



## **THE INTERFACE ISSUES**

Manufacturing is a primary function in any organisation, which makes things. However, it can only truly contribute to the provision of a sustainable competitive advantage if it satisfies its customers. What manufacturing has to do to satisfy the customer and develop an external viewpoint to competitiveness is determined by effective marketing. The links between manufacturing and marketing are therefore of paramount importance for sustained competitive success in an increasingly turbulent and changeable international marketplace.

These two functions, manufacturing and marketing, should assist and reinforce one another by having a shared understanding of the firm's competitive strategy. They should be prepared to support this strategy through communication, co-operation and by making compromised decisions.

However, this supportive link does on the majority of occasions does not always exist. In some firms the gap between the two is nothing but a wasteland of two functions happily 'chugging' along in different directions and without the faintest idea of what the other function is doing. They only ever meet for exchange of specification from customer to working function and when there is a score to be settled. Conflicts are usually aimed at passing blame from one function to the other when the customer becomes unsatisfied with something.

The overall result produces an even larger gap between the functions, both not trusting the other, both not confident with the achievements and capabilities of the other. This can lead to disaster in firms, despite the fact that both functions are probably the best running systems going. Marketing are usually seen as proactive innovators and manufacturing are seen as reactive 'plodders'. Cultural differences and incongruent goals only add to conflict between the two.

Bridging this interface is what this article is all about.



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### **The Marketing Function**

Marketing has to provide the external perspective to the business. Perhaps one of the best opinions of what marketing should do is given by Peter Drucker (1979), who was a leading writer on management issues: -

“True marketing starts with the customer and considers their demographics, their values and their needs. It does not ask, “What do we want to sell?” it asks, “What does the customer want to buy?” It does not say, “this is what our product or services do”; it says, “These are the benefits the customer is looking for””.

This can be re-stated:

“Marketing involves matching the needs and wants of the customer with the internal ‘benefit producing’ resources of the organisation”.

Consider this statement and the meaning of the term ‘matching’. The matching process means the marketing function, as well as identifying and clarifying customer needs must also be aware of manufacturing’s capabilities and competencies. This in turn means that effective links must be established between manufacturing and marketing, with appropriate information being available to facilitate decision making between both functions.

The matching process is made easier if everybody in the firm has a customer orientation. A customer orientation is beginning to pervade many organisations, often through Total Quality Management (TQM) initiatives, which emphasise ‘satisfying your own customers’ by identifying their needs and providing them with defect free products, information and service. Customer orientation extends to the use of the ‘internal customer’ as the next process or operation, when access to an external customer is not possible.

Marketing can help develop the internal customer concept by providing meaningful information about the needs of the external customer, which can then be translated, to internal control measures. Making sure everyone is speaking and understanding the same information from marketing, through to contract, to manufacturing to delivery. For example, is the customer wanting high product availability - quick delivery - or does he want high delivery reliability, i.e. meeting an agreed timetable. These demands may sound similar but can impose a huge difference on the manufacturing system and its structural architecture.



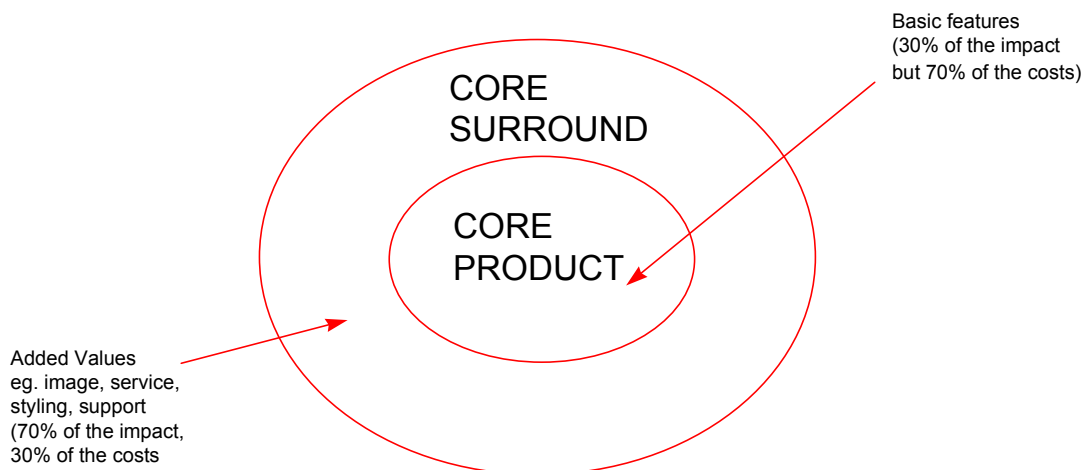
Failure to understand and respond to the customer can have major consequences. In a follow-up to the Peters and Waterman book “in search of excellence”, 14 out of the 43 original ‘excellent’ companies had stumbled; 8 out of the 14 were found to have stumbled because they did not “stay close to the customer”; 12 out of the 14 were found to have difficulty adapting to fundamental changes in their markets, e.g. DEC and Hewlett Packard, both run by Engineers for Engineering companies, had difficulty selling to non-technical companies.

