

# Management Quarterly

PART 4

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## Management Quarterly

### *A new way to keep ahead*

*Management Quarterly* aims to deliver the basic building blocks in core management disciplines. It is produced in association with Cranfield School of Management. Each issue will usually contain articles on Strategy, Human Resources, Marketing and Finance, with other occasional subjects such as Project Management and Knowledge Management. Over a three-year period this will build up to a comprehensive overview of practical business knowledge, and modern management ideas.

*Management Quarterly* will:

- Provide a comprehensive grounding in the knowledge needed to operate a successful business.
- Enable the reader to understand current issues and debates in these areas, and distinguish core ideas from current fads.
- Provide a wide ranging programme of CPE suitable for members both in business and advising businesses.

### Key points

- Each part will be self-standing and include recommended further reading.
- Writers are selected from Cranfield School of Management and other leading business schools.
- Experts in each field explain and discuss the relevance, practicality and usefulness of key new concepts and ideas, thus enabling the senior executive to keep really up to date.
- A message board is available on the faculty internet site.
- Chartered accountants often have limited reading time. *Management Quarterly* is succinct and the writers will direct the reader to other, and often fuller, expositions on the subject. The program is no substitute for an MBA but it will follow some of the major threads on an MBA.

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*Management Quarterly*  
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STRATEGY	COMPETITIVE STRATEGY: MAGIC BULLET OR QUACK CURE ?
	<p data-bbox="620 297 1326 336">Steven Sonsino, Cranfield School of Management</p> <p data-bbox="588 369 1442 586"><i>The competitive environment is first examined from the market perspective using Porter's five-forces analysis. Then, the resource-based views of strategic advantage are considered, where it is the characteristics of the company rather than the industry environment which are significant. Finally, the customer matrix and understanding the business from the customer perspective, competing on price and/or value, are discussed.</i></p>

## Introduction

In search of a cure for all business ills, the physicians of the consulting world pounced, 20 years ago, on competitive strategy as the magic bullet of all magic bullets. Competitive strategy, as presented by Harvard Business School's *enfant terrible* Michael Porter in his highly influential textbook *Competitive Strategy* (1980), was a rational and logical, coldly clinical approach that was simple and guaranteed to deliver sustainable competitive advantage to business units. Guaranteed ? Yes. It was a package that was persuasive and attractive to executives who were dazed and confused by ever more complex planning procedures. But what exactly was it that appealed to so many executives the world over ?

- First, because competitive strategy was based on economic theories of the way firms worked, it had credibility. It was a numerate, measurable discipline that appealed to the cynical business champions of the 1980s.
- Second, the simple yet deeply analytical nature of competitive strategy was appealing because many executives had cut their teeth in planning school. Overnight, planning or policy departments became known as strategy departments. Strategy boutiques and consulting practices bloomed all over the world.
- But perhaps the most important reason for the success of competitive strategy as a discipline was that those who used it appeared to be in control. It gave them a feeling of power and of being 'in the know'.

In other words, knowledge, as it always had been, was power. And competitive strategy gave executives a good deal of knowledge about themselves and about the competitors they faced in the market.

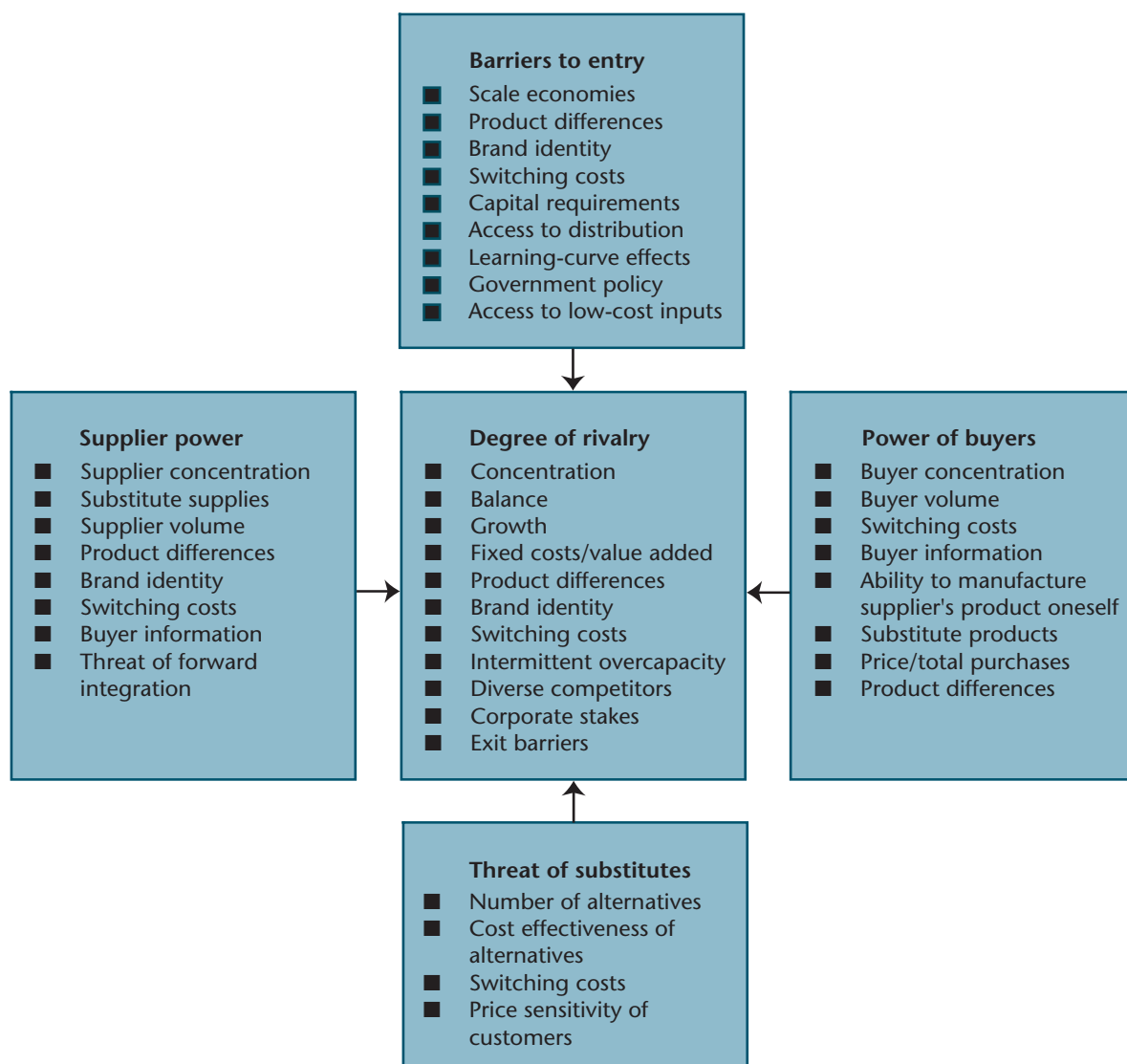
In essence, perhaps it was the simplicity of the questions underpinning competitive strategy that spoke most potently to managers – questions such as the following:

1. Where should we compete ? (On which markets, and which segments within those markets, should we concentrate ?)
2. With what products should we compete ?
3. How shall we gain sustainable competitive advantage in these chosen markets ?

## The competitive environment

Perhaps Porter's key contribution was the five-forces framework he devised to help executives analyse the attractiveness of an industry to a key player already operating in that market. (Porter defined an industry as a group of firms providing a similar service or product for the same market.) The five forces are these (see *Figure 1*):

- rivalry among existing firms;
- the barriers to new entrants;
- the bargaining power of buyers;
- the bargaining power of suppliers;
- the threat of substitute products or services.



**Figure 1** The five competitive forces

### Rivalry

Porter outlined a number of factors that determined the probable intensity of rivalry in an industry. Here are some of his key factors:

- slow growth or declining demand, which usually precipitates price cutting in an attempt to increase market share;
- high fixed costs, which drives firms to produce at or near full capacity;
- unpredictable and diverse competitors, which create a volatile arena;
- low switching costs, which allow a buyer to switch to another supplier with ease;
- a commodity product unsupported by a brand or having other perceived value.

### Barriers to entry

When new firms enter markets they bring additional capacity, and, unless they create or bring additional demand, they have to compete for a share of the existing market. The net effect is usually lower overall profitability in the industry. Barriers to entry can arise from a number of sources, for example the following:

- economies of scale that are not achievable by new competitors;
- brand loyalty;
- access to intangible know-how;
- capital cost of market entry for would-be competitors;
- high switching costs.

### The bargaining power of buyers

Buyers can be powerful for various reasons:

- when there are few buyers that purchase in bulk;
- when the buyers have low switching costs or are not loyal;
- when they face large numbers of small or commodity sellers;
- when there is a real threat that the buyer may decide to integrate backwards, that is, make the product rather than buy it in.

### The bargaining power of suppliers

Conversely, suppliers can be powerful in the following situations:

- when the purchase is important to the buyer;
- when buyers have high switching costs;
- when there are few other sources of supply;
- when there is a real risk that the supplier may integrate forward (as, for example, when a car manufacturer establishes its own dealer network).

### The threat of substitutes

Potentially the most damaging force is the threat of substitution, which can best be appreciated from the customer's perspective. A shopper looking for food at lunchtime, for instance, may consider a sandwich bar, a fast-food burger restaurant and a pizzeria as competitors for her cash.

### Advantages and disadvantages

The main advantage of the framework is that it provides a structure for management thinking about the competitive environment, and it can often stimulate insights into areas of the business that need to be addressed proactively. It may be simple and effective to create switching costs, for instance.

Managers using the framework often rate the strength of each of the forces and assign points to the main competitive factors under each heading, from 1 (weak) to 5 (strong). Under this scheme, an attractive industry might score 12 or fewer points. The disadvantage of such a simplistic system is that it does not weight particularly desirable factors.

## Competitive analysis and benchmarking

If the rational and clinical approach to competitive strategy suggests that a firm can simply analyse the external environment to identify where to compete, the inward-looking approach focusing on core competencies, persuasively synthesised by Prahalad and Hamel (1990), suggests quite the opposite. Their work enshrines the idea that the only way to identify what an organisation's long-term strategy should be is to understand what resources it has at its disposal.

This resource-based view of competitive advantage offers the following series of questions as part of the strategy-making process:

1. What existing resources (people, capital, etc.) do we have at our disposal ?
2. What are we good at ? In other words, what are our core competencies ?
3. How much profit can we get from the markets available to us ?

The strategy that often emerges from an analysis of this kind is, in essence, a gap analysis outlining a set of strategic choices that bridge the shortcomings in internal resources or competencies, or even lead to the acquisition of a firm with the appropriate competencies.

