and investments in research and development, design, the prototype, advertising budget, etc. The more marketing is able to prolong the product’s life cycle and the bigger the accumulated quantity produced, the better the absorption of fixed costs.

- the experience effect itself: the more a company manufactures a given product, the more efficient the production process becomes, even if everything has been done to optimize it at the very beginning of the production. The experience effect comes both from within the company through quality circles and participative methods among others, and outside through integrating the experience of suppliers.