It is often claimed

“You don’t sell products, you sell the benefits of your products, and the whole cluster of things associated with creating delivery and servicing your product in the eyes of the customer”.

Theodore Levitt in 1960 called this the product core and the product surround and much of the value to the customer comes from the product surround

## THE IMPORTANCE OF ADDED VALUES



The concept of added value is an important link between marketing and manufacturing. Adding value for the customer involves manufacturing and marketing working with other functions such as R & D and Logistics in the provision of a distinctive product (core and surround), which competes either by low cost or differentiated in some way from the competition. Increasingly, emphasis is being placed on quality and reliability both of the product and service and on delivery performance, as a means of differentiating the product.



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Manufacturing costs are never unimportant - after all, the added-value sales price, less the cost of providing the product (manufacturing costs plus sales and administration costs) gives the profit for the organisation.

**Value Added** - The increase in the value of goods as a result of the production process.

= **Selling Price-Cost of Input Goods**

### **The Manufacturing Function**

Manufacturing is concerned with the transformation (change of form utility - Ray Wild 1989)

Of inputs by some process, into outputs, at a profit.

The goal of the manufacturing function must be to provide the firm with a better manufacturing competitive advantage, which means 'making it', better than the competition. After all, if you can buy it, so can your competition.

Nigel Slack quoted that: -

“A healthy manufacturing function gives the company its strength to withstand competitive attack, it gives the company endurance to maintain steady improvement in competitive performance, and perhaps most important, it provides operational suppleness which can respond to increasingly volatile markets and competitions”.

The question, “How to achieve a manufacturing advantage?” It involves working together with marketing to identify competitive performance criteria, by setting out and clarifying manufacturing's objectives in terms of: -



- ❑ **Cost**
- ❑ **Quality**
- ❑ **Delivery Availability**
- ❑ **Delivery Reliability**
- ❑ **Flexibility**

These must reinforce the firm's competitive strategy of either low cost, or differentiation (in terms of product and service features). Objectives are achieved by attention to tasks; this involves discussions and decisions surrounding the choice of Technology, capacity, systems and controls, human resources and appropriate organisation and interface management.

The fundamental premise is that manufacturing is in the unique position of being able to provide a manufactured competitive advantage to the firm but the attention must be paid to the following characteristics:

1. Manufacturing must be externally driven by its customer's needs and wants, not simply by internal desires - it must provide clear value to the customer. Close links with marketing will clearly help identify customer needs.
2. A competitive advantage provided by manufacturing can give significant leverage over competition due to, for example, proprietary process knowledge, which is more often based on distinct methodology and not just technology. This can also be durable and lasting, as it can be difficult for competitors to copy and replicate quickly.
3. Match resources to the opportunities of the business environment - don't focus on finding markets for your products.
4. Establish a culture of continuous improvement. This can provide a theme for developing a highly motivated workforce, which is the root of real sustainable competitive advantage.

What are the imperatives needed to provide a sustainable manufacturing competitive advantage? This is the next question.



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### **Focus on Quality**

It is important to adopt a broad view of quality as a theme for functional integration. This is sometimes sought by Total Quality Commitment schemes (TQC). Product quality, defined, as fitness for purpose and conformance to specification is rapidly becoming a qualifying criterion for entry into many markets. 'Time-to-Market', customer service and dependable delivery, aided by accurate inter-functional information transfer is more likely to win and sustain orders by differentiating you from the competition these days. 'Quality is free' (Crosby) is a heartening message but it understates the colossal, continuous effort needed by all functions and activities to achieve the essential focus on quality.

### **Develop Methodology Before Technology**

A key objective of manufacturing is to reduce throughput times to be more responsive to turbulent market requirements. Developing flow process manufacturing techniques and applying them to batch manufacturing environments often achieve this. Cell manufacture and group technology, together with attention to set-up time reductions, are becoming widely adopted in many jobbing and batch manufacturing environments, coupled with Just-in-time philosophies for system control and people empowerment, which encourages team approaches to shop floor operation.

When computerised systems are necessary, and there are useful tools to integrate different functions, it is essential to simplify bills of materials and process routing before computerising the previous complexity. Corrupt databases and over complex routings have been the causes of many MRP system failures over the last decade.

