

FUNCTIONAL STRATEGIES AND THE EMERGING PARADIGM

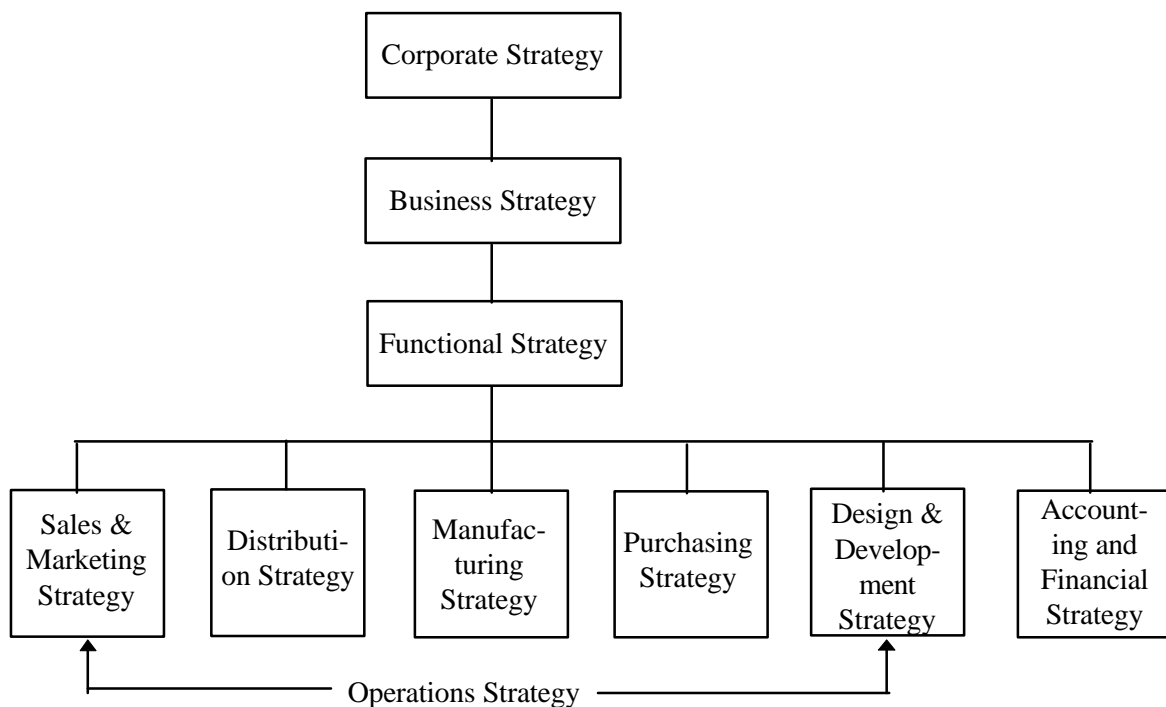
INTRODUCTION

All organizations, regardless of their size, must perform certain functions — production, marketing, finance, research and development and so on. The **operations** function, also called the production function, is one of three primary functions within a business, the other two being **finance** and **marketing**.

Once grand and generic strategies are developed, management must turn its attention to formulating and implementing strategies for each functional area. Here, the manager should not view the strategy of one functional area in isolation, because it is the extent to which all of the functional tasks mesh smoothly that determine the effectiveness of the generic strategy.

Traditionally, companies tended to place emphasis on the finance and marketing functions. Nowadays, the operations function is recognized as the most important function to gain a competitive position. **Exhibit 5-1** shows the relationships among corporate strategy, business strategy, functional strategy and operations strategy.

Exhibit 5-1: The relationships among Corporate Strategy, Business Strategy, Functional Strategy and Operations Strategy



Overall strategic success requires that all functional activities be tightly integrated so that their operations mesh smoothly with one another. An organization that is able to mesh its functional strategies smoothly is more likely to gain a competitive advantage based on superior quality of design, quality of conformity, customer service, speed and quality of performance. This requires a firm to redesign its processes into a cross-functional system.

Organizational capability is important to the sustainability of competitive advantage. It is a firm's ability to achieve particular tasks and activities. As businesses are typically organized along functional lines, organizational capabilities can be described and classified by functional area. **Exhibit 5-2** suggests some examples of functional capabilities.

