Marketing and operations management: an integrated approach to new ways of delivering value

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Abstract
The respective roles of marketing and operations management in contributing to effective strategy are considered. This article considers both the technological developments and the changes in management perspectives. Technology has presented management with increased flexibility in the strategic positions available. Some argue (Porter, 1996) that technological developments have been viewed as opportunities to increase productivity rather than to shift the organisation’s strategic direction. An increasing application of value as a customer requirement has resulted in a corporate value proposition: a statement of how superior value is to be created and delivered. Operations strategy has typically been described as being supportive (to the overall organisational strategy) or exceptionally as a major element of an organisation’s competitive advantage. A number of authors have identified operations strategies which link manufacturing operations and strategic management. A missing link is an exploration of the marketing/operations interface and how this may lead to an effective value based strategy.

Introduction
While marketing has been developing and refining its approach and contribution to corporate strategy so too has operations management. Marketing has extended its focus by becoming market strategy led (see Day, 1990; Webster, 1994; Best, 1997) while operations functions (materials management, manufacturing and logistics) have pursued an increasing involvement in contributing to corporate strategy.

This article takes the opportunity to consider the implications of these developments for the marketing/operations interface. It discusses recent developments in operations management and considers these from a marketing viewpoint. The article also uses the opportunity provided by Michael Porter’s views on value as a strategy issue. Porter’s contribution is interesting in that he suggests that many organisations demonstrate an inability to distinguish between operational effectiveness and strategy; “... is a problem for many.” Porter (1996) claims: “The quest for productivity, quality and speed has spawned a remarkable number of management tools and techniques ... Although the resulting operational improvements have often been dramatic, many companies have been frustrated by their inability to translate these gains into sustainable profitability. And bit by bit almost imperceptible management tools have taken the place of strategy”.

Operational effectiveness, claims Porter, is insufficient for long term competitive success. However, competitive strategy; “... is about being different ... the essence of strategy is in the activities – choosing to perform activities differently or to perform different activities than rivals”. In essence Porter is suggesting strategic effectiveness is doing the right things; operational effectiveness is doing the right things right. Porter’s model of productivity strategy may lead to an effective value proposition: a statement of how superior value is to be created and delivered. Operations strategy has typically been described as being supportive (to the overall organisational strategy) or exceptionally as a major element of an organisation’s competitive advantage. A number of authors have identified operations strategies which link manufacturing operations and strategic management. A missing link is an exploration of the marketing/operations interface and how this may lead to an effective value based strategy.

Value strategy
A solution to the problem identified by Porter (1996) is for the firm to identify its value strategy. Before a value strategy can be developed some identification or definition issues will be helpful. Two concepts emerge; value itself and value drivers:

Value is determined by the utility combination of price and non-price benefits offered. It is a relative measure i.e. it is determined by comparison with similar market offers by a target customer group. Value and competitive advantage are compatible with each other. A value based competitive advantage can be established by identifying those benefits, or attributes, which offer vendors an opportunity to increase the attractiveness of their market offer to their target customers.

A value driver is an attribute of a product (or service) considered by a purchaser as a primary reason for selecting that product or service which in turn will enhance the purchaser’s life style (a consumer product) or increase the value of the purchaser’s output (an industrial product or service).

For industrial products or services a value driver may be important because it reduces the “total cost” of acquiring and operating a
production process or because it differentiates the output of the process. Consumer purchases do not differ markedly here; we might consider there to be a stronger influence of value drivers influencing emotional motives more than rational motives for many purchase decision situations.

Kotler (1997, and earlier editions) considers value: “Our premise is that buyers will buy from the firm that they perceive to offer the highest customer delivered value”.

Customer delivered value is the difference between total customer value and total customer cost. Total customer value is the bundle of benefits customers expect from a given product or service. Total customer cost is the bundle of costs customers expect to incur in evaluating, obtaining and using the product or service.

Kotler’s argument is followed by a definition of customer/satisfaction which he considers to result from; “comparing a product’s perceived performance (or outcome) in relation to his or her expectations”. While the argument for value is not explicitly continued it is inferred that customer satisfaction is maximised if the difference between benefits and costs is also maximised i.e. the delivered value is maximised.

Best (1997, pp. 105-8) also suggests that value is benefits/price (customer costs) based and links value creation. He explains:

The process starts with the customer (customer needs and use situations) and ends with the customer (the customer’s level of satisfaction). The job of the marketing team is to create a set of delivered customer benefits at a total cost of purchase that leads to a superior customer value.

