

Introduction

Who is this book for?

This book is for managers in manufacturing companies. It is for those who wish to ensure that their decisions and actions are consistent with their business needs, which in turn are consistent with their customers' needs. In short, this workbook is for managers who want to take a more strategic view of their business in order to develop and sustain a competitive advantage.

They already know that it is not easy to achieve a successful manufacturing operation, and that the elements of manufacturing operations can interact in unexpected ways:

- Production equipment and its layout have a significant impact on the manufacturing performance delivered to the market.
- To empower workers' recruitment, training, performance measures and managers' behaviour all have to evolve in concert.
- Out-sourcing certain components *can* have unwelcome effects on new product introduction performance.
- A failed quality initiative will affect future initiatives.

Decision making

Professional managers know they need better ways of viewing and predicting these interactions than experience and war stories alone can provide. As they organise the delivery of a rush order (in ways that, hopefully, will not compromise volume at the end of the month) questions of how to achieve quality, lead time and cost improvements must be shoe-horned into quieter moments.

Managers often have to make decisions more quickly than they would like. To do this effectively, to get many more decisions right than wrong, they need frameworks for understanding how their decisions fit within the business as a whole and how they can help business success. This book provides these frameworks.

Action

This book is about what managers do all the time. Whether or not they use the word 'strategy' to describe their actions, they are faced with choosing what to do next and what to do differently. In many companies financial exercises such as the annual budget round, investment programme or three-year plan provide focal points for strategy-making. Much of the real strategy-making, however, does not happen at these meetings. They are often more about setting objectives than deciding how they can be achieved; real strategy comes from deciding issues like:

- Which machine should we buy?
- Are cells the right way forward for this product group?
- Should we quote for this unusual order?
- Should we stop manufacturing this item and buy it in?

Much more strategy will be involved in the implementation of these decisions – take cells for example:

- Persuading workers and supervisors that cells are a worthwhile change
- Modifying production control systems to fit cell needs
- Getting maintenance fitters to train cell workers to carry out routine lubrication and filter changes
- Re-evaluating recruitment procedures
- And so on

Some managers may believe that implementation is about tactics, not strategy – but what is a strategy worth if it is not implemented?

Implementation is as much a part of strategy as generating objectives and deciding how they can be achieved. In this book strategy is not an airy fairy notion, *it is about action*.

Practical tools

In Section 4 we describe a practical, tested way of viewing your business and improving your decision-making. There are tools for evaluating and identifying conflicts in your current strategy and tools for evaluating ideas and plans against objectives. There are visual methods for communicating your strategy and implementation plans as well as advice on adapting the approach to become part of your managerial routine.

Benefits

The main tangible benefits will be:

- An agreed set of improvement objectives for your business.
- A prioritised, coherent action plan that addresses these improvements.
- A rapid way of reconsidering your plans, over time, in the light of events.

The intangible outputs will be peculiar to your situation, but all those involved in the approach should gain a useful and fresh perspective on strategy. They will recognise its relevance to them and view the entire business through new eyes. So expect participants in the approach to have their strategic antennae raised and a stronger management team as a result.

Practical questions

Faced with this opportunity, managers usually ask a series of questions:

- How long does it take?
- What resources are required?
- How should it be planned?
- How can I persuade myself and my colleagues that this is worth doing, and how should I start?

These questions are addressed head-on in Section 3 where the resource implications of the approach and ways of making a start are described. This is preceded, in Section 2, by guidance on how to select the right individual as the facilitator. Finally, the detailed steps in the approach are described in Section 4.

But first, Section 1 describes the strategic principles that underlie the approach and provides an overview of the approach.

Section 1

Introduction to strategy and an overview of the approach

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We recommend that all participants read this section of the introduction before the first process session in which they are involved.

The purpose of this section is to explain the principles behind the strategy-making approach described in Section 4 and so enable participants to gain a common understanding of:

- What strategy is (and is not)
- What manufacturing strategy is and how it relates to business strategy
- The process of manufacturing strategy design.

These topics are addressed in turn, with the terminology clarified at all stages. The overview of the approach includes:

- Purpose – why are you engaging in this process? There can be many potential reasons.
- Procedure – although described in detail in Section 4, an overview of the steps is also given here.
- Participation – who should be involved and at what stage?
- Also, four key aspects which should be agreed before launching the approach (Section 4).

1.1 What is strategy?

Strategy – a definition

Perceptions of what the word strategy means differ widely in the same organisation, not only between board members and production supervisors, but also between board members themselves. To understand our approach, it is important to appreciate the perspective we have taken. For us, there are four important questions that relate to a practical definition and understanding of strategy:

- What is its scope – what is included and what is not?
- Are there different levels of strategy and how do they interact?
- How and when do strategies arise?
- How can a strategy be recognised?