Organizational capabilities are typically the result of complex patterns of coordination among different functions. If a firm possesses resources and capabilities which are superior to those of competitors, it should be possible for it to establish a competitive advantage.

PURCHASING AND MATERIAL MANAGEMENT

The purchasing function is to identify potential suppliers, evaluate them, invite bids and price quotations, negotiate prices and terms of payment, place orders, follow up orders, inspect incoming shipments, and pay suppliers.

The purchasing function has always been considered an internal service organization. Under the emerging paradigm, the role of the purchasing function has become increasingly important. More and more companies consider the role of purchasing critical to improving quality. Suppliers are part of the value chain of a firm to deliver quality products and services to the end users. A quality supplier can avoid the introduction of defects into the company's production process.

Exhibit 5-2: The Managing Capabilities for Different Functions

Functions	Differentiation Opportunity
Purchasing	<ul style="list-style-type: none"> • Quality of incoming materials required.
Design	<ul style="list-style-type: none"> • Improved product quality and functionality of design. • Ease of maintenance. • Quicker response to customer-requested design changes.
Manufacturing	<ul style="list-style-type: none"> • Insure dependability and consistency in quality, delivery, and service to customers. • Develop flexible operations to respond rapidly to changes in products and markets. • Reduce waste and inefficiency.
Delivery	<ul style="list-style-type: none"> • Speed in filling customer orders. • Reliability in meeting promised delivery.
Human Resources	<ul style="list-style-type: none"> • Improve training and motivation. • Increase customer service capability.
Information Systems	<ul style="list-style-type: none"> • Permit responsiveness to the needs of specific customers.
Accounting	<ul style="list-style-type: none"> • Produce strategic cost information to help to make the right decisions.
Marketing	<ul style="list-style-type: none"> • Build customer-relationships to retain customers forever.
Service	<ul style="list-style-type: none"> • Provide pre-sale information rapidly. • Provide after-sale customer service regularly.

The illusion of multiple sources leading to assurance of supply has been replaced by reduced-source or single-source strategies. Far more emphasis is placed on whether a supplier can meet the company's customer-driven specifications on a continuous basis.

In the emerging paradigm, the purchaser's role is to serve as the **team leader** of multiple functions within his company (engineering, quality and production). The team is charged with supplier selection as well as with providing the supplier with appropriate training. The buyer is required to provide the supplier information, such as drawings, specifications, and required dates that will allow the supplier to provide quality products or services as needed.

The concept of vertical integration (developing all technologies in-house) is no longer economical for most companies. The complexity of many of today's products necessitates more use of suppliers' technology. The use of suppliers in the design stages of a product not only takes advantage of the supplier's expertise and technology, but also provides an opportunity for supplier input. This input allows a supplier to effectively utilize the supplier's manufacturing processes in the final design of the product.

In the Just-in-Time (JIT) environment, the purchasing function is the first step in the materials management process. From the materials management perspective, purchasing, the operation of storage and warehouse facilities, and the control of inventory are interrelated functions. Using this technique, goods are delivered just in the time they are needed. Such a system holds inventory, storage and warehousing costs to a minimum.

MARKETING

Marketing consists of four strategic considerations: products/services, pricing, channels of distribution/location of outlets, and promotion.

In the traditional mass marketing approach, a company tried to meet every customer's needs with one product. Customers were grouped according to macro-segmentation, such as age, income or education. However, as customer requirements are now recognized to be different, mass markets are dissolving into hundreds of micro-markets characterized by different customers purchasing different products in different channels and communicating differently with competing companies. The real challenge of the marketer is how to satisfy customer needs in many micro-markets.

In the new paradigm, the role of marketing is **to develop a total communication system** that provides customer value to the maximum effect, for the building, maintenance and growth of broad-based customer relationships. It requires that firms consider the following strategic decisions:

- Maximizing marketing mix through total quality.
- Providing total business solutions.
- Enhancing customer value with quality and service.
- Developing customer loyalty.
- Developing a planned customer care program.
- Adopting relationship marketing.
- Identifying opportunities for improvement in quality of design, quality of conformance and quality of performance.
- Developing marketing plans based on quality, cost efficiency, delivery and flexibility.