In contrast to the market-led view of competitive advantage, the resource-based view suggests that above-average profits can only be extracted from markets where the firm can make better use of its resources or competencies than the competition. In other words, it is largely chance and history that determine success, rather than some perfect economic market striving for equilibrium.

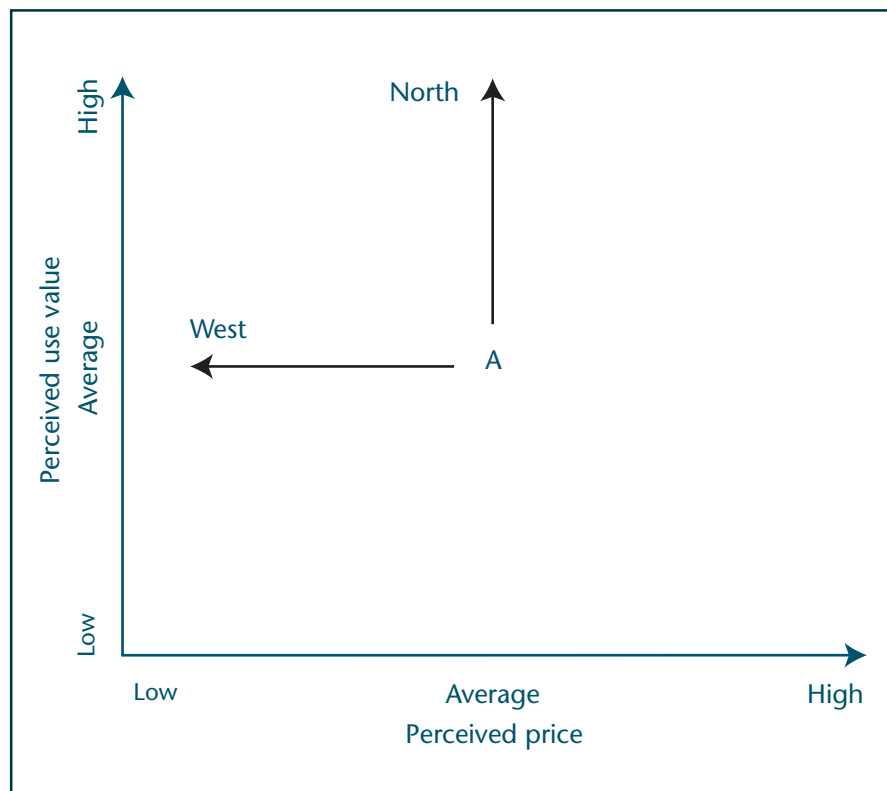
However, rather than one school or another being settled on (years of academic research lend credibility to both philosophies), a common sense view seems more practical. An effective competitive strategy should therefore take account of both the market-led and the resource-based theories, and look both externally and internally for strategic direction.

## Understanding the customers' perspective: competing on price

A powerful tool for viewing and trying to understand a firm's internal strengths, but from a market-led perspective, is the customer matrix (see *Figure 2*). Perceived use value (PUV), or the satisfaction experienced by the buyer in purchasing and using the product or service, is plotted against perceived price (PP) (also see Appendix 1). By separating these two components of 'value for money' the customer matrix can help firms to assess and analyse a variety of strategic options.

The first option to which many firms turn is price cutting (due west on the customer matrix). In theory this should lead to a greater market share, but in some markets lower price means lower perceived use value. (Some customers see price as an indirect way of measuring value.) If this proves to be the case, the customer sees lower perceived price as bringing lower perceived value (a move south-west on the customer matrix).

In addition, competitors can imitate a strategy of price cutting very quickly. To succeed with a price cutting strategy a firm must be able to drive down prices continually and to sustain lower prices for longer than its competitors. Such a firm must usually have the lowest costs in the industry. However, the long-term prognosis is that the company with the deepest pocket wins.



**Figure 2** Two strategies for customer matrix

Key risks of competing on price include the following:

- The firm may not be able to achieve the lowest costs in the industry; by definition, only one firm can occupy this position.
- Price cutting may lead to a price war as competitors match price cuts to retain market share; margins for all but the lowest cost players may be trimmed drastically.
- A cost-cutting or efficiency focus distracts management from spotting external trends as well as changes in taste and competitive behaviour in the marketplace.

### Understanding the customers' perspective: competing on value

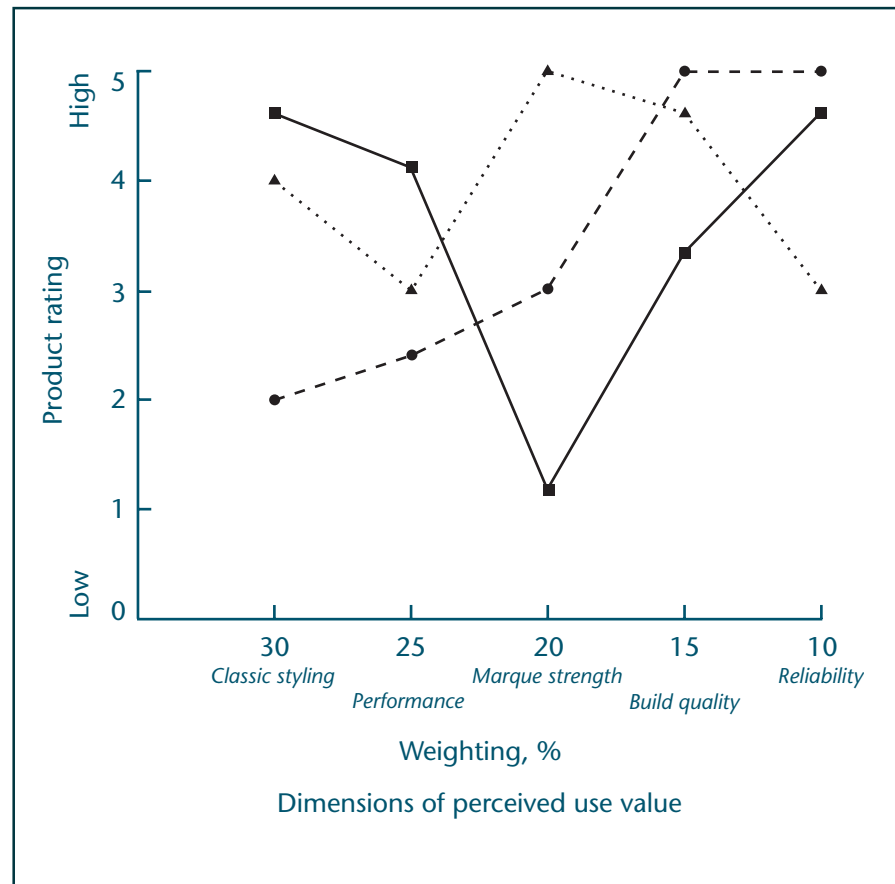
To increase the perceived use value that a customer gets from a product, the supplier must have a thorough understanding of customer needs and of how customers evaluate the different offerings available to them. This means that firms must systematically explore customers' needs and expectations, through good quality market research and by continually listening to customers.

By ranking the elements or dimensions that customers prize, and by weighting each element of the firm's product against those of a competitor's offering, a firm can establish an effective system of benchmarking to enable PUV to be measured, assessed and improved (see *Figure 3*). Benchmarking can be undertaken more overtly where relevant data are shared directly with competitors (for instance pan-European trade associations have their own benchmarking codes of practice to support this), but in highly competitive markets such freedom of information is unusual.

If a firm is to increase PUV to move north on the customer matrix, it must innovate or enhance its service offering. However, in most industries there is a tendency for previously order-winning features or benefits to become merely order-qualifying criteria. In other words, to sustain competitive advantage and keep moving north on the matrix, a firm must constantly keep one step ahead of the competition. Adding a price cut at the same time can occasionally help in outpacing the competition.

The following are typical concerns about adding value:

- Can the firm add value and be the lowest cost producer in the market ? If the increase in PUV adds market share, this should translate into lower costs through economies of scale and through the firm's greater experience in manufacturing.
- Can the firm ever understand what the customer really values ? There is no point in offering a range of costly features if this is not what the customer values.
- Can profitability be maintained or enhanced ? The cost of adding value must not exceed the added revenue from price or volume changes.



**Figure 3** Perceived use profiles for executive cars for three different manufacturers

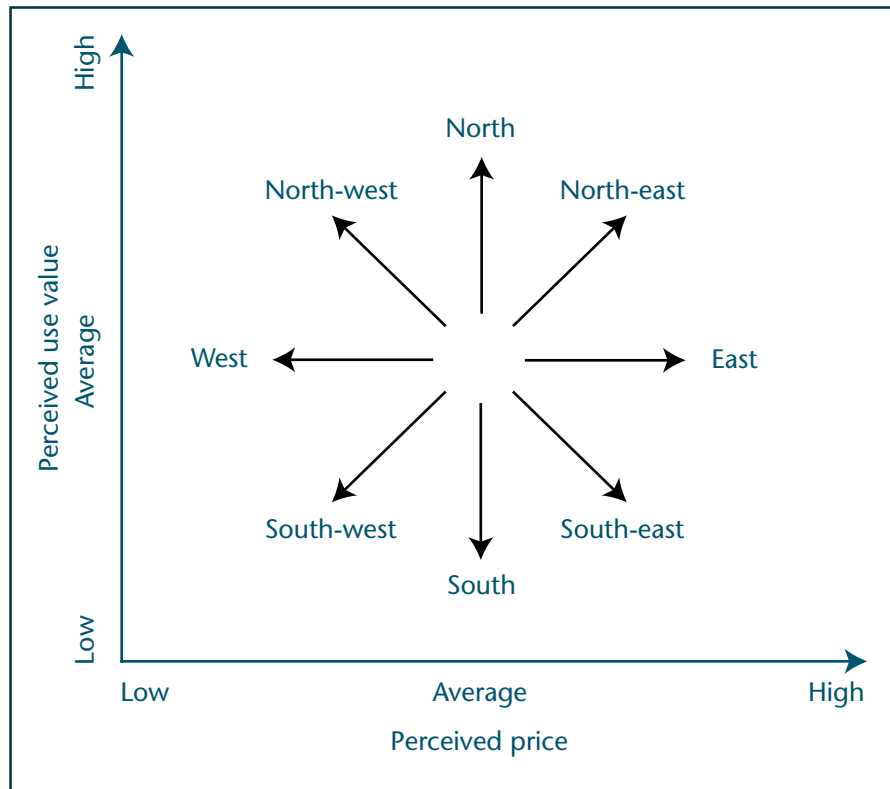
### Understanding the customers' perspective: other generic strategies

Say for argument's sake that a firm's chief product is perceived by the customer as costing much the same as competing products and having much the same rating on the PUV axis. Perhaps this is a commodity product. To differentiate the product from competitors' products, the manufacturer has a number of options, as shown in *Table 1* and *Figure 4*.