Figure 2 is based on Best’s customer analysis, value creation, and customer satisfaction model. The notion of value drivers has been added and this addition reinforces the view (Webster, 1994; Shenkman, 1992) that customers formulate criteria upon which their value requirements are based and which also serve as evaluative criteria when choosing among competitive offers.

Value drivers are likely to be specific to customers or customer groups. We can identify generic categories but clearly the specific characteristics within these generic categories require investigation. An expansion of the generic categories and their characteristics is shown as figure three.

Figure 3 identifies value strategy options based on the possible combinations of non price/value content and uses Porter’s original generic strategy options for classification purposes. An interesting issue arises concerning being “stuck in the middle”. Cronshaw et al. (1994) who explored the strategic implications of being “stuck in the middle” concluded that it: “...is best employed as a classification scheme of strategic outcomes – it says that firms which fall in both cost and quality dimensions perform poorly”. Their contribution is important as it suggests that such a value positioning is viable.

Three further considerations remain. What we imply by the term value strategy and its component characteristics of a value proposition.

A value strategy involves identifying, producing and delivering the combination of price and non-price related benefits the customer is seeking.

It follows that a value proposition is “… a statement of how the firm proposes to deliver superior value to customers. The value proposition is important both internally and externally. Internally it focuses everyone’s attention on customer requirements. Externally, it is the means by which the firm can position itself in the minds of customers. The value proposition should be the firm’s single most important organising principle”. Webster (1994).

Returning to Porter’s productivity frontier concept, we can develop the model into a descriptive model of current strategy situations and decisions. Figure 3 identifies strategy options confronting the firm, suggesting a range of value strategies are available. They vary from customised value strategies, in which some monopoly feature(s) operate largely to desensitise price as a value benefit, through to what are labeled as commodity based value strategies where there are clearly no benefits, to either customer or supplier other than cost and price led features which are typically short term. We shall return to this topic.
Developments in operations management

Recent years have seen a number of developments in operations management theory and practice. From the interest of marketing decisions these may be considered in the context of a contribution to strategic planning and implementation, and operations technology. The contribution to overall strategic planning has been described by Sweeney (1991) as:

- to minimise any manufacturing negative potential;
- to provide credible support to the business strategy; and
- to contribute to developing sustainable competitive advantage.

The role of operations management is to contribute to value by structuring its activities such that their decisions maximise the impact of the value driver influence.

Operations strategies

A number of contributions have been made linking manufacturing operations and strategic management, Sweeney (1991) reviewed the most significant of these and identified a number of issues arising in the determination of a manufacturing strategy framework. Of particular interest is work by Hill (1985) who recommended that management should first define the order winning criteria of the target market and these data then help set manufacturing performance goals. Sweeney interprets this: “It is the specification of these market success criteria that defines the desired manufacturing capability of the firm, and therefore these data are used to deduce the needed infrastructure design and the most appropriate production process to be used”. This process identifies the critical success factors or value drivers necessary if an organisation is to be a major supplier in its markets.

Other contributors have identified processes by which a framework might be developed:

... such a framework could aid the selection of the most appropriate strategy consistent with the competitive strategy of the company. It could also help in the creation of a vision of the manufacturing capabilities which will be

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**Figure 2**
Customer analysis, value creation and customer satisfaction

**Figure 3**
A strategy option using Porter’s productivity frontier concept
required to gain a competitive advantage in the targeted markets.

Sweeney’s objective is to identify a generic manufacturing strategy and his task leads to discussions of contributions by Hayes and Wheelwright (1984); Skinner (1969); Stobaugh and Telesio (1983); Roth and Miller (1989); De Meyer (1990); Edmundson and Wheelwright (1989) and his own contribution (1991).

Sweeney identifies four generic manufacturing strategies:

1. The caretaker strategy is employed by management who consider that little competitive advantage may be gained by differentiating the product/service offer. The strategy aims; “...to produce efficiently and to provide a reliable delivery service to the customers”. Such a strategy reflects the intent of least cost producers or, as suggested earlier, consolidation and productivity inferred by the price value content of Porter’s operational effectiveness.