This new concept of marketing requires a cross-functional system which leads to the company's research, development engineering, and production capabilities being aligned to develop a product and a marketing mix to match customer requirements.

No longer will marketing be regarded merely as a separate function within an organization to deal with external customers. Customer satisfaction requires that 'internal marketing' adapt a quality-focus to build up a customer-supplier relationship for all employees. This customer-supplier relationship will also extend to external suppliers, which is referred to as 'external reverse marketing'.

The purpose of marketing in the new paradigm is not only to satisfy the needs of external customers, but also to satisfy the needs of all stakeholders of a firm. For example, in order to satisfy the needs of the community, 'environmental marketing' will be required.

HUMAN RESOURCE MANAGEMENT

The *human resource management* functions include such major activities as planning for future resource needs, recruiting personnel, placing people in the job, compensating them, evaluating their performance, developing them into more effective employees, and enhancing their work environment.

In the new paradigm, the human relationship in work and its result on **quality** have become more emphasized. Personal knowledge, teamwork, security and personal involvement are among the key factors that lead to maximizing human potential and capital.

People are deployed in the organizational structure to do the work. Together with their supervisors, they use human resource management systems to make sure that human resource realities serve the business goals. Hence, a firm must create a structure that serves the business by optimizing information sharing, decision making and work flow.

Since people constitute a vital strategic resource in the 90s, human resource planning and development has come to be recognized as a critical function. People resources must be aligned with such resources as money, technology, space, time and information. Companies that manage their human resources

effectively have a distinct competitive edge. They establish comprehensive and viable HR policies and management systems and implement them consistently, guided by their people-oriented mission, vision and values.

In order to develop people, a firm must commit to the following items:

- A plan for socializing new hires into the organization strategy and culture.
- A business-enhancing incentive and reward system.
- An effective recruitment system .
- A system of career paths.
- A win-win approach to labor relations.
- An effective training and education system.
- A human assets framework and audit process.
- An open communication and feedback system.
- An effective retention and separation process.

RESEARCH AND DEVELOPMENT

Research and development (R&D) has two basic components: product/service R&D and process R&D. The quality of design depends on the capability of the R&D. In today's competitive environment, product life-cycles become shorter and shorter, so product design should not only emphasize quality, but also it must be developed faster than the competition. It has been estimated by various experts that product design drives as much as 85 percent of total life-cycle costs.

Quality cannot be manufactured into a product. The maximum quality level of a product is determined during product design; manufacturing processes can compromise this maximum quality but can never improve it.

The traditional approach to product design is often referred to as the 'over the wall' method. Each department in the design process operates in sequence, cooperating little with departments before and after it. Marketing gets an idea, develops it and 'throws it over the wall to design'. Product design develops plans and a prototype and then 'throws it over the wall' to manufacturing. Manufacturing tries to come up with a way to make it work and then 'throws the product over the wall' to field sales and service. If problems arise, the design is thrown back over the wall to where it came from. This results in more costs and more delays.

In the emerging paradigm, the method of **concurrent engineering** is used. Concurrent engineering is the integration of many sources of relevant information into a product or service design effort as early as possible, using cross-functional teams with the intent of shortening product development times, lowering total life-cycle costs, and improving customer satisfaction.

The basic principles of design for lowest life-cycle cost are as follows:

- Design for reduced part count.
- Design for fewer processes.
- Design for low-complexity processes.
- Design for minimum part and assembly handling.
- Design for easy access and visibility by operators.
- Eliminate and/or standardize fasteners.
- Design out opportunities for incorrect assembly.
- Design for interlocking parts.

- Design for easy part handling.
- Design one process for minimum transport.

ACCOUNTING

Traditional cost and management accounting has come under increased criticism recently. The root cause of the problems is that many companies have found it to be irrelevant to the new challenges taking place in the real business world.