In conclusion, a detailed study of perceived use value and perceived price, from the perspective of a firm's customers, yields a powerful set of questions that can be used to drive strategic thinking:

1. What do we know about customers in this segment ? Specifically, what are their actual needs ? What for them are the critical dimensions of PUV ? And how do they actually evaluate products and services ?
2. What do we know about our competitors ? Who is already in this market ? Where are they positioned on the customer matrix ?

3. Where should we try to enter this market? What makes us think we can outperform the players already in this market?



**Figure 4** Competitive moves in customer matrix

**Table 1** Product differentiation options

Compass point	Effect on compass	Description
1 North	Increase PUV, maintain PP	Adding value
2 North-east	Increase PUV and PP	A move up-market; success depends on market being prepared to pay more for added value
3 East	Maintain PUV and increase PP	Can increase profitability if competitors follow suit
4 South-east	Decrease PUV and increase PP	Only feasible where there are supply constraints
5 South	Decrease PUV and maintain PP	May happen inadvertently by competitors adding value
6 South-west	Decrease PUV and PP	A move down-market
7 West	Maintain PUV and cut PP	Price-cutting strategy may lead to effect 6
8 North-west	Increase PUV and cut PP	Effective competitive strategy

### Sustainable competitive advantage and benchmarking

To achieve movements in the customer matrix, strategists have at their disposal unit costs (and therefore price flexibility) and the key value-creating competencies that lead to PUV in the eyes of customers. Plotting these against each other (see *Figure 5* and Appendix 2) illustrates the relationship in what Bowman and Faulkner (1997) call a producer matrix.



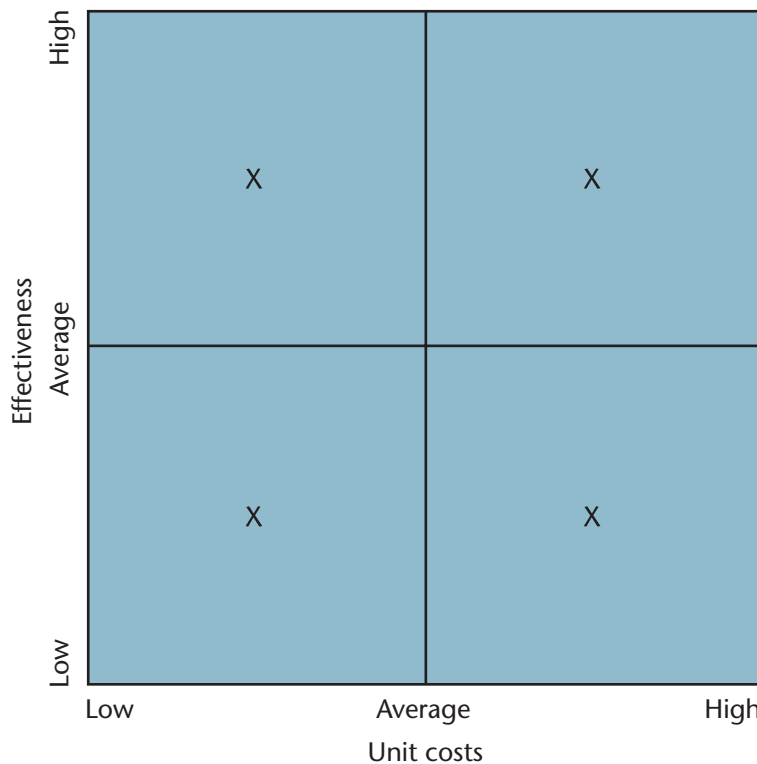


Figure 5 Producer matrix

This producer matrix is in effect the tool that manufacturers must use to explore changes in their positioning on the customer matrix. Those positions cannot be changed directly because the dimensions are the value and price *as perceived by customers*.

The difference between the customer matrix and the producer matrix are quite subtle, and key situations that help explain the differences include the following:

- While improvements in core competencies may lead to a move north on the producer matrix, this can result in no movement at all on the PUV axis of the customer matrix if the customer perceives no change in value.
- A shift northwards on the customer matrix (increasing PUV) may come about spontaneously (with no corresponding change on producer matrix) because of a change in public taste.
- A firm may move westwards on the producer matrix by cutting its costs, but may decide that supply is in such short demand that it can afford to increase prices – a move eastwards on the customer matrix.

Following an analysis of the customer and producer matrices, a firm will begin to identify the characteristics of its core competencies matched against market opportunities. Research shows that for the firm to sustain strategic competitive advantage, resources and competencies need to be

- valuable;
- durable;
- rare;
- difficult to copy;
- difficult to substitute.

Characteristics with any or all of these distinctive qualities will help a firm to earn above-average profits in the long term.

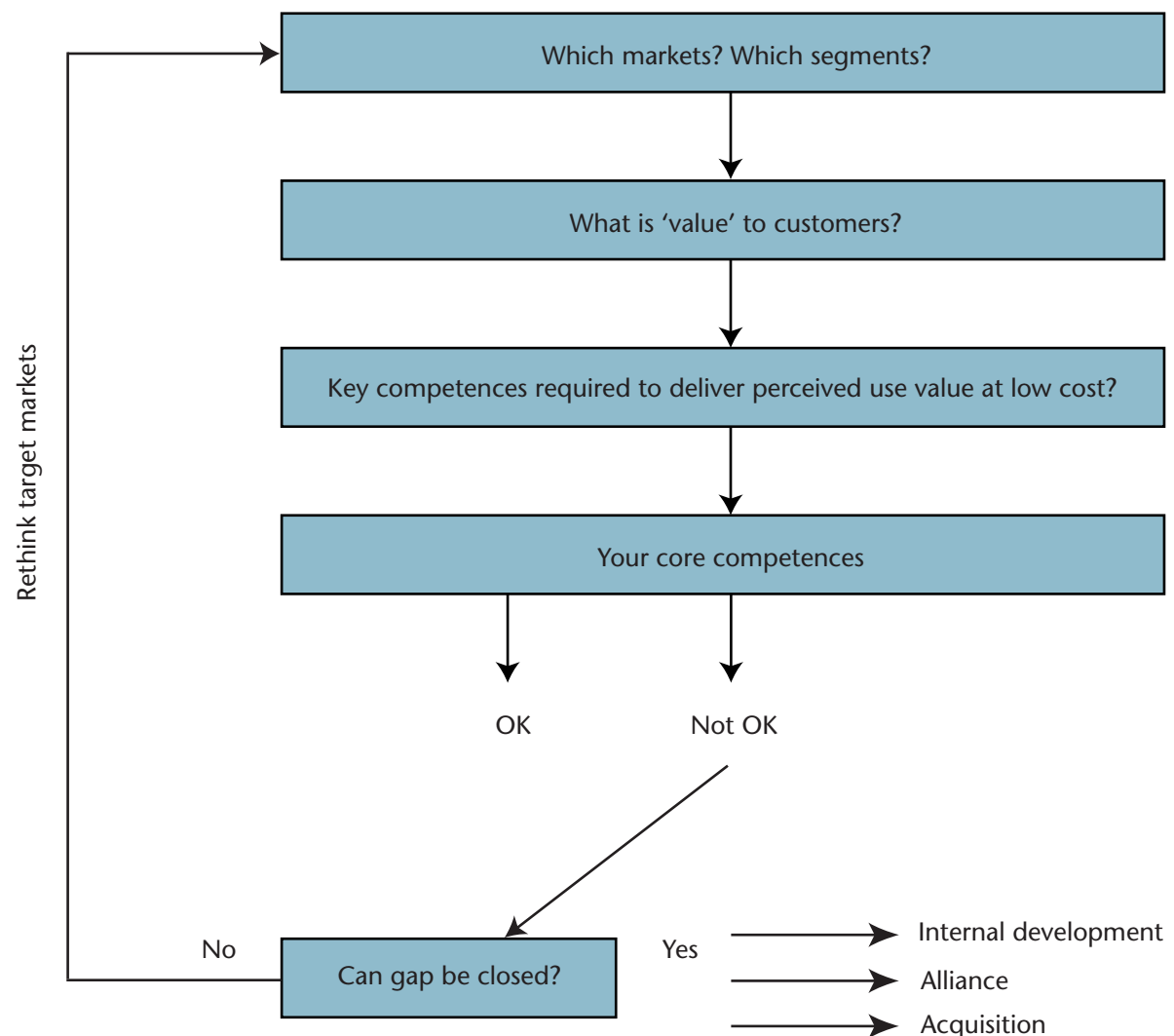
## Summary: defining a competitive strategy

The combination of an external environmental analysis with an internal focus on resources and competencies will provide a firm with a sound basis for a sustainable competitive strategy. The focus must always be customer- or client-centred, and particularly ask what the firm has to do well to deliver what the customer really wants.

And if a firm's competencies are found wanting in this combined analysis (see *Figure 6*), then the firm needs to set about closing the gap – by an internal redistribution of resources, through an alliance, or through acquisition. If none of these can be achieved successfully, then the firm must look again at its chosen segments and reconsider where it should compete.

Where most organisations fail in devising a competitive strategy is in forgetting the high level of specific detail into which they need to drill down to make sense of what customers want. New customer and producer matrices for every segment are necessities. The next point at which strategies fail is that, having completed such detailed and time-consuming analyses, people forget that a weighty strategy report on every director's desk does not mean that a strategy will be successfully implemented.

In other words, the tools of the rational strategic planning school, while important for starting the debate about strategy, are not of themselves going to succeed in getting strategy implemented. In addition, it is the politics of strategic management – who you know as well as what



**Figure 6** Deriving a competitive strategy

you know – that have become increasingly significant in the implementation of corporate competitive strategy.

There is no doubt that competitive strategy is no quack cure for business. But competitive strategy alone, without an understanding of ‘the way things happen round here’, is no magic bullet either.

## Appendix 1

### Creating a customer matrix

- *Step 1: Identify customer segments:* Identify a real individual buyer of a key product or service.
- *Step 2: Identify the dimensions or elements of PUV for this segment:* Ask customers what characteristics they look for in products or services they buy.
- *Step 3: Rate the dimensions of PUV:* Which are the most important of the dimensions generated in step 2. Choose the top five by surveying customers, and distribute points out of a total of 100, say, to represent weightings.
- *Step 4: Assess a firm's performance on the PUV axis:* Assess how well the firm performs with its product or service against its major competitors. Avoid relying too much on internal data. Consult outsiders, such as industry analysts, customers or suppliers.
- *Step 5: Plot positions on the matrix:* Plot the data and create a customer matrix in the form of the one in Figure 2.
- *Step 6: Identify dimensions of PUV common across all segments (benchmarking):* If there are common PUV dimensions that are critical to a number of products, it should prove possible to construct a competitive strategy to address these core dimensions.