2. A marketeer strategy is “...frequently used by organisations experiencing increased competition and their need is to enhance and extend standards of customer service they offer. Such responses could be to broaden their product lines, seek to obtain broader distribution or to improve the quality and specification of the products offered to the market.” Here we are considering Ansoff’s market penetration, product development and/or market development strategies in existing or related markets.

3. A reorganiser strategy “...is adopted by manufacturing businesses to enhance the quality and the performance of their products and to change their manufacturing operations to reduce customer delivery lead time ... reorganisers place greater emphasis on developing new production processes for new products and an efficient manufacture”. Hayes and Wheelwright (1984) suggested this to be an “internally supportive” role in which manufacturing provides credible support to the business strategy. Investment in computer aided design and manufacturing equipment and plant reorganisation to simplify control are examples of the reorganiser strategy.

4. The innovator strategy is suggested by Sweeney as being “...aggressive and the objective is to outperform the competition in terms of product performance and the quality of service to the customer”. And is “...first to ensure that the firm’s total management team maintains a customer focus in order to ensure the identification of any opportunities for improved competitiveness”. This represents an aspect of product-market activity in new, unrelated markets (i.e. diversification).

Grant et al. (1991) suggest that the change in attitudes necessary for this to occur was taking place in the 1980s;

During the 1980s, however, a fundamental revaluation of manufacturing’s role within companies occurred. Stimulated by observation of Japanese industrial successes and by penetrating diagnoses of US productivity problems, production management has moved from the plant floor to the boardroom, and manufacturing issues such as quality, productivity, flexibility, and throughput time have emerged as central issues of strategic management.

**Doing the right things and doing the right things right: the marketing/operations management interface**

Earlier it was suggested that Porter’s (1996) notion of a productivity frontier should be considered to be a value creating process in which customer value is optimised within a set of constraints imposed by the necessity to deliver long-term shareholder value. Porter offers the productivity frontier as:

...the sum of all existing best practices at any given time ... the maximum value that a company delivering a particular product or service can create at a given cost, using the best available technologies, skills management techniques and purchased input. The productivity frontier can apply to individual activities to groups of linked activities such as order processing and manufacturing and to an entire company’s activities. The productivity frontier is constantly shifting outward as new techniques and management approaches are developed and as new inputs become available.

The productivity frontier has its origin in the production possibility frontier which is “A formal, and very limited, analysis of the product mix decision ...” (Davies, 1991). The production possibility frontier identifies the combinations of two different goods which a firm is capable of producing, given that there is a fixed level of resources available to it. Figure 4 shows a concave curve indicating that resources are not perfect substitutes for each other in the production of the two goods. As the level of resources in use is fixed, total cost for every combination of the two goods is constant and profits are maximised when revenue is maximised, this occurs at point P max. If we substitute product A with an offer of a product which is differentiated such that it offers exclusive characteristics and Product B becomes a basic, commodity type
product, with low price as its offer we have the model of operational effectiveness offered by Porter. We must assume that “resources” represent a fixed level of capital which may be deployed at the discretion of management.

Given the earlier discussion, Porter’s production frontier may be modified to reflect the options available to management, for deploying capital resources. Porter’s proposition is that the production options for the firm range from a facility structure which can manufacture a highly differentiated product to one designed to produce at low cost, and therefore has price as its primary differentiation characteristic. In between, as we have identified, there is a range of flexible options now available. The issue for management is which facility structure to adopt or, in other words, which operations strategy and which practices and technologies should be adopted. Figure 5 illustrates this proposal. As we have identified, the practices and technologies currently available can meet a range of product specifications with project and job processes being applied to customised products, batch methods for selective differentiation and line and continuous processes better suited for the production of price led, standardised products. The use of information/communications systems such as EDI and the appropriate application of JIT, MRP, enabled the firm to offer flexibility to meet prescribed requirements and, as indicated in Figure 5, can increase productivity at the same time.

It is interesting to explore the implications of the productivity frontier/production possibility frontier against the background of the earlier review of relevant development in operations management.

Process choice has been considered within the context of the product life cycle stages by Hayes and Wheelwright (1979) (see Figure 6). The authors offer the product-process matrix which identifies a likely relationship between production process and the product life cycle stage. The vertical axis shows progressively volume increasing production process options while the top horizontal axis represents four product life cycle stages. The lower horizontal axis suggests competitive advantage characteristics associated with each PLC stage.