Manufacturing engineers should now talk about appropriate technology, rather than moving to complex flexible manufacturing systems, which are often inflexible outside well defined boundaries. Benefits of using appropriate technology can be: -

- ❑ Reduced manufacturing throughput times
- ❑ Greater product mix and volume flexibility due to lower work in progress
- ❑ Improved quality due to machine repeatability and in-process measurements and controls.



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The opportunity to offset the costs of automation over a greater product range volume, and time period is another advantage of incremental technology developments.

Automated technologies put extra demands on education and training. Success, more than ever, depends on good people with the necessary technical depth and breadth of knowledge, coupled with the correct attitude to adapt to broad job requirements, which include planning and operational responsibilities, as well as technical competencies.

**Develop a Positive Attitude to Change by Accepting the Need for Continual Learning and Showing Flexible attitudes**

The centrality of developing a sustainable competitive advantage is recognition that: -

“A superior performance is ultimately based on the people in an organisation. The right management principles, systems, controls, and procedures play a role but capabilities that create sustainable competitive advantage comes from people. This is tied to their skills, loyalty, commitment, motivation, ability to solve problems and their capacity to learn and adapt” (Hayes, Wheelwright & Clark 1988).

People must be nurtured and developed by treating them as people. Always try and put yourself in the other man’s shoe is a very good saying to describe how to treat people. Communications and involvement are essential. Identify needs and respond by coaching and training. Eliminate artificial inequalities to reduce courses of grievance and develop tasks into meaningful whole jobs. Put simply “create clarity, simplify methods, systems, and controls and facilitate learning.

To summarise, both the marketing and the manufacturing functions have vital roles to play in the success of the firm. Marketing identifies customer needs and market opportunities and manufacturing has to satisfy those needs efficiently and effectively with distinctiveness that out performs competition and potential ‘bought-in’ solutions.

**The Manufacturing/Marketing Interface - Issues and Activities**

1. **Strategy** - Marketing holds an external perspective, their objectives need to be based on products and markets and their strategy developed by consideration of the so called 4 ‘P’s; Product, Price, Promotion and Place (or channels to the customer).



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## PRODUCT/MARKET STRATEGY

	Ineffective	effective
Efficient	Die slowly	Thrive
Tactical Operational management	Die quickly	Survive
Inefficient		

Manufacturing on the other hand tends to be inward looking. It works from the marketing function's strategy statement and translates this into meaningful manufacturing objectives, i.e. cost, quality, delivery availability, delivery reliability, and flexibility needs. Manufacturing management then has the task of translating these objectives into reality, by the sound management of people, systems, technology, capacity and interfaces, whilst working within their operating system constraints.

It is hardly surprising that mismatch and confusion occurs between marketing and manufacturing.

The matrix in figure above illustrates the effects of mismatch between marketing objectives and manufacturing tasks. The firm thrives with effective marketing and efficient operations management. It survives with effective marketing but inefficient operations management- but must work towards efficient operations to fight competitive threats. Firms with ineffective marketing die, either slowly or quickly, depending upon the level of efficiency of their operations management.



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While reading Terry Hill, one finds that the divide between the two is because of the nature of the two functions; marketing is proactive, manufacturing is reactive. This leaves manufacturing isolated from business language with a can't say no syndrome embedded. Hill suggests that the way forward is to develop:

“An orientation based on products, markets and the production interface, so that the degree of fit between the proposed marketing strategy and manufacturing’s ability to support it is known at the business level and objectively resolved within ‘corporate process’. For this to take place, relevant internal information, which explains the company’s manufacturing capabilities, needs to be available within the business, as well as the traditional marketing information, which is primarily concerned with the customer and the market opportunities, associated with the company’s products. As with other functions, manufacturing strategy is not owned by manufacturing. It requires corporate ownership, senior executives need to understand the strategic inputs to the corporate debate, in order to effect resolution between conflicting interests or non-matching functional perspectives”

Hill presented a framework for reflecting manufacturing policy issues on corporate decisions, which involve an iterative process, where objectives are presented and discussed between functions and constraints, can be taken into account before corrective action becomes a financial and time burden to the firm. This process should help improve the degree of fit between the proposed marketing strategy and manufacturing’s ability to support it.

### **Long Term Capacity Planning/Forecasting**

The match of manufacturing capability to market demand is a key area of marketing/manufacturing interface activity. It can take many years to bring a new plant on-stream, years to design and develop new processes/equipment and months to recruit and train new people. It is therefore essential to try to forecast demand as accurately as possible. However, forecasting is not an exact science. The key words that Kotler wrote describe forecasting very well:



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“Forecasting is like driving a car blindfolded with someone shouting directions by looking through the rear-view mirror”

Capacity/demand considerations are also complicated by product mix as well as volume, so it is not enough to talk in aggregate terms, as is often the way in marketing plans.

