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INFORMATION TECHNOLOGY STRATEGY AND MANAGEMENT

BEST PRACTICES

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Chapter II
Strategic Management Principles

INTRODUCTION

Building on the understanding of the theories and models of firms, this chapter reviews the basic principles of strategic management of business enterprises. First, the basic principles of business strategy are explained. Only through in-depth understanding and diligent application of these principles will business executives be able to make strategic choices and craft an appropriate business strategy and the corresponding value configuration, business model, or e-business model for the firm.

Second, the role of corporate strategy and its relationships with business unit strategies are discussed. The discipline of strategic management is introduced together with the principles of strategy maps—a model which is explained and illustrated by case example of its application by a leading corporation in more detail in Chapter V as part of a strategic alignment discussion.

Third, the principles of strategic planning and the measurement of competitive strategy are described. These tasks ensure a corporate/business strategy is rigorously planned, resourced, and diligently executed to deliver the requisite strategic goals.

Following on from the resource-based and activity-based theories of firms discussed in Chapter I, this chapter describes the corresponding resource-based and activity-based strategies. In addition, with the increasing importance of corporate governance comes the need to ensure due consideration is given to ethics in information technology deployment. Theories for ethics in IT and their incorporation in IT strategy are still emerging. The basic issues for IT strategy developmental consideration are reviewed.

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Fourth, to help managers develop sound business strategies for their firms, the chapter describes nine basic methods for business strategy analysis. From this analysis, firms will be able to analyze the needs for change from comparing the current state to the future target state of the business envisioned by the resultant business strategy.

Finally, to ensure firms will be able to leverage the strategic advantage that Internet technology may able to offer, this chapter continues from Chapter I's discussion of e-business models to explain the basic properties of e-strategies.

BASIC PRINCIPLES OF STRATEGY

Strategy is not about finding the universally best way of competing, nor is it an effort to be all things to every customer. Strategy is about defining a way of competing that delivers unique value in a particular set of uses or for a particular set of customers (Porter, 1985). Indeed, as Thompson and Strickland (2003, p. 3) postulate, "a company's strategy is the game plan management is using to stake out a market position, conduct its operation, attract and please customers, compete successfully, and achieve organizational objectives." To establish and maintain a distinctive strategic positioning, Porter (2001) stipulates that a company needs to follow six fundamental principles:

- It must start with the *right goal*: superior long-term return on investment. Only by grounding strategy in sustained profitability will real economic value be generated. Economic value is created when customers are willing to pay a price for a product or service that exceeds the cost of producing it.
- A company's strategy must enable it to deliver a *value proposition*, or set of benefits, different from those that competitors offer.
- Strategy needs to be reflected in a *distinctive value configuration*. To establish a sustainable competitive advantage, a company must perform different activities than rivals or perform similar activities in different ways.
- Robust strategies involve *trade-offs*. A company must abandon or forego some product features, services, or activities in order to be unique at others.
- Strategy defines how all the elements of what a company does *fit* together. A strategy involves making choices throughout the value configuration that are independent; all a company's activities must be mutually reinforcing.
- Strategy involves *continuity* of direction. A company must define a distinctive value proposition that it will stand for, even if that means foregoing certain opportunities.

Thus, the value configuration or e-business model (described in Chapter I) that the firm will choose can only be determined after the firm has decided on its strategic goal and the distinct value proposition that it intends to deliver to win the target markets it wishes to serve and make profit from. The unique value configuration and strategic resources required to deliver that distinct value proposition are designed as part of the strategy creation process. Only then will it make sense to define the IT strategy, which specified the IT applications and infrastructure required to implement the value configuration and support and integrate the various strategic resources required to deliver the distinct value proposition. This will ensure that the IT strategy is aligned with the business strategy—a

practice which is called *strategic alignment* and the central theme of this book. This practice is described in Chapter V.