Traditional cost and management accounting fails to evaluate aspects of organizational excellence such as quality, throughput time, customer satisfaction, delivery time, reliability and innovation. Beside, traditional accounting measurement focuses on cost, which includes 'cost-myopic' behaviors, such as:

- Cutting investment in technology
- Reducing direct labor costs
- Managing by controlling budget variance

Many companies are experimenting with new approaches and techniques aimed at overcoming the problems and irrelevance of traditional cost and management accounting. These new techniques are as follows:

- Cost-of-quality system
- Life-cycle costing
- Activity-based costing
- Activity-based budgeting
- Target costing

- Throughput accounting

Most of the above accounting techniques are **activity-based**. Activity-based accounting is concerned with the cost of indirect activities and their relationship to the manufacture of specific products. The basic technique is to analyze the indirect costs and discover the activities that drive those costs (cost drivers). It is based upon the principle that activities consume resources and products consume activities. It focuses managerial attention on the underlying causes (or drivers) of cost and profitability.

FINANCE

The *finance* function encompasses not only cash management, but also the use of credit and decisions regarding capital investments. Long-term capital investment decisions focus on the allocation of resources, and hence are linked to corporate and business unit strategies.

Traditional financial decisions were based on the short-term payback period method. The payback period method quantifies the period of time it takes before cumulative forecasted cash flows equal the investment. Projects are accepted or rejected based on a cutoff period.

The return-on-investment (ROI) method determines the rate at which accounting profits are returned for an average annual investment. Again, a cutoff value is used to determine project worthiness, where accepted projects are those with a predicted ROI greater than the cutoff ROI.

The net-present-value (NPV) method is to determine if the present value of cash inflow is greater than the present value of cash outflow. All projects producing a positive NPV should be accepted.

However, traditional methods for assessing investment performance are either incomplete or irrelevant. Nowadays, as more and more companies implement TQM to improve quality and reduce costs, most of these

traditional methods have become obsolete. TQM proponents justify their investments by the intangible benefits of such systems.

In the emerging paradigm, more and more companies are using non-financial measurements to justify their investment. These non-financial measurements are built on quality, cost efficiency, time and flexibility. Hence, managers need a more rigorous method of financial analysis that not only values the cash flow implications of cost improvement properly, but also values increased customer satisfaction and the option to invest in future projects that will provide further operational benefits.

To maximize reported profits, a company can seek to spend capital and build inventory to boost sales and drive down costs. A profit orientation causes managers to invest in vertical integration to reduce costs, regardless of the investment's return. Investments that simply return the cost of capital just break even, those returning less, actually destroy shareholder value.

Value-based planning methods provide a more rational framework for linking a corporation's business strategy with its contribution to shareholder value.

INFORMATION SYSTEM

A well-designed *information system* (IS) can benefit all business units' functional areas. An effective IS cannot only reduce internal costs, but also promote differentiation and quality through a faster response to the market's needs. There are several types of IS:

- Management information system
- Decision support system
- Executive information system
- Management support system
- Strategic information system

A computer-based decision support system can allow each functional area to access the information it needs and to communicate electronically with the other functional departments to enhance interdepartmental coordination. In order to link IS with business strategy, we should consider information, applications, processes, skills and competence.

Farming out the IS is prevalent because many companies are unable to keep up with the frequent technological changes in this area. The field of information technology (IT) changes rapidly, but companies must keep up with the trends. In the 1990s, the trends of IT are as follows:

- More open systems (especially for telecommunications and in the operating system).
- Incorporating end-users in the process of deciding what applications and hardware to acquire.
- Greater integration of IT, so that various components and applications work together.
- Growing reliance on applications development tools and techniques.
- Outsourcing everything from specific applications to whole data centers.
- Growing use of client server computing.

When tactical process-oriented tools of JIT/TQM cannot provide the means to break out from the deadlocked market competitive position, many companies now go for 'Business Process Re-engineering' (BPR). BPR is the fundamental rethinking and basic redesign of an entire business system, including processes, jobs, structure, systems and use of IT to achieve better performance in quality, cost efficiency, cycle time and flexibility.

BPR is fueled by changing computing economies and rich feature/functionality/maneuverability technologies which favor network computing over traditional host-centered computing. These technologies include:

- Multimedia and imaging
- E-mail and groupware
- Video conferencing
- Per-based computing
- Mobile computing
- Wireless communication
- Voice processing and speed recognition
- Electronic commerce
- Artificial intelligence
- Object-oriented technologies
- Massive parallelism
- Client/server computing

OPERATIONS FUNCTION

There is an increasing recognition that *operations* must help the firm to achieve a competitive position in the marketplace. Gaining a competitive advantage through improved operations performance requires a strategic response on the part of the operation function. Thus, operations strategy can influence business strategy in a reverse fashion. The purpose of operations strategy is to connect business strategy to decision-making in operations.