LTCP (Long Term Capacity Planning) can thus become an area of conflict. If capacity is low marketers are upset because of loss of sales. If capacity is too high relative to demand they are upset because manufacturing costs become too great.

### **Scheduling**

These problems tend to be a short-term image of LTCP. They are more tactical than strategic and conflict tends to be between production schedules and sales people. The scheduler usually wants to maintain a steady order book with optimal efficiency whilst the sales people want to maximise revenue and look after their best customers. The issues are complicated by promises made during sales negotiations, which often conflict with other sales promises. Manufacturing often have to manage trade off's which have repercussions with the supplier links further up the supply chain. Compromises have to be made and no one is happy all of the time. Benetton, a major Italian manufacturer of knitwear has an interesting and novel approach to forecasting and scheduling. Benetton, a major Italian producer of knit goods, has developed an integrated manufacturing, distribution and marketing strategy, which illustrates how the functional strategies can be co-ordinated. Its order system is JIT, as production runs are not started until orders have been received. A key aspect of its system is the dyeing of knit goods after production rather than dyeing yarn to knitting. This allows Benetton outlets to delay commitment to particular colours, until later in the production cycle. Since each selling season typically begins with about ten alternative colours, with only about three usually resulting in high demand, the delay in colour choice affords Benetton an opportunity to respond directly to market demand. The retail system itself provides valuable information to Benetton for production planning via daily orders. These feed production with current demand, on which replenishment schedules for designs and colours may be based. The timeliness of this order data is crucial since popular colours will often sell out in the first ten days of a new season.



The rapid response system gives Benetton retailers a competitive edge over their less responsive competitors. The order information is digested and relayed back to those customers, whose orders appear to be out of line with others in their area. Further, Benetton uses CAD for design and cutting in order to respond to dynamic demand as rapidly as possible. Finally, the company's marketing strategy promotes simple colour fashion with heavy advertising support, which in turn maximises the benefits from the delayed dyeing production process. In summary the Benetton production and marketing strategies have been co-ordinated to create an industrial rather than an artisan approach to fashion.

### **Inventory**

The role of inventory in the supply chain also becomes an issue of controversy. The right finished goods stock can give sales people high product availability but who carries the cost? Developing close supplier links coupled with a fast, responsive manufacturing system can provide a suitable alternative to finished goods stock. Some of the modern approaches to flexible manufacturing, (e.g. by cell-manufacture) and the use of appropriate computer-integrated manufacturing can reduce manufacturing lead-time to match customer delivery requirements. If raw materials or bought-in parts cause supply time-scales to exceed customer requirements, the use of strategic stockholding policies for critical items can be a cost effective solution. However, these decisions can only be made based on sound marketing information, which is communicated effectively to manufacturing.

### **Quality**

Quality was always seen to be a trade-off with cost, if you wanted high quality, the cost of manufacture went up. A standard narrow product range was viewed by manufacturing as an essential prerequisite for high quality. High variety only caused confusion and made the likelihood of mistakes. Marketing naturally wanted high quality, high variety, and low manufacturing costs and so this area provided a basis for conflict.



Today however, quality is not viewed to be a trade-off with cost by enlightened manufacturers - “Quality is free”, when the prices of non-conformance are measured accurately. Total Quality Management initiatives now emphasise quality’s multi-dimensional aspects. Quality of information between marketing and manufacturing is seen as a key activity, which still requires attention, for example: which products provide the best margin? ...Requires knowledge of true manufacturing costs and marketing price sensitivity; how do the competitive performance criteria vary from one product/market situation to another and what are the order winning criteria? Etc. .... All require good interface communications and information transfer between manufacturing and marketing.

### **Product Variety**

Marketing requires variety in the product line to segment the market and gain benefits from differential pricing. Manufacturers tend to gravitate to the view attributed to Henry Ford:

“You can have any colour you want, as long as it’s black”

The provision of high variety does have an impact on the costs - even Flexible Manufacturing Systems - FMS cannot compete on costs with a limited product range high volume manufacturer. Marketing needs to be aware of the cost implications of high variety and justify the strategy based on creating ‘value’ to the customer - which he is prepared to pay for through higher prices.

David Garvin in 1983, who was a leading American writer on Quality, studied the air Conditioning industry and found that

“Variety is often the enemy of quality. Product proliferation and constant design changes may keep the marketing department happy, but failure rates tend to rise as well.



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By contrast, a limited product range ensures that workers are more familiar with each model and less likely to make mistakes”

This again shows another area of conflict between marketing and manufacturing. Hewlett Packard coped with variety on their HP150 touch-screen office computer in the following way:

Hewlett Packard’s marketing and manufacturing functions had important interfaces on this programme. Early in the product development life cycle, marketing decided to flagship this product; with corresponding heavy advertising and promotion, anticipated production volumes were much larger than that of most HP products.