Strategy is both a plan for the future and a pattern from the past; it is the match an organization makes between its internal resources and skills (sometimes collectively called competencies) and the opportunities and risks created by its external environments. Strategy is the long-term direction of an organization. Strategy is a course of action for achieving an organization's purpose. Strategy is the direction and scope of an organization over the long term, which achieves advantage for the organization through its configuration of resources within a changing environment and to fulfill stakeholder expectations (Johnson & Scholes, 2002).

Strategy as a plan is a direction, a guide or course of action into the future, a path to get from here to there. Strategy as a pattern is a consistency in behavior over time. Strategy as a position is the determination of particular products in particular markets. Strategy as perspective is an organization's way of doing things (Mintzberg, 1994).

Necessary elements of a *business strategy* include mission, vision, objectives, market strategy, knowledge strategy, and our general approach to the use of information, information systems, and information technology.

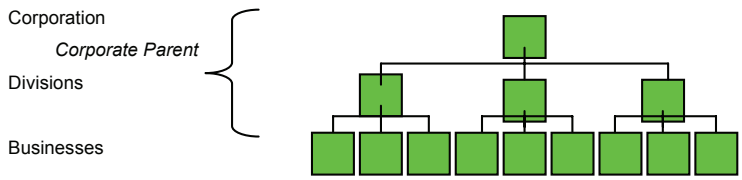
Mission describes the reason for firm existence. For example, the reason for law firm existence is client's needs for legal advice. The mission addresses the organization's basic question of "What business are we in?"' This single essential sentence should include no quantification, but must unambiguously state the purpose of the organization and should just as carefully define what the organization does not do. The mission is an unambiguous statement of what the organization does and its long-term overall purpose. Its primary role is to set a direction for everyone to follow. It may be short, succinct, and inspirational, or contain broad philosophical statements that tie an organization to certain activities and to economic, social, ethical, or political ends. Values are also frequently stated alongside the mission. Three differing examples of missions are: To help people move from one place to another; to provide medical treatment to sick people; and to enable electronic communication between people.

Vision describes what the firm wants to achieve. For example, the law firm wants to become the leading law firm in Norway. The vision represents the view that senior managers have for the future of the organization, so it is what they want it to become. This view gives a way to judge the appropriateness of all potential activities that the organization might engage in. The vision gives a picture, frequently covering many aspects that everyone can identify with, of what the business will be in the future, and how it will operate. It exists to bring objectives to life and to give the whole organization a destination that it can visualize so that every stakeholder has a shared picture of the future aim.

Objectives describe where the business is heading. For example, the law firm can choose to merge with another law firm to become the leading law firm in Norway. Objectives are the set of major achievements that will accomplish the vision. These are usually small in number but embody the most important aspects of the vision such as financial returns, customer service, manufacturing excellence, staff morale, and social and environmental obligations.

Market strategy describes market segments and products. For example, the law firm can focus on corporate clients in the area of tax law.

Figure 2.1. Corporate strategy above other levels (Johnson & Scholes, 2002)



CORPORATE STRATEGY

Corporate strategy is concerned with the strategic decisions at the corporate level of organizations, decisions which may affect many business units. Managers at this level are acting on behalf of shareholders, or other stakeholders, to provide services and, quite possibly, strategic guidance to business units that seek to generate value by interacting with customers. In these circumstances, a key question is to what extent and how the corporate level might add value to what the businesses do or in the least how they might avoid destroying value (Johnson & Scholes, 2002).

A multibusiness company structure may consist of a number of business units grouped within divisions and a corporate center or head office providing, perhaps, legal services, financial services, and the staff of the chief executive. There are different views as to what is meant by corporate strategy and what represents corporate as distinct from business-level strategy. Johnson and Scholes (2002) argue that anything above the business unit level represents corporate activity.