## Appendix 2

### Creating a producer matrix

- *Step 1: Prepare an activity-cost chain analysis:* Prepare an activity cost or value chain analysis of the product/service under review.
- *Step 2: Agree a segment definition:* Be specific.
- *Step 3: Identify key operational and system competencies:* What does the firm need to be really excellent at to win in this segment ?
- *Step 4: Rate the firm's competencies against those of key competitors:* Conduct a similar exercise for key competitors, and plot them on the vertical axis of the producer matrix; use whatever realistic cost data can be generated to complete the plotting.
- *Step 5: Develop a core competencies matrix across segments:* Producer matrices should be inspected to identify the most common key competencies required across segments in an industry.

## References

### ■ ***Competitive and Corporate Strategy***

Bowman, C and Faulkner, D (1997) Irwin

*This is a more detailed work than Strategy in Practice (see below) that also covers selecting, resourcing and controlling corporate strategy.*

### ■ ***Competitive Strategy***

Porter, M (1980) Free Press

*This and Competitive Advantage (see below) are strategy classics that have to be read at least once.*

### ■ ***Competing for the Future***

Prahalad, C K and Hamel, G (1990) Harvard Business School Press

*This now-classic guide to resource-based theory and core competencies propelled its authors to guru status in the strategy sphere. It is an easy-to-read and thought-provoking account of this powerful branch of strategic thinking.*

## Further reading

### ■ ***Strategy in Practice***

Bowman, C (1998) Prentice–Hall Europe

*This is a down-to-earth exposition of competitive strategy, including the customer matrix, and it also touches on culture and managing strategic change. It constantly asks perhaps the single most important strategy question, ‘so what?’, and turns it into a powerful analytical tool in its own right.*

### ■ ***Strategy Safari***

Mintzberg, M, Ahlstrand, B and Lampel, J (1998) Prentice–Hall Europe

*This is a thorough yet readable, informative yet entertaining, overview of the strategy literature. Its critical view of the different strands of strategy theory help this book to stand out over textbook compilations of strategy tools. If you are serious about strategy and strategic thinking, this book is a must.*

### ■ ***Competitive Advantage***

Porter, M (1985) Free Press

**MARKETING****UNDERSTANDING CUSTOMERS:  
THE ORGANISATION**

Roger Palmer, Cranfield School of Management

*In our last issue, we examined the customer as an individual: this article looks at business-to-business transactions, which have a very different dynamic. It considers the question of who actually is the customer in these circumstances, and looks at the various individuals involved in the buying process. Various types of buying decision and developments in purchasing strategy are also discussed.*

**Organisational buyers**

When we think of marketing, we may think of consumer goods we might purchase as individuals. However, in order for the product to reach the shops, a whole sequence of events has to take place 'behind the scenes'. Various companies contribute raw materials, semi-finished or processed products, or business services such as transport and computing, all of which enable consumer products to reach the marketplace. This is the sector of business-to-business or industrial marketing, as opposed to consumer marketing (see MQ3), in which companies buy from and sell to each other, an area of marketing that has notably different characteristics.

**Characteristics of business-to-business markets**

It is easy to understand that turning basic raw materials, such as sand and gravel, oil, steel and other commodities, into value-added products can be both complex and technology-dependent. Successful operation in such markets often requires well developed technical skills enhanced by experience and understanding of the industry. Also important in business-to-business markets are distributors and intermediaries, the so-called 'middle men'. They serve a vital purpose in helping products to reach their eventual markets by providing such services as warehousing and inventory management, physical distribution and after-sales service.

Perhaps one of the primary characteristics of business-to-business markets is the role of personal selling as a means of communicating features and benefits to customers. In consumer markets, where there are many customers, advertising and the use of the media are cost-effective means of communication. In business-to-business markets this is not the case, and this, combined with the technical complexity of products, means that face-to-face selling and communication are extremely important.

**Who is the customer ?**

Who is the customer in business-to-business markets ? At first glance, this seems such a simple question that the answer suggests itself. The customer is, of course, the organisation to which we sell our products. As implied above, organisational markets ultimately depend on the individual purchases of consumers. This introduces us to the concept of derived demand. No matter how good our industrial product is, no sales will result unless a consumer makes a

purchase and thus stimulates demand within the production chain. For example, in the market for car tyres, one can expect to sell five tyres for each new car sold. However, if economic conditions are poor and consumers are not inclined to purchase cars, and their purchases can easily be deferred, at least in the short term, then the market for new car tyres will decline. Historically, the automotive industry has been regarded as the bellwether of economic prosperity, and we saw in the 1960s and 1970s how interest rates and consumer credit were manipulated to manage demand and hence the economy.

The answer to the question of who the customer is may thus be that it is not just the purchaser of our product, but also every participant in the downstream supply chain, including the consumer. So perhaps a manufacturer can influence members of the supply chain to purchase its products? An excellent example of this approach is the Intel Inside campaign, which was designed to stimulate consumer awareness and demand for Intel microprocessor products – many readers will have seen the ‘Intel Inside’ logo on computer products. The voice of the consumer has ultimate power. For instance, despite the dazzling technology of genetic modification, manufacturers cannot fail to be influenced by the strong opinions that are expressed on this controversial topic.

## The business buying decision process

Consumers make buying decisions individually, but, owing to the nature of business-to-business markets, a distinctive feature of this type of market is the role of the decision-making unit (DMU). The DMU is generally composed of a number of participants. Buying processes are often formalised to encompass such issues as quality specifications, delivery schedules and payment terms. DMU members often fall into the following categories:

- *Authorisers*: These are senior managers who are responsible for policy decisions about, for example, the type of software to be used across the organisation or the signing off of the final decision. Once such decisions have been made, the opportunity to sell competitor products to the customer is much reduced or lost completely.
- *Users*: These are people who have first hand involvement and experience with the product and who are likely to have an input into the decision-making process.
- *Specifiers*: Specifiers are technical specialists who are capable of translating the user's need into the detailed specification for the product.
- *Influencers*: These can have a direct or indirect role in the decision-making process, perhaps as consultants or advisers. An important source of influence is a previous satisfied user, and reference sites and case studies are often used as part of the sales process.
- *Purchasers*: Purchasers are the members of the buying department who are responsible for implementing the buying policy and ordering from suppliers. Sellers often make the mistake of thinking that the purchaser has the entire responsibility for buying the product.
- *Gatekeepers*: These are the people, such as secretaries and advisers, who control access to other members of the DMU. They have a vital role to play in acting as channels of communication and in providing informal access to the buyer.

Of course not all members of the DMU are involved in every purchase decision. This depends on the size and significance of the intended purchase, and there are often corporate guidelines on this. For example, it is important to know the cut-off point for capital versus revenue purchases. Can a deal be restructured so that it is made up of a series of revenue purchases which do not have to go through the protracted capital allocation process? The purchasing process is often thought of in one of three ways:

1. *Straight rebuy*: This is the simplest type of purchase, with authority usually being delegated to the purchaser. The CEO of IBM is not involved in the purchase of paper clips !
2. *Modified rebuy*: In this type there are perhaps some minor changes to specifications or other terms and conditions of purchase which may entail the input of other members of the DMU.
3. *New purchase*: Here it is likely that there will be wide and more formal involvement of the DMU, particularly where substantial expenditure or significant issues of policy are involved.

## Developments in purchasing strategy

There has been growing realisation by buyers that the sourcing of supplies represents a significant cost in itself. With increasing pressures on profitability, companies are looking for new and better ways of working with their suppliers. Traditionally, buyers feel more secure if they have several sources of supply, but this means that time and expense are involved in qualifying and managing each of the potential suppliers. If all of the organisation's requirements can be sourced from one supplier, then financial advantage can be gained in two ways. Firstly, cost savings result from the buyer not having to negotiate with so many potential suppliers; secondly, the aggregation of volume should enable the supplier to reduce costs still further. Not surprisingly, there has been a very significant trend towards companies reducing the number of their suppliers.

We now live in a world of increasingly mature markets; takeovers and consequent rationalisation are a constant part of business life. Consistently with this there has been an growing trend towards regionalisation and globalisation of manufacturing and service-based business-to-business companies. As companies and their customers and suppliers become fewer in number but larger, there is a strong underlying rationale for companies in the supply chain to work more closely together. Hence we see the increasing importance of alliances and partnerships in horizontal and vertical supply-chain relationships. These allow companies to utilise skills and resources which would otherwise be unavailable to them at minimal capital outlay whilst maintaining strategic flexibility. In the IT industry, for example, we see IBM and Microsoft both co-operating and competing in various parts of their businesses.

New technology, particularly in the area of communications and the Internet, enables companies to interact in different ways. All aspects of not just the supply chain but also networks of alliances and partnerships are being examined. Each constituent company has to work harder to justify its role or otherwise run the risk of 'dis-intermediation', in other words, of being replaced by a competitor or technology tool that can provide better value for money.

Alongside this continuing trend, rationalisation has also increased the interdependence of the remaining industry players. The continuing pressure on margins is a strong inducement to find better ways of working together, as the following case study illustrates. This study is a genuine case, but for commercial reasons the companies must remain anonymous.

## Case study: steering a new path to an interdependent relationship

A major supplier of automotive components to one of the global automotive manufacturers now no longer supplies steering components to its customer. Yet its importance as a supplier to the customer has increased enormously. This situation may seem paradoxical, but the explanation lies in the way in which these two companies now work together. The supplier no longer supplies steering racks and constant-velocity joints. Its role is now rather to supply and fit trouble-free steering to meet the expectations of the driver.

The buying company identified a need to remove cost from its upstream supply chain, and it went through a process of supplier rationalisation. Its new requirement for the chosen supplier was that it be able to meet the quality standard defined by the customer. This means that the supplier has to act as a first-tier manager in the steering subassembly supply chain, and manage the second-tier suppliers. In addition, the supplier's staff actually fit steering components to the buyer's cars as they move down the assembly line. The supplier is only paid once the vehicles have been completed and delivered off the assembly line.

The supplier's responsibilities do not end there. Its job is to provide trouble-free steering to the satisfaction of the consumer. The supplier must build appropriate quality checks into the assembly process in order to minimise costly but non-value-adding fault rectification once the car has left the factory. The supplier has even gone to the extent of developing a freephone customer support telephone service so that customers may quickly and easily have any questions answered or problems resolved.