Scope

There can be significant disagreement on the scope of strategy. This seems to emerge from an emotive division between strategy and tactics. Some senior managers believe they are involved with strategy and strate-

gic decisions while those who report to them are concerned with tactics. There are strategists and the strategised. Strategy has status and a political context. Some managers think that a strategy is now what is known as a vision or mission statement or even both. For example Coca-Cola's vision of putting a coke within easy reach of every consumer in the world or Komatsu's vision of encircling its main competitor – Caterpillar.

Such an approach limits the scope of strategy to the long-range aim of the organisation and does not include how the vision can or will be achieved.

Including vision statements as one part of an organisation's strategy communication is important, but we do not accept a view of strategy that fails to include how the strategy is to be achieved. For us the scope of strategy is captured in the following definition:

.. the determination of the basic long-term goals and the objectives of an enterprise, and the adoption of courses of action *and* the allocation of resources necessary for carrying out these goals.

Levels of strategy?

Such a broad definition of the scope of strategy brings its own problems. For example '... the adoption of courses of action and the allocation of resources ...' occurs across the enterprise and in support of a variety of distinct strategic decisions. Such strategic decisions can range from 'what business should we be in?' to 'how can manufacturing contribute to the competitive advantage of this business?' Recognising this has led to the idea of a hierarchy of strategy with three major levels:

- Corporate strategy – what set of businesses should we be in?
- Business strategy – how should we compete in this business?
- Functional strategy – how can this function contribute to the competitive advantage of this business?

These levels are those most commonly met in practice and it is important to identify the strategy hierarchy in your situation. Other members of that hierarchy may rightly temper and limit your strategic choices.

Manufacturing's contribution to the competitive advantage of the business is usually determined by the needs of business strategy and, ideally, with other functional strategies, especially development, marketing and finance.

Under certain situations manufacturing can supply performance and/or capabilities that determine parts of business and marketing strategy. For example:

1. Manufacturing may have developed a process that provides your products with a specification superior to that of competitors – one for which

there may be a choice between gaining market share by matching competitor prices or taking enhanced profits by charging a premium price.

2. Superior specification need not necessarily relate to a product's technical specification. It may be, for instance, that Manufacturing offers customers a very fast turnaround on products to their specification.

One part of the manufacturing strategy process described identifies Manufacturing's objectives, and this involves all other functions. For details see Section 4, Part 2.

Another part of the process traces the connections between Manufacturing's strategy and other levels of the strategy hierarchy. See Section 4, Part 3.

How and when do strategies arise?

The term 'planning' is most usually invoked when the subject of strategy arises. This is a logical view of strategy formation where managers analyse their customers' needs, their competitors, environment (opportunities and threats), and their internal strengths and weaknesses.* They then identify action plans which will use the organisation's strengths to exploit opportunities while minimising its vulnerability to threats. The approach assumes that implementation only occurs after systematic, comprehensive analysis and comparison of alternatives which are mainly judged by financial measures.

When strategies arise in this way, they are called 'intended' strategies, see Figure 1. When they are implemented, they become 'deliberate' strategies. And when they fail to be implemented they are known as 'unrealised' strategies. Figure 1 illustrates these strategies and also 'emergent' strategy which can arise outside of any plan. In practice totally deliberate or totally emergent strategies are most unlikely; they are best viewed as the ends of a continuum along which real strategies lie.

Managers know intuitively that all strategy does not arise from rational planning. Strategy can and does emerge apparently by chance: it can come from experiments by line managers, manufacturing engineers, designers and workers as well as corporate strategists, managing directors and owners. One part of the approach will help identify where strategy arises in your organisation. For example, how much arrives as instructions from above and how much from ideas within Manufacturing. For further details see Section 4, Part 3.

But when do emergent strategies arise? Emergent strategies seem to appear from nowhere, perhaps from a series of seemingly operational actions. Such strategies may therefore form at any time through

* The companion book *Competing through Competences* deals comprehensively with analysing a firm's strengths and weaknesses.

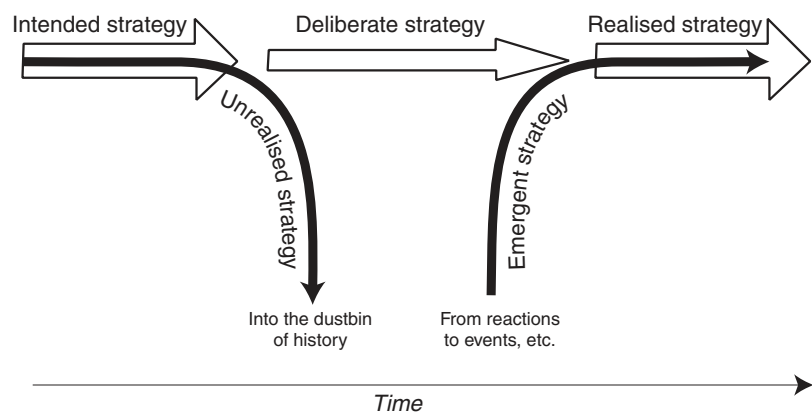


Figure 1. Intended and emergent strategies (after Mintzberg, H. and Waters, J.A. Of strategies deliberate and emergent, *Strategic Management Journal*, 6, 257–272 1985)

apparently operational decisions probably with little awareness of their strategic significance at the time they were taken.