The levels of management above that of business units are often referred to as the corporate parent (Figure 2.1). So, for example, the divisions within a corporation, which look after several businesses act in a corporate parenting role. The corporate parenting role can be as (Johnson & Scholes, 2002):

- **The portfolio manager.** A corporate parent acting as an agent on behalf of financial markets and shareholders with a view to enhancing the value attained from the various businesses in a more efficient or effective way than financial markets could. Their role is to identify and acquire undervalued assets or businesses and improve them.
- **The restructurer.** A corporate parent identifying restructuring opportunities in businesses and having the skills to intervene to transform performance in those businesses. They may well hold a diverse range of businesses within their portfolio. However, they do have a limited role at the business-unit level, which is to identify ways in which businesses can be turned around or fitness improved and to manage the restructuring period.
- **The synergy manager.** Synergy is often seen as the main reason for the existence of the corporate parent. Potentially, synergy can occur in situations where two or more activities or processes complement each other, to the extent that their combined effect is greater than the sum of the parts. In terms of corporate strategy, the logic is that value can be enhanced across business units. This can be done in a number of

ways: activities might be shared, and there may exist common skills or competences across businesses.

- **The parental developer.** A corporate parent seeks to employ its own competences as a parent to add value to its businesses. Here, the issue is not so much about how it can help create or develop benefits across business units or transference between business units, as in the case of managing synergy. Rather, parental developers have to enhance the potential of business units.

From a strategic planning perspective, corporate strategy will depend on the main role of the corporate parent. The portfolio manager is not directly intervening in the strategies of business units. Rather, they are setting financial targets, making central evaluations about the well-being and future prospects of such businesses, and investing or divesting accordingly. The restructurer is directly intervening in business units, as it is likely that the business restructuring opportunities that will be sought will be those that match the skills of the corporate center. The synergy manager will initiate activities and develop resources that are shared across business units. Managers in the businesses have to be prepared to cooperate in such transference and sharing (Johnson & Scholes, 2002).

Finally, the parental developer has to enhance the potential of business units in various ways. Suppose, for example, it has a great deal of experience in globalizing domestically based businesses; a valuable brand that may enhance the performance or image of a business; or perhaps specialist skills in financial management, brand marketing, or research and development. If such parenting competences exist, corporate managers then need to identify a parenting opportunity—a business or businesses not fulfilling their potential but where improvement could be made by the application of the competences of the parent (Johnson & Scholes, 2002).

STRATEGIC MANAGEMENT

Strategy without actions has no value to the company. To realize the future that the strategy aims to effect, the company must "manage" the strategy from formulation to implementation and benefits realization. This discipline is called *strategic management,* which includes understanding the strategic position of an organization, strategic choices for the future, and *turning strategy into action*. Understanding the strategic position is concerned with impact on strategy of the external environment, internal resources and competences, and the expectations and influence of stakeholders. Strategic choices involve understanding the underlying bases for future strategy at both the corporate and business unit levels and the options for developing strategy in terms of both the directions in which strategy might move and the methods of development. Translating strategy into action is concerned with ensuring that strategies are working in practice. A strategy is not just a good idea, a statement, or a plan. It is only meaningful when it is actually being carried out (Johnson & Scholes, 2002). The discipline of developing the strategy into a series of action plans is called *strategic planning.* Strategic planning is a subset of the strategic management discipline. It focuses on prioritizing resources to the selected action plans, and coordinating and controlling the activities to ensure the envisioned future will be created. This is described in detail in the next section.

Thompson and Strickland (2003, p. 6) stipulate that strategic management is a combined process of strategy making and strategy implementation, which comprises five interrelated managerial tasks:

1. Develop strategic vision and business mission—set the long-term direction and define what the company is trying to become so as "to infuse the organization with a sense of purposeful action."
2. Set objectives—translate the strategic vision into a set of (measurable) business outcomes that the company must accomplish.
3. Craft a strategy to achieve the objectives—the game plan to realize the business outcomes.
4. Implement and execute the chosen strategy efficiently and effectively to realize the desired business outcomes.
5. Evaluating performance, monitoring new developments (such as external market, industry, regulatory, and technology developments), and initiating corrective adjustments in vision, strategic objectives, strategy, or execution, as required, as a result of the actual experience, changing conditions, new ideas, and new opportunities.