Quality considerations at these volume levels were critical, leading the HP manufacturing team to select Just-in-time (JIT) concepts for manufacturing. JIT kept minimum parts and work-in-progress buffers in the system and thus quality problems, once surfaced, would not involve large amounts of inventory requiring rework.

The JIT philosophy required level scheduling. Marketing wished to meet demands from stock rather than from orders. The solution was to put a separate HP division in charge of distribution, maintaining a planned supply of finished goods to deal with market needs.

Product structure and configuration was another important interface:

Marketing desired variety, to meet the needs of various markets.

Manufacturing desired a simple product structure.



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The solution: design a general-purpose ‘no-options’ central processor unit, which could be tailored via software to various special market, needs. The single no-options configuration also simplified production schedule levelling.

Finally, the choice of manufacturing locations involved marketing and manufacturing trade-offs. While a single production location in Sunnyvale, California would probably have been the most efficient production arrangement, a second manufacturing site in Grenoble, France gave HP a presence in France which was very useful to the Corporation in marketing a variety of HP products in Europe.

### **New Product Introduction**

Product life cycles appear to be shortening, especially in consumer packaged goods and high technology products. The shorter PLC’s become, the quicker new initiatives and competitive responses have to be introduced and more and more companies will have to introduce new products quickly. Time to Market policies are quickly becoming order winning criteria and the push seems to be toward time-based models to improve competitiveness.

An extract from the Independent caught my eye a few years ago so I noted it down as it clearly illustrates this issue clearly. Peter Goldsborough wrote the extract in 1989:

“A statement from a senior manager in a global merchant bank:

‘You have to move fast to win business these days’, sums up the nature of modern business so precisely that it almost takes on the nature of truism”.

This is not to say the statement is devalued. Research undertaken by Boston Consulting Group has shown that many of the world’s most successful modern companies are taking advantage of a new source of competitive advantage - recognition by their management of the value of time.



Companies that apply this recognition to every element of their business, between initial order and final delivery, are known as *time-based competitors*. It is BCG's experience that they enjoy a double benefit: through satisfying customer demand for rapid delivery, they can charge premium prices and benefit from lower costs, lower inventory and higher quality.

It is this double benefit, and particularly the management techniques that allow it, which lead many non-time based companies to regard the issue of *time-based competition* (TBC) with some scepticism.

Research indicates that time-based competitors enjoy approximately twice their industry's average profitability and three times its growth rate.

So what characteristics have a time based competitor actually got? Simply, it is the ability to differentiate key, or main sequence, tasks from support functions, and then reduce the time it takes to perform them throughout the entire organisation.

While this is an easy concept to express, it is difficult to execute, involving as it does a restructuring of the system; for one major requirement of contracting elapsed time is the devolution of decision-making authority to employees throughout the organisation. Overall responsibility for becoming a time-based competitor, therefore, must start out with the highest levels of management; but the effort expended usually results in the unleashing of hitherto untapped sources of energy and enthusiasm.

Reducing total of TBC was devised in Japan as an element of flexible manufacturing techniques. However, it is the application of these principles to the entire company, which results in the greater benefits, a phenomenon now recognised globally and throughout a wide range of industries.



One company, which has benefited famously from this recognition, is Toyota. Having reduced its manufacturing time to an optimum level, whereby a car could be built in a matter of days, the company realised that this efficiency was being largely dissipated by its unwieldy sales and distribution process. This could hold up delivery for four to six weeks.

A decision was taken to restructure the company fundamentally by unifying the manufacturing and sales operations. Traditionally, these had been managed as two quite separate functions.

An objective of reducing the business's overall time-cycle was set, and despite a new commitment to becoming marketing driven, the factory personnel were appointed to lead the new structure due to their previous experience of such management.

The original objective was to reduce total cycle-time by half, to between two and three weeks. By 1987 it was down to eight days. The results are easy to imagine; more satisfied customers, combined with lower costs.

What the Toyota example shows is that to achieve a time-based structure, a company must inspect the whole 'value-chain' of activities, including suppliers and distributors.

In a large and complex organisation, the way forward is to re-examine existing main-sequence procedures throughout the value-chain, and then redesign them to reduce overall cycle time. Crucially, organisational and motivation systems need to be modified in parallel to focus on the new goals; it is only when this takes place that lasting change occurs.

During this process, it is important to ensure that those activities identified as the main sequence are not slowed down or interrupted by support activities.



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One way of achieving this is to make main sequence activities self-regulatory and to reduce supervisory functions. For example, the principles of line-worker quality control can equally be applied to sales, distribution and development areas. (QFD- NOT JUST IN DESIGN).