Hayes and Wheelwright provide an example of a marketing/operations management interface decision option. They give a dated, but relevant example, of two companies that chose very different approaches to their movement along the two dimensions. The authors recall the alternative strategies of television manufacturers Zenith and RCA. Zenith had traditionally maintained a high level of flexibility, however, the introduction and rapid growth of colour TV prompted an almost vertical movement down the matrix reflecting the decision to position more closely to competitor RCA (see Figure 6).

Factory focus facilitates a marketing response for differentiation (albeit for a narrow range of products). It does offer a firm the ability to provide a customer focus with managed differentiation; a product offer which, while making use of standard components is sufficiently different to offer some exclusivity. A number of medium priced automobile ranges exhibit this approach as do consumer durable products.

Group technology offers marketing an opportunity to lower differentiation costs yet further by “grouping” the manufacture of similar components to realise labour productivity, inventory management benefits and set up economies. Products using common components, such as electrically powered hand tools, have much to gain. Total costs may be contained by offsetting differentiation and/or product variety costs by lowering costs of component manufacture through group technology.

Computer aided design offers marketing benefits in product-markets where speed to market, ease of installation and low cost maintenance are important features. CAD is a valuable technique in developing additional value to customers by utilising the facility to develop and design a product based upon its anticipated in use activities.

Materials requirements planning and materials resources planning can enhance cost profiles simply by lowering the overall costs.
of inventory at all stages of manufacture as well as improving efficiency. Distribution requirements planning will extend this materials productivity and offer the opportunity to extend and improve logistics customer service. However, marketing has a major responsibility to forecast material flows (product varieties, amounts and timing) accurately. MRP, MRPII and DRP can only work effectively if this liaison exists.

Just-in-time offers a number of advantages to marketing. It does lower inventory costs throughout the supply chain (a benefit to be increasingly appreciated the closer we get to final consumption). However, JIT has other benefits for the marketing offer. It enables stricter quality control to be monitored thereby increasing customer satisfaction through improved reliability. But probably its impact on working capital and cash flow throughout the supply chain is its major benefit.

Effective supply chain communications, facilitated by EDI presents major marketing benefits. These include; shorter lead times for order processing and delivery, the transmission of sales data for replenishment and manufacturing activities and forecasts, the processing of invoices and payment (a cash-flow benefit) is another influence on the product on frontier. As with MRP, MRPII, DRP and just-in-time, EDI can also be a major influence on moving the production frontier further outwards and thus increasing the value delivered to the customer.

We have identified some of what Porter (1996) describes as ‘... a number of management tools and techniques’. Porter (1996) suggested that for many organisations these have become the end rather than the means by which strategy has been evolved. This view was preceded by that of Hayes and Pisano (1994) who suggest:

The crux of the issue is that most companies focus on the form of their organisational assets – for example, the mechanics of JIT and TQM rather than on their substance, the skills and capabilities that enable a factory to excel and make it possible for various improvement programs to achieve their desired results. The consequence of this outlook is that managers have tended to view such programs as solutions to specific problems rather than as stepping-stones in an intended direction.

The authors conclude by commenting:
Manufacturing strategy can no longer confine itself to guiding short-term choices between conflicting priorities like cost, quality and flexibility. Nor can managers limit themselves to choosing which fadish improvement technique to adopt or which company to emulate. Long-term success requires that managers have tended to view such programs as solutions to specific problems rather than as stepping-stones in an intended direction.

This may be accomplished by first accepting the idea that the primary way manufacturing adds value to an enterprise is by enabling it to do certain things better than its competitors can and secondly, it must develop a plan for building the capabilities it wants to acquire. A starting point is:

... a company should think of itself as a collection of evolving capabilities, not just as a collection of products and businesses, which provide the flexibility needed to embark in new directions. Corporate strategy must provide a framework for guiding the selection, development, and exploitation of these capabilities. Since many of the capabilities with the greatest competitive value reside in a company’s manufacturing organisation, corporate strategy must become much more explicit about, and reliant on manufacturing considerations than in the past (Hayes and Pisano, 1994).

Figure 7 brings together the marketing/operations interface. It identifies both marketing options and operations strategy
response. The nature of the strategic marketing initiatives will have far reaching implications for operations decisions. As suggested earlier, operations strategy should reflect the strategic direction of the business within the context of selected and potential product-market strategies. Investment in operations facilities should reflect current and future intentions.