As these tasks are interrelated, they need not be done sequentially. Strategic management is an ongoing process—not a start-stop event (Thompson & Strickland, 2003). Strategy and its implementation will adapt with performance experience and internal and external business environmental changes.

Generally, there are some characteristics of strategic decisions that are usually associated with the word *strategy* (Johnson & Scholes, 2002):

- Strategy is likely to be concerned with long-term direction of an organization.
- Strategic decisions are normally about trying to achieve some advantage for the organization over competition.
- Strategic decisions are likely to be concerned with the scope of an organization's activities.
- Strategy can be seen as the matching of the resources and activities of an organization to the environment in which it operates.
- Strategy can also be seen as building on or expanding an organization's resources and competences to create opportunities or to capitalize on them.
- Strategies may require major resource changes for an organization.
- Strategic decisions are likely to affect operational decisions.
- The strategy of an organization is affected not only by environmental forces and resource availability but also by the values and expectations of those who have power in and around the organization.

The notion of *strategic fit* is developing strategy by identifying opportunities in the business environment and adapting resources and competences so as to take advantage of these. The correct *positioning* of the organization is important, for example, in terms of the extent to which it meets clearly identified market needs. *Strategic position* is concerned with impact on strategy of the external environment, internal resources and competences, and the expectations and influence of stakeholders (Johnson & Scholes, 2002).

Strategy development is linked to strategic planning procedures. They represent the design approach to managing strategy, which views strategy development as the deliberate positioning of the organization through a rational, analytic, structured, and directive process. *Strategy as design* is an important strategy lens. Alternative and supplementing lenses are strategy as experience and strategy as ideas. *Strategy as experience* suggests that strategies develop in an adaptive fashion and change gradually. Strategy is here understood in terms of continuity; once an organization has adopted a particular strategy, it tends to develop from and within that strategy, rather than fundamentally changing direction. *Strategy as ideas* sees strategy as the emergence of order and innovation from the variety and diversity that exists in and around an organization. New ideas, and therefore innovation, may come from anywhere in an organization or from stimuli in the world around it (Johnson & Scholes, 2002).

Strategy development and strategy formation is also concerned with concepts such as strategic leadership, organizational politics, strategic incrementalism, the learning organization, imposed strategy, and multiple processes of strategy development. A *strategic leader* is an individual upon whom strategy development and change are seen to be dependent. Managers often suggest that the strategy being followed by the organization is really the outcome of *organizational politics* in terms of the bargaining and power politics that go on between important executives. Managers may have a view of where they want the organization to be in years to come and try to move towards this position incrementally, where *strategic incrementalism* can be thought of as the deliberate development of strategy by learning through doing over time. The concept of the *learning organization* and strategy as a learning process implies continual regeneration of strategy from the variety of knowledge, experience, and skills of individuals with a culture, which encourages mutual questioning and challenge around a shared purpose or vision. Forces or agencies external to the organization may cause *imposed strategy* that the organization has to follow. Different lenses and different strategy development processes may cause *multiple processes of strategy development*, since there is no right way in which strategies are developed (Johnson & Scholes, 2002).

At the beginning of this chapter, strategy is defined as a course of action for achieving an organization's purpose. Where managers have a clear understanding of their organization's purpose, this can provide strong guidance during processes of strategic thinking, strategy formation, and strategic change. The *organizational purpose* can function as a fundamental principle, against which strategic options can be evaluated. Organizational purpose can be defined as the reason for which an organization exists. The broader set of fundamental principles giving direction to strategic decision making, of which organizational purpose is the central element, is referred to as the *corporate mission*. The corporate mission may have elements such as organizational beliefs, organizational values, and business definition (Wit & Meyer, 2004).

