

Chapter 18

Marketing–Production Joint Decision-Making

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1. Introduction

1.1. *The interface between marketing and production*

The last decade was characterized by an increased emphasis on the integration of the separate functional areas of the firm. This can be traced to some extent to the successful performance of Japanese businesses that typically have a highly integrated organizational structure. This phenomenon has been reflected in a number of recent textbooks addressing the integration issues between marketing and production management. Marketing textbooks have recognized the importance of harmonious interactions among business functions. Kotler [1991, p. 701] puts it this way: “Companies need to develop a balanced manufacturing/marketing orientation, in which both sides codetermine what is in the best interests of the company”. Such a viewpoint has the potential to alleviate inherent interdepartmental conflicts. In the production literature, Aquilano & Chase [1991, p. 17] mention that marketing specialists “need an understanding of what the factory can do relative to meeting customer due dates, product customization, and new product innovation. In service industries, marketing and production often take place simultaneously, so a natural mutuality of interest should arise between marketing and OM [operations management]”. Similarly, McClain & Thomas [1985, p. 88] discuss marketing considerations such as price, quality and availability in the design of operations.

In this chapter, we will adopt the definition of Kotler [1991, p. 11]: “Marketing (management) is the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives”. In parallel, we will adopt the definition of Aquilano & Chase [1991, p. 6]: “*Operations management (or production management, as it is often called) may be defined as the management of the direct*

resources required to produce the goods and services provided by an organization". Obviously, both sides recognize the importance of the interface from a managerial standpoint.

The interface between marketing and production is also beginning to be recognized as a legitimate research domain. For instance, Karmarkar & Lele [1989] point out that in most manufacturing firms the marketing and production functions are organizationally separate. One explanation they provide is that production is typically concerned with cost minimization, while marketing is concerned with revenue maximization. Typically, production is required to produce the required output at minimum cost, while marketing might be required to maximize revenue net of marketing and sales expenses. In this way, marketing sets prices and advertising policy, the market determines the quantities demanded, and production produces the quantities demanded at minimum unit cost. However, this decomposition results in conflicts due to inconsistent objectives or externalities imposed by one function on the other. As we shall see in the sequel, such decomposition may also yield suboptimal overall performance.

As a specific example, Karmarkar & Lele [1989] discuss the effect of annual promotional cycles on production policy. Price promotions in many companies are driven by the fact that sales quotas are reviewed, or internal reports are generated, on a quarterly basis, leading to an 'end-of-quarter push'. Due to the way in which profits are computed, the cost-of-goods-sold calculation may look more favorable if inventories are high. Although marketing may have other arguments for promotions, the authors suggest that those who set these promotion and price policies may not be aware of the costs imposed by these policies on manufacturing and on inventory levels.

By way of illustration, Karmarkar & Lele present an actual demand pattern for an industrial-equipment manufacturer's product line. The data clearly exhibits a quarterly pattern of demand. The authors convincingly argue that the seasonality is artificially induced by promotional activity, since the end-demand at the distribution level exhibits no intrinsic seasonality, and the peaks in production demand are highly correlated to the timing of promotions and price discounts. The authors present graphically the production and inventory policies determined by a standard linear-programming model. The production level remains essentially flat over time, except during shut-down and vacation periods, and the quarterly inventory accumulation pattern is roughly counter-cyclical to the demand pattern.

For comparison, Karmarkar & Lele present graphically the inventory pattern where stock is held only to cover the shut-down and vacation periods. The reductions in inventories and in holding costs from the earlier case are significant. The authors assert that, if it is recognized that increased inventory levels are not an asset, and if the effect on the inventory-holding costs is assessed correctly in implementing the marketing strategy, then the incentive for the sales push would essentially disappear.