## Summary

Business-to-business marketing is distinct from other areas of marketing owing to the size of the customers and suppliers, the role of technology, and the complexity and interdependency of the relationships in this sector. It involves not just selling products to customers, but also managing relationships with customers and other members of the supply chain. Anticipating change rather than responding to it is an important way of retaining and sustaining competitive advantage. The ability to be flexible and act quickly in a world increasingly dominated by mature products is likely to be a characteristic of leading business-to-business companies in the future.

## Further reading

### ■ ***Managing Business Relationships***

Ford (1998) John Wiley

*Summarises much of the new work in the area, but can be a little academic for the business reader.*

### ■ ***Managing the Supply Chain***

Gattorna and Walters (1996) Macmillan

*Written from a logistics perspective, and gives a very readable and comprehensive overview of the area; recommended for those with an interest in this topic.*

### ■ ***The Principles of Marketing***

Kotler, P, Armstrong, G, Wong, V and Saunders, J (1997) Prentice-Hall

*A sound starting point for anybody interested in the subject.*

### ■ ***Marketing the Unknown***

Millier (1999) John Wiley

*Discusses the principles involved in marketing new high-technology products, and is particularly useful in explaining how technology can be developed into a product.*

### ■ ***Industrial Marketing Strategy***

Webster (3rd ed., 1995) John Wiley

*A basic text that is specific to the area, although a little dated by modern standards.*



## FINANCE

## THE COST OF EQUITY

Gülnur Muradoglu, Warwick Business School

*This article continues our coverage of the building blocks of cost of capital, as part of our focus on shareholder value and company valuations. Here the author examines the cost of equity, discussing the theoretical derivations and use of the dividend discount model and the capital asset pricing model. Arbitrage pricing theory is also considered.*

The cost of equity is the opportunity cost of raising funds through equity. Whether you use retained earnings or issue new shares for financing, you will have in mind that you face competition. Your shareholders always have the opportunity to sell their existing shares and invest in another company. The return they require from investments in your company is, at the same time, the company's cost of equity, that is, the opportunity cost of raising funds through equity. Therefore, in fact, it is the valuation process for shares in which we are really interested while calculating the cost of equity.

It is difficult to value ordinary shares. Interest payments on bonds are fixed. In the case of shares, dividends fluctuate. Bonds usually have a fixed date when the principal will be repaid. Shares do not. Payments to shareholders are tied to the fortunes of the company. That is why share investments are riskier than bond investments. And that is why investors demand higher rates of return to invest in shares. That is to say, there is a *risk premium* on shares which is reflected in the higher cost of equity.

Suppose that you were initially given an estimate of the cost of equity as 15%. You were told that the share investors required a 15% return on their investment. You might be a little uneasy. How do we know that this is what the equity investors want? Of course you want to check whether this is a reasonable estimate.

In this article we look at what determines share prices and how we can calculate the return that investors are expecting. We shall see that company prospects are reflected in share prices. We shall see why analysts focus so much on the price/earnings ratio (the P/E). We shall see what the dividend discount model is. We shall understand the famous CAPM and the beta, and alternative valuation models will briefly be cited. In short, we shall deal with alternative approaches to calculating the cost of equity, and use them properly.

## Estimates based on the dividend discount model

Investors know that the value of any asset is related to the cash flows expected from that asset. In this case we are interested in the value of ordinary shares, and the value of a share today is the sum of the value of all the future dividends expected from the share. We know that money today is more valuable than that money tomorrow, and we must discount each forecast dividend properly. We divide each expected dividend by 1 plus the *required rate of return* ( $r$ ) raised to the power  $t$ , the number of periods ahead from today when the dividend will actually be received. Then, the share price  $P_0$  today is the sum of the present value of the future dividends. This is the dividend discount model:

$$P_0 = \frac{D_1}{(1+r)^1} + \frac{D_2}{(1+r)^2} + \dots + \frac{D_t}{(1+r)^t} + \dots$$

The question is then that of how far out into the future you can look. It is not reasonable to assume that you can forecast dividends precisely, for example as £1.10 next year and £1.27 a year later and £1.23 ten years later and so on. One might in some cases assume that the share will offer a perpetual stream of equal cash payments. That is to say,  $D_1 = D_2 = \dots = D_t$ . No-growth shares will sell at the present value of the constant dividend payment. Then the value of the share will be

$$P_0 = \frac{D_1}{r}.$$

Another simplification that has a good deal of practical use is the supposition that the dividends will grow at a constant rate into the indefinite future. This is, in fact, about the case for many companies. If dividends grow at a constant rate of, say,  $g$ , we just need to forecast the next dividend  $D_1$  and the constant growth rate  $g$  and use the following price formula:

$$P_0 = \frac{D_1}{r - g}.$$

How do we figure out what the rate of return required by investors is? We can calculate the expected rate of return by rearranging the constant growth formula as follows:

$$r = \frac{D_1}{P_0} + g.$$

In practice, the *Financial Times* will give details of  $P_0$ , and if you can use some forecasts of next year's dividends  $D_1$  and long-term growth rates  $g$ , you can use the formula pretty easily. Remember that your estimates of the expected rate of return on equity will only be as good as the estimates of the dividends and the growth rates that you are using. In practice, share value does not change much beyond 30 years. Still, that is a long time to assume that either dividends or their growth rate will remain constant. Things change!

Now, let us come back to our case. You look at the *Financial Times* and see that your shares are selling at £30.00 (that is,  $P_0 = 30$ ). Looking back, you see that for the past ten years or so the company has grown at approximately 8% per year ( $g = 0.08$ ), and so have dividends. The last dividend paid out was £1.94 ( $D_0 = 1.94$ ). You can make a quick calculation that the dividends will grow at approximately 8% again and next year's dividend will be £2.10 ( $£1.94 + (8 \times £1.94)/100 = £2.10$ ). Then your estimate of the rate of return on equity will be

$$\begin{aligned} r &= \frac{D_1}{P_0} + g = \frac{2.10}{30.00} + 0.08 \\ &= 0.07 + 0.08 \\ &= 0.15 \\ &= 15\%. \end{aligned}$$

It is good to know that your decision is based on some method that is intuitive and fully under your control! You might, indeed, calculate alternative cost of equity figures for a range of dividend and growth rate forecasts that you think are reasonable.

## Estimates based on the capital asset pricing model

The capital asset pricing model (CAPM) tells us that investors demand a higher rate of return for riskier shares. This is very intuitive. Then the question is 'how do we measure risk?'.

There are many alternative measures of risk. Standard deviation and coefficient of variation are frequently used risk measures. However, both of these measure the risk of a share in isolation. That means that they ignore the fact that investors normally have a *portfolio* of shares, and what is important for them is the risk of a share in a portfolio.

When you have a portfolio of shares, you diversify away some of the risks, and these are called *unsystematic risks* or *unique risks*. There is still, however, some part of risk that cannot be diversified away, and this is called *systematic risk* or *market risk*. Unique risk stems from the fact that many problems related to an individual company are peculiar to that company. The management team may change, there may be a strike, a new product may not be promoted well, and so on. That risk, which is called unique risk, can be greatly reduced by diversification, that is, by having a portfolio of assets rather than owning that company's shares in isolation. However, market risk stems from the fact that there are economy-wide events that affect all businesses. We all know that share prices have a tendency to move together so that even well diversified portfolios are exposed to market movements. Just think about the recent Asian crisis !

The risk that you cannot avoid, no matter how much you diversify, is market risk. That is why well diversified investors want to be compensated for the market risk that they bear. At this point, we want to measure market risk, and of course the return that would be sufficient to compensate for bearing that risk.

The market risk is measured as the individual share's sensitivity to the fluctuations of the overall stock market. The sensitivity of a share's return to fluctuations in returns in the market portfolio is called the share's *beta*, and this is often written as the Greek letter  $\beta$ . If you were to measure the sensitivity of a share's returns to the returns on the market, you would run the following regression:

$$R_t = \alpha + \beta M_t + \epsilon.$$

You would like to measure the required rate of return  $R_t$  on the share by relating it to the return on the market index  $M_t$ . The error term is  $\epsilon$ . The constant is  $\alpha$ ; the slope of the regression line is  $\beta$ . The *beta* that measures the market risk is actually the slope of the line that is calculated by regression. *Beta* is the slope of the fitted line.

Suppose that the slope of the regression line is 2. That means that the share is twice as volatile as the market. For each 1 point rise in the market, the share price rises an average of 2%. For each 1 point fall in the market, the share price falls, on average, 2%.

The investors do not run risks for nothing. They want to be compensated for bearing higher risks. Therefore, they require a higher return from the market portfolio than from gilts, which are pretty safe. The difference between the return on the market and the interest rates on gilts is termed the *market risk premium*. This is the additional return that an investor should expect for investing in the share market rather than gilts.

Gilts have a risk-free return  $r_f$  of, say, 5%, and a beta of 0.0, that is, the interest you will receive is fixed, while the share market fluctuates. The market portfolio naturally has a beta of 1.0 and an expected return  $r_m$  of, say, approximately 12%. With a long-term average return  $r_f$  of 5% on gilts and an average 12% expected return on the market, the market premium  $r_m - r_f$  is  $12 - 5 = 7\%$ . Suppose also that your firm's beta is 1.5. Given these benchmarks, what rate of return will an investor require ?

The capital asset pricing model defines the basic risk/return relationship. The CAPM tells us that investors demand a certain return  $r$  based on two things. First of all, they want to be compensated for the time value of money, which is the risk-free rate  $r_f$ . Next, they want a *risk premium* that depends on beta ( $\beta$ ) and the market risk premium  $r_m - r_f$ . The formula is as follows:

expected return on market = risk free rate + share's beta  $\times$  market risk premium

$$r = r_f + \beta (r_m - r_f) .$$

Beta measures the risk relative to the market, and therefore the expected *risk premium* on our share is beta multiplied by the market risk premium. In this case, beta is 1.5 and the market risk premium is 7%, so the risk premium on our share is 10.5% ( $1.5 \times 7 = 10.5\%$ ). The total expected rate of return on our shares is 15.5%, that is, the sum of the risk free rate, which is 5%, and the risk premium on the share, which is 10.5%. The CAPM would put the cost of equity in this case at

$$\begin{aligned} r &= r_f + \beta (r_m - r_f) \\ &= 5 + 1.5(12 - 5) \\ &= 15.5\% . \end{aligned}$$

You now feel more confident about the initial estimate of a 15% cost of equity.