Some authors distinguish between deliberate strategy and emergent strategy as two alternative processes of strategy formulation. According to Christensen and Raynor (2003), *deliberate strategy*—such as strategic planning—is the appropriate tool for organizing action if three conditions are met. First, the strategy must encompass and address correctly all of the important details required to succeed, and those responsible for implementation must understand each important detail in management's deliberate strategy. Second, if the organization is to take collective action, the strategy needs to make as much sense to all employees as they view the world from their own context as it does to top management, so

that they will all act appropriately and consistent. Finally, the collective intentions must be realized with little unanticipated influence from outside political, technological, and market forces.

Emergent strategy bubbles up from within the organization and is the cumulative effect of day-to-day prioritization and investment decisions made by middle managers, engineers, salespeople, and financial staff. These tend to be tactical, day-to-day operating decisions that are made by people who are not in a visionary, futuristic, or strategic state of mind (Christensen & Raynor, 2003). Emergent strategy is also often the result of the dynamically readjusted strategy in response to external changing competitive market forces and conditions (Marchand, Kettinger, & Rollins, 2001).

Some authors distinguish between intended strategy and realized strategy. *Intended strategy* is an expression of desired strategic direction deliberately formulated and planned by managers. *Realized strategy* is the strategy actually being followed by an organization in practice. *Strategic drift* occurs when an organization's strategy gradually moves away from relevance to the forces at work in its environment (Johnson & Scholes, 2002).

As we will see throughout this book, strategic alignment is the key to successful strategic management. Strategic alignment calls for methods for analysis, choice, and implementation. A general method is available in terms of *strategy maps* as defined by Kaplan and Norton (2004), which represent interesting perspectives on strategy development and strategy formation. Strategy maps are used to describe how the organization creates value, and they were developed for the balanced scorecard. The strategy map is based on several principles:

- **Strategy balances contradictory forces.** Investing in intangible assets for long-term revenue growth usually conflicts with cutting costs for short-term financial performance.
- **Strategy is based on a differentiated customer value proposition.** Satisfying customers is the source of sustainable value creation.
- **Value is created through internal business processes.** The financial and customer perspectives in strategy maps and balanced scorecards describe the outcomes, that is, what the organization hopes to achieve.
- **Strategy consists of simultaneous, complementary themes.** Operations management, customer management, innovation, regulations, and societal expectations deliver benefits at different points in time.
- **Strategic alignment determines the value of intangible assets.** Human capital, information capital, and organization capital are intangible assets.

We will return to strategy maps in Chapter V. Understanding the strategic position of an organization and considering the strategic choices open to it are of little value unless the strategies managers wish to follow can be turned into organizational action. Strategies cannot take effect until they take shape in action. Such action takes form in the day-to-day processes and relationships that exist in organizations; and these need to be managed desirably in line with the intended strategy (Johnson & Scholes, 2002). The critical first step of turning strategy into action is called strategic planning.

STRATEGIC PLANNING

Translating strategies into action is no simple task. First, it is important to organize for success by introducing appropriate structure, processes, relationships, and boundaries. Second, it is important to enable success by managing people, managing information, managing finance, managing technology, and integrating resources. Finally, strategic change has to be managed by diagnosing the change situation, applying relevant styles and roles, and implementing levers for managing strategic change, such as organizational routines and symbolic processes (Johnson & Scholes, 2002).

The design school of strategic planning is built on the belief that strategy formation is a process of conception—the use of a few basic ideas to design strategy. Of these, the most essential is that of congruence, or fit, between external and organizational factors. A number of premises underlie the design school (Mintzberg, 1994):

1. Strategy formation should be a controlled, conscious process of thought.
2. Responsibility for the process must rest with the chief executive officer; that person is *the* strategist.
3. The model of strategy formation must be kept simple and informal.
4. Strategies should be unique: the best ones result from a process of creative design.
5. Strategies must come out of the design process fully developed.
6. The strategies should be made explicit and, if possible, articulated, which means they have to be kept simple.
7. Finally, once these unique, full-blown, explicit, and simple strategies are fully formulated, they must then be implemented.