Caretaker strategies should therefore, be focused on consolidating the current position of the business, reinforcing its positioning and investing to enhance the cost-effectiveness of the existing business.

**Figure 6**
The product-process matrix

**Figure 7**
The marketing/operations interface requires focussed managerial practice and technology applications
The innovator strategy is the operations management response to a marketing initiative to expand into new product-markets requiring high standards of design and manufacturing and logistics performance...

Implications for the marketing/operations interface: some conclusions

Following his review of a number of the contributions made attempting to link manufacturing operations and strategy (see earlier discussion), Sweeney (1991) concluded that there was no explanation of how to manage the transition from one strategic role to another: nor how to manage the development of the manufacturing capabilities of the firm to satisfy the future competitive strategy of the business. Still less there appeared no approach to create a competitive advantage through manufacturing.

He comments: To be able to do this not only requires the use of generic competitive strategies, which help define the future competitive strategy of the firm, it also requires a taxonomy of generic strategies (Sweeney, 1991).

He offered the four generic manufacturing strategies (also discussed earlier). From this position he argued that manufacturing strategy be pivotal in developing competitive advantage. The argument followed that resulting from an MIT study (Derouzos et al., 1989) which concluded: Management should develop a strategy to exploit the full potential of its manufacturing resources. Such a role would include the use of the manufacturing function to create competitive advantage as well as support the marketing strategy of the business.

As we have seen Porter’s (1996) view, some several years later, suggests that this is not the general practice. He suggests the reverse, that the focus has been on techniques such that:... bit by bit almost imperceptibly management tools have taken the place of strategy.
We have considered the marketing and operations issues as entities. For an effective contribution from operations management to marketing (and from marketing to operations management), such that an effective value strategy may be derived, development should be considered jointly rather than separately at the strategy stage. The resultant strategy will then be achievable and it will be within the capabilities and capacities of both marketing and operations management.

The model proposed by Figure 9 offers a means by which the marketing/operations management interface dialogue may be explored. It assumes that an initial, provisional, decision concerning marketing direction is made resulting in one of the value based options. It then considers both the capacity and capability role of operations management to establish whether this role is feasible and whether it is likely to be reactive or proactive. A reactive role is likely to result in operations management being totally supportive. A proactive strategy would explore, with marketing, the impact on the market of extending its influence and enhancing the value eventually delivered. Using this approach we would expect the Innovators and the Reorganisers to move the organisation into positions of sustainable competitive advantage rather than one of temporary influence.

**Future research**

Three areas for research emerge. The first should consider how well marketing and operations are integrated. Overall market performance in terms of customer satisfaction and capacity and capability utilisation may be used as indicators of how well both contribute to deliver value. Levels of unused capacity and/or capability, or indications of customer dissatisfaction, would suggest closer coordination of the interface to be necessary.

A study of organisational decision making is another area which would identify the extent of the dialogue. Attitudes and perceptions of both marketing and operations management towards each other, and of their roles in the strategy process, would identify behavioural issues and result in case study evidence of how strategic performance may be enhanced by closer integration.

A third study, one across industries, would be helpful to establish the extent (and indeed the need) of, and for, an effectively managed marketing/operations management interface. The nature of the relationship, market

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**Figure 8**

Differentiation and organisation implications

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**Marketing**
- Standard products
- High volume/price sensitive customers
- Product design for easy manufacture
- Line/continuous flow process

**Operations**
- Limited R + D
- Common components
- Stringent cost controls
- Structured organisation
- "Quantitative" incentives

**Marketing**
- Branded products
- "Customised" standard products
- Controllable/service and service
- "Selected" customer base

**Operations**
- Focused R and D
- Flexible and responsive operations
- Strong marketing/operations internal relationships

**Marketing**
- Strong "brand" identification
- Customer service and support
- Low volume/price insensitive customers
- Relationship based transactions
- "Customised" products

**Operations**
- Creative R and D with strong capability
- Interfunctional organisation
- "Qualitative" incentives
- "Rapid response" operations
performance and customer satisfaction responses would identify a range of practices in this area.

**Note**
1. The company moved along an horizontal path, above the diagonal indicated in Figure 6.

**References**


Application questions

1. How does your organization add value?

2. Why would Michael Porter be revisiting his original ideas about competitive positioning and strategy? Has the theory been overtaken by a better one, or has the nature of business and markets changed to make the theory less relevant?