Operations management is defined by five key types of decision responsibilities: process, capacity, inventory, workforce, and quality. Changes in the business environment frequently require corresponding changes in operations management.

Traditionally, companies have tended to emphasize finance and marketing, often at the expense of operations. This emphasis has resulted new products which have little customer value, and a 'wheeling and dealing' mentality concerning mergers and acquisitions. However, quality is recognized as a strategic tool to create customer value, as it is recognized now that operations must be linked with the corporation strategy. To gain competitive advantage, operations strategy must be on a top priority level among all other functional strategies.

Operations strategy consists of mission, distinctive competence, objectives, and policies. Objectives are quality, cost efficiency, delivery and flexibility. Policies are the strategic decisions which guide more detailed decision-making (tactics) in the areas of process, capacity, inventory, workforce and quality.

Operation strategies are concerned with operating resources, products and services, operating processes, and output quality, cost, lead times and flexibility. Companies with similar business strategies may have widely different operation strategies, each striving to attain distinctive competence.

Just as the operation strategy must fit into business strategy, operation activities must be carried out in harmony with the rest of the organization. Inputs (resources) are consumed by transformation processes where value-adding operations are performed to yield output goods and services. In developing a competitive operation strategy, we therefore have to look into the following three aspects:

1. Input resources to the operation system.
2. Utilization of the operation system.

3. Cost efficiency of the operation system.

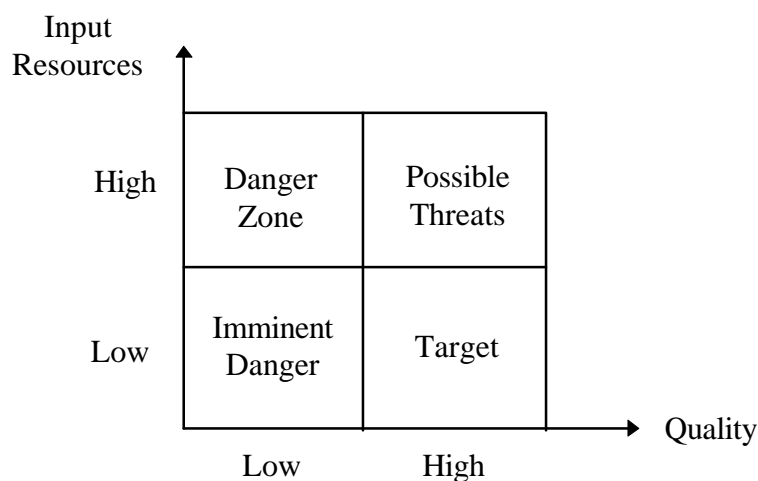
Input resources vs. quality

In many operations, it is unlikely that spending higher resources always means improved quality, because there are a number of factors which act to provide barriers to quality improvement, including:

- Not understanding the needs of the customer
- Confusion in the flow of information, materials and people in the process
- Failure to measure quality
- Failure to measure the right things

The goal of operation strategy is high-quality at low cost. The relationship between input resources and quality is shown in **Exhibit 5-3**.

Exhibit 5-3: Quality and input resources



Consider the segment of low-input resources and low quality. British Telecom is an example of a firm that reduced input resources by cutting the number of service staff, resulting in a fall in service quality. The danger was a fall in market share.

In order to improve service quality, British Telecom subsequently increased the number of workers. However, the company was already in the 'danger zone'.

High-quality and high-input resources also constitute a possible threat to the company profitability. IBM for example, had high-input resources and high-quality, but it could not maintain profitability at levels acceptable to the shareholders. This caused the company to lay off a great number of employees to reduce operation costs.

Xerox, British Airways and Federal Express are good examples of companies having high quality and productivity with low input resources, all achieved through their quality-first strategies. Productivity was raised while reducing input costs by staffing at the appropriate skill level.

The costs of input resources can most easily be influenced by labor efficiency. Reduction of these costs will have to be carried out along with measures to improve labor skills and the efficiency of the maintenance activities.