A major characteristic of time-based competitors is the significantly smaller staffs they employ in support functions; as a corollary, the greater is the customer driven proportion of the organisation.

The principles of time-based competition are widely applicable, and are becoming recognised as a major new source of competitive advantage in many industries - from financial services, to retailing, car and truck manufacturing - and in many countries.

In particular, European producers under threat from low-cost economies have the opportunity to combine its advantages with their close proximity to customers, and so use it as a real force in establishing a competitive edge.

As the single market of 1998 approaches, such considerations will take on an increasingly valuable premium.

Interface management, between marketing/manufacturing/R&D/engineering, is critical and the use of multi-function project teams, involving cross functional activities and shared problem ownership is becoming commonplace to manage critical projects from inception to implementation.

In an article written in 1977 by Shapiro the question is asked, “can marketing and manufacturing co-exist?”



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“New product introductions although they are prime competitive weapons...can greatly upset manufacturing. They require new processes, employee training, new equipment and trial-and error operation until they are integrated into existing systems...

Furthermore, what is only a minor modification to a marketer may be a major operational change to a manufacturing person. Ideally, innovative NPD should offer great customer benefits with little upset to the plant. All too often, the manufacturing personnel perceive little customer benefit and great plant upset...which makes their job more difficult than it already is...NPD is often the ‘straw that breaks the camels back’”

### **Customer Service**

Customer service/field service is yet another interface issue between marketing and manufacturing. It is an extension of manufacturing responsibility during installation, commissioning, and customer training and for warranty repairs. Customer service is a value adding aspect of marketing’s promotion efforts, convincing the customer of the safety and longevity features of the *product surround* or *total package*. Customer service is therefore an important link between marketing and manufacturing, and errors in either function can have major impact on the customer.

Famous examples of companies, which differentiate themselves on customer service, are Caterpillar the earth moving machine manufacturer, and Iveco/Ford, the truck manufacturer. Both place emphasis on life-cycle costing considerations during the purchase decision phase and both have excellent dealership network back up during the operational life of their product. Caterpillar gives a guaranteed 48-hour delivery of spare parts worldwide and Iveco/Ford give a guaranteed 24-hour delivery of parts in Europe.

There are many measurement and control opportunities to improve communication and feedback of levels of customer service, which should link not only marketing/manufacturing but also design and development engineering too. Customer service is one of the key areas of adding value to the product to differentiate it from the competition and lock-in customers for repeat purchases and should therefore be closely controlled by all functions within the firm.



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## **SOME CAUSES OF CONFLICT**

### **Performance Evaluation and Reward**

It is not unusual for marketing people to be evaluated on criteria which give an external perspective to business performance - sales revenue, market share, new markets entered etc. Manufacturing people tend to be evaluated on internal criteria - efficient and smooth running operations at minimum cost. Profit orientation is often missing from each function, both tending to be focused on one side of the profit equation - price to the customer for marketing and cost of production for manufacturing. Marketing's drive for new products and new markets with differing competitive criteria - giving greater segmentation - are often massive headaches for an already stretched, 'reactive' manufacturing function - stopping a smoothly running process to carry out new product development is often a 'pain' for the harassed production manager. There is a tendency to protect self-interest, often at the expense of company performance.

### **Inherent Complexity**

There is much inherent complexity in large companies - numbers of people, numbers of products, different geographic locations of plants, sales offices, warehouses, R&D facilities etc, so the process of management of capacity, planning, new product development and service networks becomes an organisational nightmare. When dealing with many of the issues, marketing, manufacturing, R&D, project engineering, process engineering, finance, personnel, and corporate staff all need to be involved at some stage. So, as well as the problem/issue itself being complicated the 'mechanics' or process of doing the job or managing their interaction is also difficult. Onto this picture, the environmental factors - business and natural environment and competitor strategies, must also be overlaid.

The process is also complicated by the nature of information: marketing information is often 'soft' - use of attitude surveys, opinion polls and forecast extrapolations whilst the information base of manufacturing is 'hard' - cost of building new facilities, new



processes and equipment, training costs etc. It is therefore difficult for each function to 'work on the same wavelength' and each sees the faults in the others contribution.

### **Background and Stereotypes**

It is not unusual for marketing and manufacturing people from different backgrounds and hold different perspectives. Just look at these slightly exaggerated stereotype descriptions of managers and see if the image fits:

Marketing Manager - Age 30, - graduate from Redbrick University, studied Business and Economics. Graduate Trainee for fast moving consumer goods manufacturer, 1 year. Sales representative for two years. Area manager for 3 years. Moved into product management for a European home-ware electrical appliance manufacturer, 2 years. Now marketing manager for UK. Drives a BMW. Interests, golf and tennis. Lives close to the city, 1hour from the office.