So strategy development can occur when managers and strategists sit down with the intention of developing strategy. It also occurs on the run, for example, with an operational attempt to provide work for an emptying factory by quoting for an unusual order that might have been rejected in better times.

The strategy-making proposed here takes into account the reality of strategy development by providing tools that can be adopted in day-to-day management to capture strategy ideas and place operational decisions in a strategic context. See Section 4, Parts 5 and 6.

How can a strategy be recognised?

Strategy is often seen by line managers as a vague concept, lacking real substance. This is because in their organisation the scope of strategy is limited to objectives. In such an environment, strategy may be viewed with cynicism and may remain on a set of overhead transparencies, unrealised. So, how can you recognise your strategy?

First you may have a plan – an intended strategy. Your plan is one part of your strategy. You may also have some objectives to meet – these are another part of your strategy. But most of your strategy is all around you in the machines you have (and perhaps cannot afford to replace) or the production control systems you use (and that might not work very well). They are the result of past strategic decisions and implemented actions. From these actions, your realised strategy can be deduced. The picture from this method of analysis may show either an ad hoc or a rational pattern of decisions and actions. Most importantly, it will show a practical perspective on the strategies being pursued in your company, a perspective that real managers appreciate.

Your realised strategy can therefore be recognised from the patterns in what has been implemented. Future or intended strategy can be recognised from what is planned to be implemented.

Within the approach, one step is to identify Manufacturing's realised strategy from patterns in the decisions and actions in manufacturing's strategic decision areas. See Section 4, Part 3.

So much for strategy in general. Now let us examine what a manufacturing strategy is all about.

1.2 What is manufacturing strategy?

Manufacturing strategy

There is often little shared understanding among general managers and senior Manufacturing managers about the nature of Manufacturing strategy. The definitions used in our strategy-making process are set out in this section. This is followed by reasons why there is no common agreement on the constituents of a manufacturing strategy. First our definition:

A manufacturing strategy is defined by a pattern of actions, both structural and infrastructural, which determine the capability of a manufacturing system and specify how it will operate to meet a set of manufacturing objectives which are consistent with overall business objectives.

This definition draws attention to three core notions associated with Manufacturing strategy :

- Strategy can be recognised as a pattern of actions, as described above.
- Consistency between manufacturing objectives and business objectives is essential
- A set of structural and infrastructural decision areas exist that encompass all manufacturing strategy decisions

The last two notions need elaboration.

Manufacturing objectives

The supportive relationship between manufacturing and business strategy has already been described. It is now time to illustrate the kinds of manufacturing objectives that result from this relationship. Manufacturing's objectives normally fall into four categories :

- Cost. For example, a cost base reducing at a certain rate.
- Quality. Which can be measured in a myriad of ways from warranty returns to production yields.

- Flexibility. Which can be specified in many dimensions from the speed with which a 25% capacity increase can be implemented to the number of different products that can be made in one shift without incurring extra costs.
- Time. For example, throughput time or order leadtime.

There is a debate between, on the one hand, those who believe, that it is impossible for Manufacturing to offer at one and the same time, wide variety, low cost and high quality; and, those on the other, who will have none of this defeatist nonsense. It has been assumed for a long time that trade-offs between manufacturing objectives are a fact. One pragmatic academic with much practical experience quoted a wise production manager who was pressed for an early delivery: 'Do you want it good or do you want it Tuesday?'

This is the traditional defence of the Manufacturing manager – but is it valid? Richard Schonberger of World-Class fame* believes it is not valid. In fact, there is evidence to support Schonberger's view, providing that we look to the long term. That is, there may be a trade-off now, but it need not necessarily be so in the future.

By attention to quality then cost, then flexibility over several years, some Japanese manufacturers seem to have transcended traditional trade-off assumptions.

A practical result of this debate is that general managers and Marketing managers are no longer so ready to accept the trade-off arguments put to them by Manufacturing managers. See Section 4, Part 2.

Strategic decision areas

These are the areas that must be addressed in developing a manufacturing strategy. They are well agreed. A typical list is given below:

Structural decision areas

Capacity – capacity flexibility, shift patterns, temporary subcontracting policies.

Facilities – the size, location and focus of manufacturing resources.

Manufacturing process technology – degree of automation, technology choices, configuration of equipment into lines, cells, etc., maintenance policies and the potential for developing new processes in-house.

Vertical integration – strategic make versus buy decisions, supplier policies, extent of dependence on suppliers.

Infrastructural decision areas

Organisation – structure, accountabilities and responsibilities.

* Schonberger, R.J. (1986) *World Class Manufacturing: The Lessons of Simplicity Applied*, Free Press, NY.