## Arbitrage pricing theory

The CAPM is a single-factor model. It specifies risk as a function of only one factor, the beta. What if many factors are required to specify the equilibrium risk/return relationship? The *arbitrage pricing theory* (APT) provides a framework that allows one to work with any number of risk factors. The required return could be a function of two, three, four or more factors. However, it is not necessary to identify the relevant factors. You can use a statistical procedure called factor analysis to develop the APT parameters.

The primary appeal of APT is that it permits several economic factors to influence share returns in the framework. However, the most severe problem with APT is that it does not identify the relevant factors. If the factors can be successfully identified, APT can be used with confidence. There is empirical evidence that factors such as inflation, industrial production, interest rate spreads and term structures work well, but no one knows for sure. The CAPM rules.

## Price/earnings ratio

The price/earnings ratio is an indicator of the prospects of the firm. It shows how the market participants value the share given its current earnings. The P/E ratio is published in the financial media, and it is one of the ratios most frequently referred to in describing the market perceptions of company prospects. In order to justify a high P/E ratio one must believe that the firm is endowed with growth opportunities.

Turn the P/E ratio upside down and you get the earnings/price ratio (the E/P). There is a relationship between this ratio and the return that investors require on the share. If the firm has no retained earnings and distributes out all earnings as dividends, then  $E/P = D/P$ , the dividend/price ratio. Yes, you remember correctly. This is the formula we used in the dividend discount model for no-growth shares !

Be careful when you look at price/earnings ratios. First, remember that the earnings/price ratio is equal to the dividend/price ratio *only when the firm has no growth opportunities*. This means that, if all earnings are distributed out as dividends, the firm does not reinvest earnings and thus the share is an income share. Next, earnings reported in the company income statement may be biased in accordance with the accounting choices of the firm. The P/E ratio will give some indication of the required rate of return on the share. But do not use these ratios to calculate the cost of equity before making the due adjustments.

## Concluding remarks

At this point it is important to recognise the limitations of the models we have used so far. The dividend discount model is simple and intuitive, but the accuracy of results depends entirely on the accuracy of the forecasts about future dividends. Accurate forecasting is not an easy task. Despite the increased sophistication of forecasting technology and more powerful computers, we are, after all, living in a world of uncertainty, and any forecast about the future should reflect this uncertainty. The P/E ratio may be used just to check the cost of equity calculations quickly, but under very limited conditions.

The CAPM is extremely appealing at an intellectual level. It provides a conceptual framework that is rational and logical. However, in practice, we work with ex-post data, and the results are prone to all types of error owing to the use of historical data. Empirically, it is known that betas vary greatly with the time period for which they are estimated and the methods used to estimate them. The level of the market risk premium is also uncertain. APT is an improvement over the CAPM in the sense that with it we specify the risk/return relationship using more than one factor. However, all the other limitations due to estimation periods and procedures apply here as well. Besides, choosing the relevant risk factors is a difficult conceptual and practical task.

It is appropriate to use one of the above methods or a combination of them, depending upon the circumstances. The availability of data, the quality of data, and the costs of producing the relevant data are all important concerns. Managers must see the effects of each individual component on the final outcome. That is how they can make better and more informed decisions.

## Further reading

### ■ *Principles of Corporate Finance*

Brealey, R A and Myers, S C (5th ed., 1995) McGraw–Hill

*An excellent MBA level book.*

### ■ *Fundamentals of Corporate Finance*

Brealey, R A, Myers, S C and Marcus, A J (1995) McGraw–Hill

*'Geared more toward the financial novice' the authors say.*

### ■ *Financial Management: Theory and Practice*

Brigham, E F, Gapensky, L C and Ehrhardt, M C (9th ed., 1999) Dryden Press

*An excellent reference text – very clear and readable.*

### ■ 'The arbitrage theory of capital asset pricing'

Ross, S A, *Journal of Economic Theory* (December 1976) pp 341–360

*The pioneering work on arbitrage pricing theory.*

PROJECT MANAGEMENT	PROJECT MANAGEMENT: CONTEXT AND PROCESS
	<p>Ralph Levene, Cranfield School of Management</p> <p><i>Project management skills are essential to many aspects of business life. This article looks at the basic role of project management, and the time/cost/quality trade-off that is so often faced in projects. The processes of project management are considered, as are the organisational issues and the steps that need to be taken for success.</i></p>

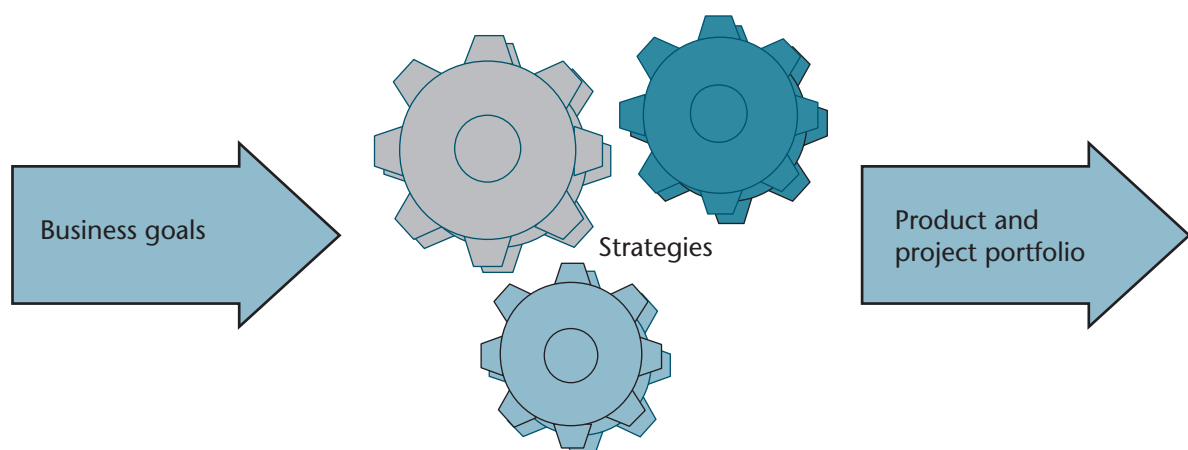
## The rise of project management

A scan of the positions vacant advertisements in professional magazines will yield a good crop of jobs for project managers. Project management may conjure up an image of someone clad in wellington boots and a hard hat directing operations on a muddy building site, but you obviously do not need a hard hat to manage one of the proliferation of Y2K projects that currently abound. However, you do need the same project management toolkit. In the final decade of the 20th century, when the rate of change is increasing not only in pace but also in extent, project management is now recognised as the most suitable discipline for managing the introduction of products, services, facilities and change within the organisation.

So, what do project managers do and why do they do it? Let us consider the 'why' first, and the 'what' and 'how' later.

## The context of project management

Successful organisations gain competitive advantage through the achievement of their strategic plans. Most measures of success reflect the successful implementation of a form of change, such as the introduction of new products, the creation of new markets, or the provision of new facilities. Typically, the projects that are generated from within an organisation arise from the various strategies that combine to form the overall business strategy of the organisation (see Figure 1).



**Figure 1** Projects arise from the overall business strategy

## Change, strategy and cross-border management

The management of organisational change as part of the organisation's strategic direction is now recognised for what it always has been – a project process. Working across different boundaries, cultures and functional areas embodies all the characteristics of what we know as project management.

### Why project management ?

We can regard project management as the mechanism (or vehicle) by which we introduce change into an organisation or, in detail, how we achieve a set of defined objectives encompassed within a common goal. The latter definition fits the traditional view of the purpose of a project, and it encompasses those organisations that carry out projects as part of their everyday business, such as contractors and consultancies. An audit assignment, for example, could well fall into the definition of a project, and a large assignment would benefit from the application of the techniques of project management.

A project requires the delivery of a specific (unique) enterprise which involves people working together to complete a particular end product or specific deliverable (result)

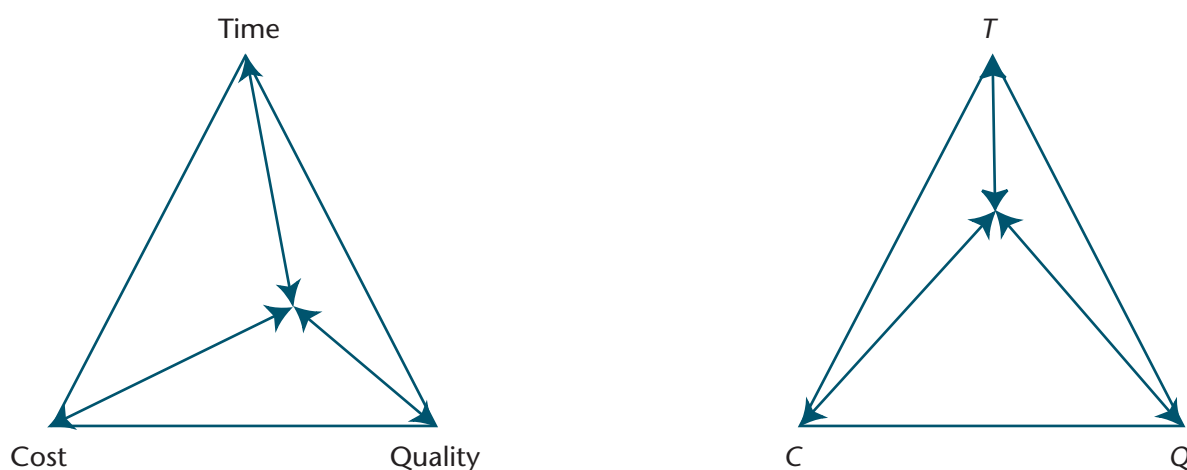
- by a required or specified date;
- to a specified budget;
- to a specific quality or standard of performance.

These parameters are frequently represented by forces in a state of equilibrium or balance. A change to the state of any of them will affect the others.

The triangular model of these elements (see *Figure 2*) illustrates the trade-off relationships between the parameters for the defined scope of the project. For example, if the project time needs to be decreased to meet a market need, then either the cost or the quality, or both, will be affected.