Utilization vs. Quality

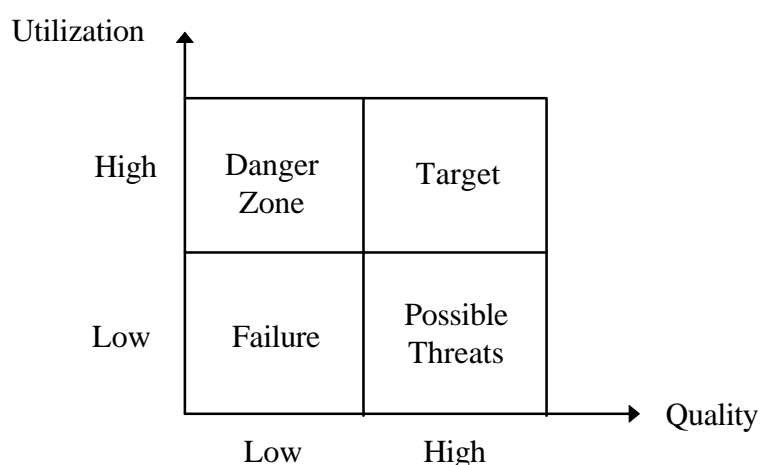
Utilizing the elements of productivity depends on the capacity and positioning of the production system. The capacity to meet the demand load will depend very much on the nature of demand.

The matrix of extremes for utilization and quality is shown in **Exhibit 5-4**. Low utilization and low quality is clearly an indicator of the incipient failure of the operation.

The most likely positions that can be achieved by many companies are high utilization and low quality, or low utilization and high quality. Operations

which find themselves in the high-utilization and low-quality segment, are in danger of facing competition, particularly if their sector of business is being influenced by competitors who rely on quality rather than low prices.

Exhibit 5-4: Utilization and Quality



Those businesses which are in the high-quality, low-utilization segment rely on a low dependence on utilization where the costs are low, or where sufficiently high prices can be charged. However, they have to improve their utilization in order to face a potential future increase in competition and maintain profitability.

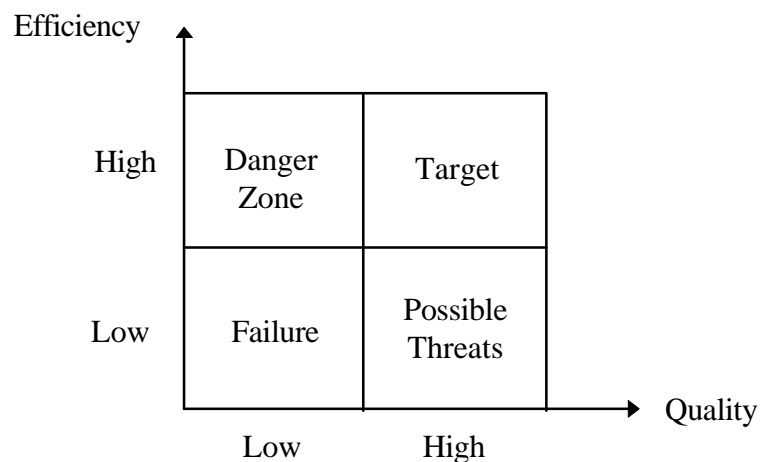
The goal is for a positioning in the upper-right segment where there are high utilization and high quality. It requires good management of capacity into line with demand. Quality standards must be consistently maintained through an appropriate quality management system. A good strategy for the allocation of staff resources is also critical to achieve high utilization.

Efficiency vs. Quality

Efficiency is characterized by reduction of waste of resources and time. Installation of new technology can also improve efficiency and reduce time.

In the matrix of efficiency and quality, shown in Figure 5.5, the most common outcome is low efficiency and low-quality. This segment is clearly an indicator of the failure of the operation.

Exhibit 5-5: Efficiency and quality



Operations which lie in the high-efficiency, low-quality segment, are those whose efficiency affects quality which does not conform to the customers' expectations.

The low-efficiency, high-quality segment may have good-quality products and services. They aim at the higher market segment and charge premium prices. However, low-efficiency may also lead to a reduction in profitability.

The goal is for high efficiency and quality, commensurate with the requirements of the customer. This requires strong vision to change internal organizational systems, structures and skills to improve

efficiency and make savings while not reducing the quality of the performance achieved.