Manufacturing Manager - age 40, graduate from a new technological University, studied production engineering with management. Graduate trainee for large engineering components manufacturer, 2 years. Industrial Engineer, 5 years. Area superintendent 3 years. Now manufacturing manager for home-ware electrical appliance manufacturer. Drives a Sierra. Interests, DIY, gardening. Lives in village, 15 minutes from factory.

Is there any wonder that they have little in common, and find it difficult to see each others problems, when they only meet once a year at the annual budget forum held in a local hotel. This I have seen, have you?



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## **MANAGING THE POTENTIAL CONFLICT**

### **Clear Objectives and Policies**

It is essential that everyone knows how their efforts contribute to the way the firm competes in its marketplace. This awareness can only come from data gathering, analysis, and communication plus shared understanding developed through a process of iteration between function and up and down the management hierarchy. The 'Hill' framework for the clarification of order-winning criteria shows how well defined objectives, shared between marketing/manufacturing and other key functions of the firm make the firm a winner. These objectives will change over time and change between product and market groups but they still need to be widely understood by all.

A manufacturer of gear wheels and pinion drives produced a wide catalogue of products. The manufacturing function believed they competed on price and high product quality. During an investigation into the viability of new machine centres, the marketing function was asked, "how do we compete?" The answer surprised the analyst; the marketer reckoned that 'availability' was a key competitive performance criterion and if they could offer a two-week lead-time, from enquiry to delivery, they could increase the sales price by 20%. As the new machine combined four previous operations, with their inherent WIP reductions, the manufacturing lead-time required was well within the customer requirement for high availability, which made the financial justification for new machine procurement much more viable than if carried out only on a low cost basis. However, attention to order processing times, planning and material procurement lead times and delivery routines, had also to be addressed, to meet the 2 week availability commitment.

It is not uncommon for manufacturing to be unaware of product market competitive performance criteria and for marketing to be unaware of the potential competitive advantage available from a well developed manufacturing system. The use of a sound framework for analysis and guidance, coupled with iterative inter-functional involvement is essential for the firm to obtain and sustain a long-term competitive advantage.



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**Appropriate Measurement and Controls Coupled with Good Information Systems**

Incongruent evaluation and reward schemes based for example on growth for marketers and cost efficiency for manufacturers can lead to conflict as discussed previously. To improve congruence, it is necessary to agree common goals, preferably related to customer needs through appropriate measures for both functions. Measures and controls need to have a 'Total Quality' focus, in terms of product quality-fitness for purpose, conformance to specification; quality of delivery teams - in terms of reliable delivery and speed and also quality accuracy.

“The right product at the right place at the right time”.

An example of this is in the service operation, it is important to measure the cost of providing a service, record the frequency of repairs and the time taken to put the problem right; this is the operations side. It is also useful to ask the customer to assess the service quality from his perspective, assess the helpfulness of the service person, indicate his service requirement schedule etc. - this is the marketing perspective. Some measurements, which will therefore be of mutual benefit to both marketing and manufacturing functions, could be:

- Percentage of visits due to product failure rather than routine maintenance
- Response time from customer request to fault correction
- Some index of criticality/frequency of faults

Information systems can provide competitive advantage by means of integrated databases and distributed systems (An example is a common component database). Customer needs and operations can be made available to all functions in 'real-time', which will aid communications and order process time, and so produce tangible benefits to the customer of high availability, on-time delivery, ability to change both product type and order quantity and assist in shortening the cycle of NPD through CAD, CAPP and CAMM systems. These systems can also provide meaningful information, which can link marketing to manufacturing by having:



- Good customer profitability analysis
- Market profitability analysis
- Awareness of market share analysis
- Quality performance information
- Accurate capacity/capability measure
- Volume/ variety cost penalties etc.

This meaningful and available information can help decision-making and improve shared understanding of issues and activities important to the long-term success of the firm.

### **People**

Following from the stereotypes of marketing and manufacturing managers, it is not surprising that lack of mutual understanding and communication occur between the two functions. There are ways of improving this, which many will doubt:

- Regular inter-functional meetings
- Review sessions

Instead of only having sales representatives present at area sales management meetings, invite the production managers and his supervisors along to listen and contribute to the session. Likewise, at manufacturing meetings, invite sales representatives and product managers. Organise inter-functional training events rather than parochial events - TQM initiatives and value engineering task groups are ideal forums for multi-functional participation. Budget and performance reviews are always made more lively if



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sales/marketing personnel, to try to maintain an external view of the internal deliberations, present a customer perspective.