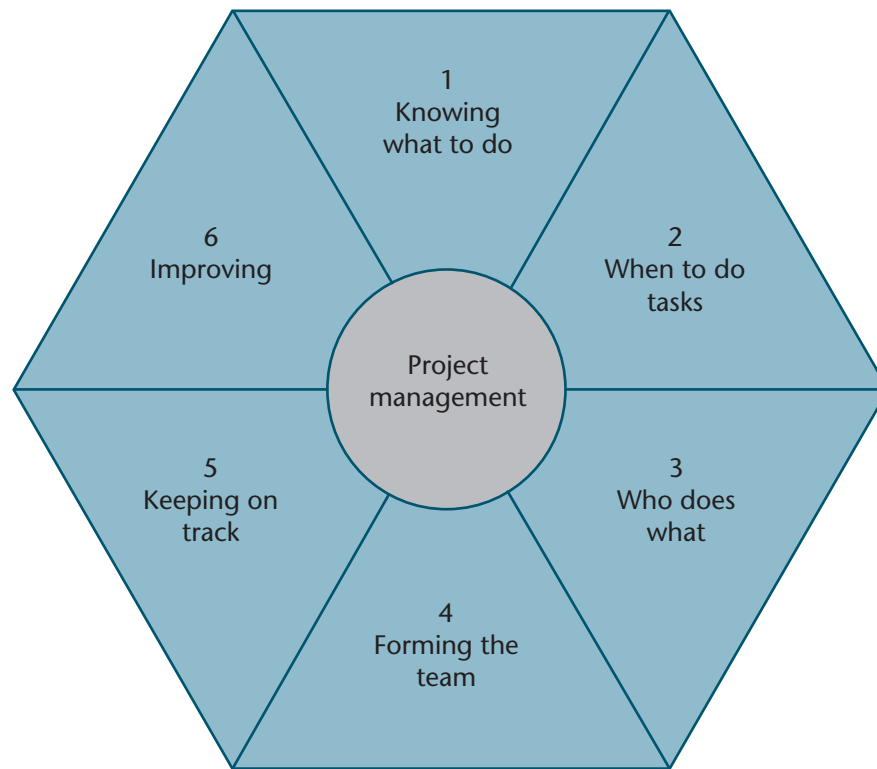
## The processes of project management

Project management has developed into a blend of methodical techniques that are designed to help in planning and controlling the project, and behavioural or 'soft' techniques to help in the people processes. In general, the methods are oriented around the planning, monitoring and control of time, costs and deliverables. Team leadership and the building of cohesive teams are key elements in ensuring project success. Best practice in the use of any of the planning and



**Figure 2** Triangular model of time, cost and quality





**Figure 3** Model of project management processes

control techniques involves a team rather than individual effort. *Figure 3* shows a model of the project management processes.

### 1. Knowing what to do

The scope of the project is defined initially by the goals and objectives of the project. The detailed breakdown of the scope can be represented by a work breakdown structure (WBS). Creating a WBS is a systematic way of defining the scope of a project. The process breaks down (or decomposes) the project into natural elements for management and control purposes. Effectively, this means creating 'more manageable chunks of work'. Carrying out the process of determining the WBS has immense value in helping to identify missing scope items and areas for further definition. The WBS is drawn as a hierarchical subdivision of the project, in a similar way to a family tree.

The structure and content of the WBS should be agreed by, at the least, the key team members. Its creation is often a consensus group process, involving the relevant parties who will carry out the project. The WBS diagram provides the basis for the identification of responsibilities, and it relates elements of work to each other and to the end product (deliverable). Above all, it is an excellent visual way to communicate the scope of the project.

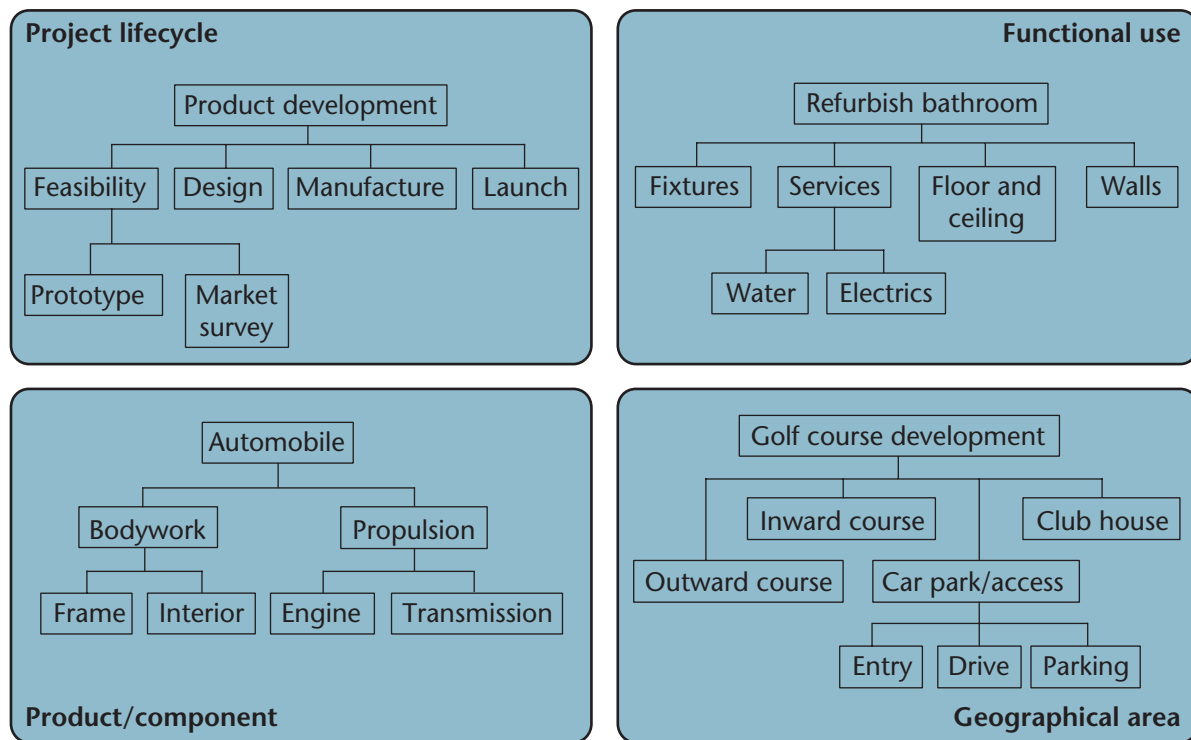
### Producing the WBS diagram

The construction of the WBS can be approached in a number of ways. A view of the most common approaches shows the advantage of a diagrammatic representation (see *Figure 4*). The elements of the lowest level of breakdown are generally called work packages. This level shows the work to be done, and products or deliverables are associated with each work package.

### A framework for control

The WBS can be the heart of an integrated project management information system by relating the work to be performed, the organisation structure, and the individual responsibilities for the work. It forms the foundation for planning and budgeting and subsequent detailed activity or





**Figure 4** Typical work breakdown structures

task planning. Most modern project management (software) information systems support analysis, reporting and control based on WBS structures, to enable decisions to be made with the overview information given by the WBS.

## 2. When to do tasks

When the scope of work has been defined with the aid of the WBS, the detailed activities or tasks need to be planned and scheduled using project network techniques. There are a number of these techniques, for example network analysis, CPM (the critical path method), and PERT (the Program Evaluation Review Technique). In each process, the constituent activities of a project are assembled into a logic model and then analysed by time. The model takes the form of a diagram, which represents the sequence of activities, and thus the way in which the project will be carried out.

The diagram (plan) is sometimes confused with the schedule, which (correctly) is derived from the plan by analysis of the timings associated with the activities. The schedule is often shown diagrammatically as a timescaled chart – a bar chart or Gantt chart. A schedule can also be represented as a list of activities with associated start and finish dates (or times).

The essential steps in producing an analysed plan are as follows:

1. Determine all the activities required to complete the project.
2. Produce a diagram that models their logical sequence.
3. Assign durations to each activity.
4. Calculate the total duration of the project and the timings of each activity.

The longest path through the project network is the minimum project duration, and this is the 'critical path'. Further scheduling, taking into account resource needs and limitations, can be carried out as step 5.

An acceptable plan may often be the result of several cycles of the steps shown above. If the calculated end date does not match the target, the plan is re-examined and the deployment of more resources is explored. Producing an acceptable plan is crucial to the future success of the project. This is often done at a planning meeting, and is frequently a consensus process involving the project team that creates ownership of the plan.

### **The effect of resources**

An insufficiency of resources will obviously delay the project. The extent of any delay will depend on the shortfall between the resources needed and those available. The project manager needs to know the following:

1. How long will the project take if there are not enough resources ?
2. What resources are needed to complete the project in the minimum time ?

The resource needs for each activity are determined. The resource scheduling process then takes into account a number of factors, including criticality, spare time on activities, and resource availabilities, in order for a new schedule to be produced. The calculations required are simple in principle and could be done by hand, but this is tedious for many activities, resource scheduling is very complex, and the use of software is, in practice, essential.

A schedule will undoubtedly be changed by the effect of limited resources. This resource limited plan can then form the basis for the rest of the project. It is often frozen as the project baseline plan (or original plan).

### **3. Who does what**

In most organisations, each project is treated as a single entity and its progression and success is the responsibility of its project manager. The project organisation for each project may be different, although there may be a preferred style that fits best with the culture of the company.

The most suitable project organisation and structure is influenced by the following:

- the type of project (development or change);
- the complexity of the project;
- the culture of the organisation (is the project approach natural ?);
- the skill and competence of the project manager.

Whilst many organisations tend to operate a matrix form of project organisation, there are various other options. There are three major types of organisation: functional, matrix and project team.

### **The functional project organisation**

Traditionally a typical organisation would have functional divisions, such as production, marketing and human resources divisions. The strength of this type of organisation lies in the concentration of resources or disciplines that together enhance the exchange and development of expertise and technology. Projects that are suitable for such organisations are narrow in focus, and make few if any demands on resources outside the 'owning' division. Functional project work inevitably means that the leadership of such projects comes from a discipline expert whose concentration on the technological aspects of the project may push the management of the project processes into second place.

### **The matrix project organisation**

The matrix in this type of organisation can range from weak to strong, reflecting the extent of commitment of functional resources to the project. This also indicates an increase in the management of those resources by the project manager, as opposed to the functional manager.

The matrix form of organisation implies a balance between the project and the discipline. People working on the project are responsible to the function for the quality of their work and to the project manager for production of the project deliverables. The project manager should distinguish the project team and create enough interaction between them for them to feel part of the project, in spite of their location within the function. Close integration is needed between the resource planning aspects of the function and the activity planning aspects of the project.

### **The project team organisation, or task force**

Organisations that work entirely as project teams are rare, although firms of consultants are a good example. In one version of the project team approach, all project personnel are employed within a 'projects' division, and the company administration is retained outside this structure. Major contractors in the oil and gas and aerospace sectors operate in this way. Project managers in such organisations have a high profile, and progression through the organisation is frequently through the project route rather than the functional route.

## **4. Forming the team**

### **Project leadership and the team**

As project management has developed as a discipline, the role of the project manager has become much broader. In general, the project community has drawn on experience from the disciplines of organisational behaviour and human resources. Specific experience has been gained from some of the large projects of the last 40 years, and this has identified roles such as project sponsor and project director as well as the function of the steering committee or project board.