Numerous researchers and executives advocate strategic planning. They argue that an explicit planning process rather than haphazard guesswork results in the collection and interpretation of data critical to creating and maintaining organization–environment alignment. They argue that planning generally produces better alignment and financial results than does trial-and-error learning (Miller & Cardinal, 1994).

Despite the intuitive appeal of these arguments, several researchers have countered that explicit strategic planning is dysfunctional or, at best, irrelevant. One of the most widely circulated criticisms is that planning yields too much rigidity. Proponents of the rigidity hypothesis maintain that a plan channels attention and behavior to an unacceptable degree, driving out important innovations that are not part of the plan. Given that the future parameters of even relatively stable industries are difficult to predict, these theoreticians consider any reduction in creative thinking and action dysfunctional (Miller & Cardinal, 1994).

Miller and Cardinal (1994) developed a model that might explain the inconsistent planning–performance findings reported in previous research. Results from the model suggest that strategic planning positively influences firm performance. Researchers who have concluded that planning does not generally benefit performance appear to have been incorrect.

Strategic planning procedures represent the design approach to managing strategy. Such procedures may take the form of highly systematized, step by step, chronological procedures involving many different parts of the organization.

Some of the key concepts in strategic planning are future thinking, controlling the future, decision making, integrated decision making, and a formalized procedure to

produce an articulated result in the form of an integrated process of decisions. *Strategic planning is the process of deciding on the projects that the organization will undertake and the approximate amount of resources that will be allocated to each program over the next several years.*

Planning represents the extent to which decision makers look into the future and use formal planning methodologies. Planning is something we do in advance of taking action; it is anticipatory decision making. We make decisions before action is required. The focus of planning revolves around objectives, which are the heart of a strategic plan (Mintzberg, 1994).

The whole purpose of strategizing is to give organizations direction, instead of letting them drift. Organizations cannot act rationally without intentions; if you do not know where you are going, any behavior is fine. By first setting a goal and then choosing a strategy to get there, organizations can get organized. A structure can be chosen, tasks can be assigned, responsibilities can be divided, budgets can be allotted, and targets can be set. Not unimportantly, a control system can be created to measure results in comparison to the plan so that corrective action can be taken (Wit & Meyer, 2004).

Another advantage of the planning approach to strategy formation is that it allows for the formalization and differentiation of strategy tasks. Because of its highly structured and sequential nature, strategic planning lends itself well to formalization. The steps of the strategic planning approach can be captured in planning procedures to enhance and organize the strategy formation process. In such planning procedures, not all elements of strategy formation need to be carried out by one and the same person but can be divided among a number of people. The most important division of labor is often between those formulating the plans and those implementing them (Wit & Meyer, 2004).

We will return to strategic planning in Chapter IV to address its critical success factor.

MEASUREMENT OF COMPETITIVE STRATEGY

The measurement of competitive strategy is an important issue in strategic management. Porter (1985) first defined three generic competitive strategies: cost leadership, differentiation, and focus. Attempts to measure these strategies seek to capture differences in the extent to which firms emphasize various competitive dimensions. Competitive strategy is traditionally measured at the business level. Yet businesses often consist of product portfolios in which a different competitive strategy is used for each product. Thus, business-level measures may not be good indicators of product-level competitive strategy. Further, business-level analyses have found combined cost-leadership and differentiation strategies. But if competitive strategies are formulated at the product level, it is unclear whether combined strategies exist at that level.

Nayyar (1993) examined these issues. He found that business-level measures are not good indicators of product-level competitive strategies. He also found no evidence supporting the existence of combined competitive strategies at the product level. He found that cost-leadership and differentiation are mutually exclusive at the product level. They do not appear to be two dimensions of any strategy. Previously used business-level measures tend to identify combined competitive strategies, a result that may reflect the existence of product portfolios, rather than combined competitive strategies.

These findings suggest a need for a reexamination of the concept of competitive strategies. It appears that firms use competitive strategies for products and then construct product portfolios to obtain overall cost, differentiation, and preemption advantages. Within any industry, different firms may construct different product portfolios.