***Mixed Career Development*** - paths for marketing and manufacturing people can be invaluable in developing a mutual understanding and appreciation of each other's roles. This can be achieved by secondment for specific projects based, for example, on new product developments. It can also be effective at an early stage of career development - during induction programmes or during the first few years of taking up a first job with the company. Large firms, like IBM, have an active policy of placing all employees in a customer related environment at some stage of their career. Consider Apple Macintosh and their approach to teamwork.

***Apple Macintosh*** - The personal computer was a radical departure in design; it was very user-friendly, easy to learn and fun to use. These features required lots of interaction between design and marketing. It was also designed for manufacturability; it contained only two PC boards (the competition had more), used 'snap-on' fasteners and was built as a no-options computer to simplify production scheduling and purchasing.

Organisationally, manufacturing for Macintosh reported within the Macintosh division rather than to the corporate-wide Apple operations division. This divisional organisation allowed closer interaction between Macintosh manufacturing, marketing and product design (both Macintosh entities). This organisational arrangement was recently changed; time will tell how the new arrangement will work. The Fremont manufacturing site was quite close to the marketing and design groups in California; an alternative site in Dallas, would have been quite distant.

During the pre-production stage of Macintosh the introduction date was postponed twice. While this presented marketing with difficulties, the division wanted to make sure the production system was working well and would be able to handle the anticipated surge in demand to fill the distribution pipeline.

Macintosh emphasised new, automated and advanced manufacturing capability in its plant. In fact, the plant itself was used as a major advertising 'event', with many



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magazine stories, lots of photographs inside the plant and extensive plant tours. By contrast, IBM has not chosen to highlight its Boca Raton, Florida production facility for IBM PC's.

Initially, sales forecasting was a sequential process starting with sales (a corporate function) passing its estimates to the division's product marketing group which modified them and then communicated point estimates of demand to manufacturing. In the new arrangement these three groups sit down together and work out both point estimates and confidence intervals on sales forecasts.

Using JIT, the Macintosh plant has its own component and work-in-progress inventory turning quite rapidly. However, commitments by vendors and inventories in the distribution system are measured in months, not weeks. Macintosh division managers view the distribution system inventory as an opportunity for innovative co-operation between manufacturing and marketing to rationalise the distribution system and reduce distribution inventories, while maintaining a high level of customer service.

### **Increase Mutual Understanding and Build on the Strengths of Each Other**

As a way of reducing the conflict at the marketing/manufacturing interface, corporate management needs to develop an awareness and responsiveness of each functions benefits and needs.

Marketing should try to build their programmes around the operational strengths of their manufacturing resources. The marketing manager must not be only aware of customer needs but also the ability and competencies of manufacturing to provide a differentiated product. Remember, marketing involves a matching process 'matching the needs of the customer with the benefits available from resources of the organisation

Manufacturing should not offer marketing a fixed capability. It must be prepared to change and respond positively to the requirements of the highly competitive marketplace. Competition will always take care of those who will not change.



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Manufacturing segmentation or focused manufacturing has been successful in allowing manufacturing management to concentrate on a limited but critical set of competitive performance criteria, closely related to market segments and perform them well. This approach can lead to ‘Plants within a plant’ organisation, which can enhance the dynamic nature of a firm’s asset base.

“The company will prosper when the marketing and manufacturing functions operate in an atmosphere of co-operation with the realisation that each has its own role to play and its needs to fill. Neither function can subvert the other.”

(Shapiro 1977)

### **Summary of Interfaces**

- Don’t just rely on better forecasts; make strategies more robust and workable under a range of scenarios.
- Develop a co-ordinated, closer link between marketing and manufacturing by attention to organisation (team working etc.); information systems (shared database and relevant critical information); people (mutual understanding). Don’t allow either function to optimise its own goals whilst ignoring the needs of the other.
- Be aware of new manufacturing technologies and their capabilities. Be prepared to invest in new technologies if these will provide the competitive capabilities to capture and sustain market advantages. Use tangible and intangible marketing and competitive capability benefits of manufacturing, to appraise investment opportunities, i.e. consider strategic factors alongside financial appraisal methods.
- Develop a customer viewpoint throughout the firm. Use both internal (next process) and external customer concepts to provide realistic and appropriate measures and controls. TQM initiatives are increasingly being used to spread these integrative concepts.
- Incorporate marketing and manufacturing input to NPD process. Ensure all team members are aware of the customer needs and how the new product will go about providing the benefits, which will satisfy those needs, in a timely manner.



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- Don't over-segment markets - this will only lead to complexity and confusion for manufacturing.
  - Reduce status differences between marketing, design engineering, production engineering and manufacturing people. Develop practices, which build up mutual respect between key functions.

With attention to these issues, the benefits of functional respect and perhaps ultimately integration will show in the sustained success of the company.



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