The project management role is developing in importance as many organisations change and the need to work across the organisation increases. The traditional skills of many project managers have had to be augmented by financial and strategic skills as organisations orient themselves towards a project style of working.

An essential ingredient in the success of any project will be the project manager or leader. Although strong leadership may seem to be a vital skill in a task force environment where the authority of the project manager is high, in a matrix environment, negotiation skills and diplomacy are more valuable in securing resources. Building the project team and blending them into a cohesive unit is the major challenge in all cases. Attention to team building activities is most important at the start of a project; selecting and forming the team requires knowledge of people's skills, behaviour and attitudes. Action oriented team-building events and psychometric tests can be valuable at the start of a project.

Completing the project within its time, cost and quality objectives remains the prime responsibility of the project manager. In addition, all the project stakeholders, including the project team, have to be satisfied. This frequently requires conflicting agendas to be addressed. Therefore, a project manager must have skills over and above those of a 'functional' manager that include leadership and motivational skills in a team environment that often includes temporary resources.

## 5. Keeping on track

### The planning, monitoring and control cycle

Project control is part of the cycle of *plan – monitor – control*. Control only happens when action is taken to correct any deviation from a valid and well established plan. It is vital to effective control to establish baselines and measure progress against them. Therefore, attention to the planning process is the foundation of control. The control focus in most projects is on time and cost; however, the principles apply to any set of major project deliverables such as materials and specifications. The cycle encompasses ‘where’ the project is and, more importantly, ‘where it is going’. Figure 5 shows not only the cyclic nature of project control, but also the various actions that need to be taken depending on the extent of the variance between the planned and actual situation.

During the project, the activities on the critical path must be done to schedule. If an activity on the critical path is delayed, all subsequent activities on its path will also be delayed. The project will take longer than the agreed time, unless remedial action is taken.

Management of cost will always be judged by closeness to the budget. The original budget will relate to the cost estimate approved for the project. The final budget will incorporate agreed project changes. The final part of managing the cost will be to produce a historical report, which

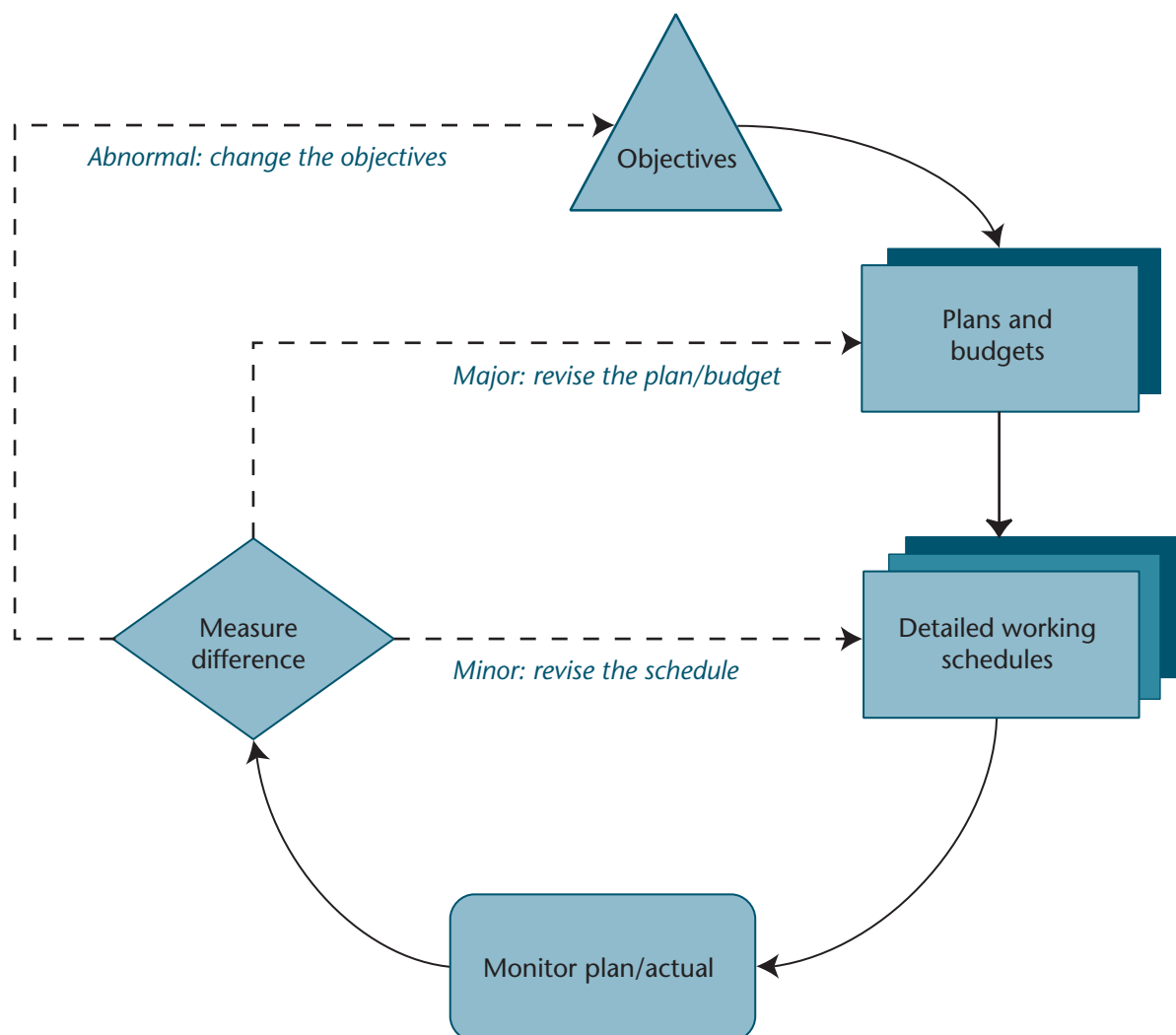


Figure 5 Project control cycle

is essential for improved future estimates. Accurate recording of costs throughout the project is therefore of prime importance. In many projects, a large proportion of the project cost is generated from the time that people spend: accurate and timely timesheet recording is therefore essential. Some of the actual costs come from the organisation's financial accounting system. Links between the project cost system and the finance systems have to ensure data integrity and timeliness.

### Communication

The final stage of any control procedure will be to communicate any changes to plans or budgets. This may be part of the review meeting held regularly by the project team, but it is essential that agreed decisions and changes are reported to everyone with an interest in the project. Amendments to the project plan should be published and distributed.

## 6. Improving

Regrettably, few organisations learn well from projects. At the end of a project, personnel are deployed elsewhere. Information capture is frequently neglected, and so the feedback to estimation for future projects is often poorly performed.

### Methods and procedures

Many organisations, however, have developed standards for processes, not only for project control, but also for the wider issues of project management, including organisation structures and the role of the sponsoring organisation. These procedures and methods are as much a part of project management as corresponding quality standards are of the operations of the business.

## Further reading

### ■ *Project Management – Strategic Design and Implementation*

Cleland, D I (1990) McGraw–Hill

*An advanced text, but it offers excellent coverage of all aspects of the field, and very good checklists and bibliographies.*

### ■ *The Management of Projects*

Morris, W G M (1994) Thomas Telford

*A very comprehensive survey of the major issues seen from a wide range of experiences.*

### ■ *Project Management Demystified*

Reiss, G (1992) E F Spon

*A very readable general book with an emphasis on techniques.*

## OUTLINE SYLLABUS

*Management Quarterly* is designed to be a three-year endeavour, setting out key management techniques in core disciplines. Over that time, it is expected that the content may develop and change. However, here we set out the current anticipated syllabus for the journal.

### Strategy

What is strategy? ✓ *Part 1, October 1998*  
 What does corporate HQ do? ✓ *Part 2, January 1999*  
 Strategic alliances ✓ *Part 3, April 1999*  
 Competitive strategy ✓ *Part 4, July 1999*  
 Strategic analysis tools – the external environment  
 Strategic analysis – assessing internal resources  
 Linking external and internal analysis  
 Strategic choice: stakeholders  
 Strategic decision making  
 Strategic change  
 International strategy  
 The future of strategy

### Human resources

Introduction to people management ✓ *Part 1, October 1998*  
 Changing roles and responsibilities ✓ *Part 2, January 1999*  
 Strategic HRM and the management of change ✓ *Part 3, April 1999*  
 Motivating and monitoring  
 Developing the organisation  
 Personal development and people management competencies  
 Managing conflict and difference  
 The role of trade unions and collective representation  
 Impact of the European Union  
 International HRM  
 Ethics and corporate governance

### Marketing

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Planning and reporting ✓ *Part 1, October 1998*

Operating and business systems ✓ *Part 2, January 1999*

Interest and discounted cash flow ✓ *Part 3, April 1999*

The cost of equity ✓ *Part 4, July 1999*

The cost of capital

Shareholder value

Valuation of companies

Financial instruments

International finance

Mergers and acquisitions

Project finance

Venture capital

Articles are also being commissioned to cover: information systems, just-in-time operations, and total quality management. Further material on people management, concentrating on the individual rather than the organisation, will also be included.

Copies of the journal articles referred to can generally be obtained through the Institute library. A charge is made for these articles, based on the number of pages to be copied.

**IN THE NEXT ISSUE ...****Strategy** *Strategic analysis tools – the external environment*

Continuing the theme of environmental analysis, this article looks further at tools for understanding how a company interacts with its industry and with the wider environment.

**Human Resources** *Motivating and monitoring*

The role of performance management and its links to business strategy are critical. The parts played by job evaluation and rewards are discussed, together with the important issue of motivation.

**Marketing** *Relationship marketing*

The creation and management of relationships with customers and other parties is a key aspect of marketing, and it follows naturally from this issue's discussion of business-to-business marketing.

**Finance** *The cost of capital*

The development of a cost of capital is considered for use as a basis for corporate hurdle rates. Appropriate levels of debt and equity are also discussed.

*Management Quarterly* will act as an aide-memoire for members, provide new ideas, and encourage good practice, but the Faculty cannot accept responsibility for the accuracy or completeness of issues of *Management Quarterly*. **Being general in nature, the points made in *Management Quarterly* may or may not be relevant to specific circumstances.** Responses from the membership will be a very important part of the successful development of the series. Comments please, to Chris Jackson on 0171 920 8486 (or by e-mail to CDJackson@icaew.co.uk).

*Management Quarterly* is compiled and edited by Ruth Bender, who joined Cranfield School of Management as a lecturer in 1994, having completed her MBA there. Prior to this, she was a corporate finance partner in Grant Thornton. Ruth is a member of the Faculty committee.

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