In his measurement of competitive strategy, Nayyar (1993) used the following competitive dimensions associated with a cost-leadership strategy: operating efficiency, cost control, pricing below competitors, managing raw materials cost and availability, trade sales promotion, manufacturing process improvements and innovation, and product cost reduction. The following competitive dimensions were associated with a differentiation strategy: new product development, extensive customer service, building and maintaining brand equity, marketing innovation, influence over distribution channels, targeting high-priced segment(s), advertising, building and maintaining the firm's reputation, providing product(s) with many features, and premium product quality. The following competitive dimensions were associated with a focus strategy: serving special market segment(s) and manufacturing and selling customized products.

Instead of measuring competitive strategy in terms of alternative strategies, Julien and Ramangalahy (2003) measured competitive strategy in terms of intensity. The more competitive a strategy is, the more intense is the competitive strategy. The intensity was measured in terms of marketing differentiation, segmentation differentiation, innovation differentiation, and products service. Marketing differentiation is based on competitive pricing, brand development, control over distribution, advertising, and innovation in terms of marketing techniques. Segmentation differentiation relies on the ability to offer specialized products to specific customer groups. Innovation differentiation is based on the ability to offer new and technologically superior products. Product service is based on the quality of the products and services provided by customers.

Competitive strategy must drive other strategies in the firm such as knowledge strategy. Executives must be able to articulate why customers buy a company's products or services rather than those of its competitors. What value do customers expect from the company? How does knowledge that resides in the company add value for customers? Assuming the competitive strategy is clear, managers will want to consider three more questions that can help them choose a primary knowledge management strategy (Hansen, Nohria, & Tierny, 1999):

- *Do you offer standardized or customized products?* Companies that follow a standardized product strategy sell products that do not vary much, if at all. A knowledge management strategy based on reuse fits companies that are creating standardized products.
- *Do you have a mature or innovative product?* A business strategy based on mature products typically benefits most from a reuse of existing knowledge.
- *Do your people rely on explicit or tacit knowledge to solve problems?* Explicit knowledge is knowledge that can be codified, such as simple software code and market data.

Strategic planning in a turbulent environment is challenging. The challenge of making strategy when the future is unknowable encourages reconsideration of both the process of strategy formulation and the nature of organizational strategy. Attempts to reconcile

systematic strategic planning with turbulent, unpredictable business environments included the following (Grant, 2003):

- *Scenario planning.* Multiple scenario planning seeks not to predict the future but to envisage alternative views of the future in the form of distinct configurations of key environmental variables. Abandoning single-point forecasts in favor of alternative futures implies foresaking single-point plans in favor of strategy alternatives, emphasizing strategic flexibility that creates option values.
- *Strategic intent and the role of vision*. If uncertainty precludes planning in any detailed sense, then strategy is primarily concerned with establishing broad parameters for the development of the enterprise with regard to domain selection and domain navigation. Uncertainty requires that strategy is concerned less with specific actions and the more with establishing clarity of direction within which short-term flexibility can be reconciled with overall coordination of strategic decisions.
- *Strategic innovation*. If established companies are to prosper and survive, new external environments require new strategies. Strategic planning may be a source of institutional inertia rather than innovation. Yet, systematic approaches to strategy can be encouraging to managers to explore alternatives beyond the scope of their prior experiences. Strategic inertia may be more to do with the planners than of planning.
- *Complexity and self-organization*. Often faced with a constantly changing fitness landscape, maximizing survival implies constant exploration, parallel exploration efforts by different organizational members, and the combination of incremental steps. A key feature of strategic processes is the presence of semistructures that create plans, standards, and responsibilities for certain activities, while allowing freedom elsewhere. One application of the semistructure concept to strategy formulation concerns the use of simple rules that permit adaptation while establishing bounds that can prevent companies from falling off the edge of chaos.

Hopkins and Hopkins (1997) investigated relationships among managerial, environmental, and organizational factors, strategic planning intensity, and financial performance in U.S. banks. The results suggested that the intensity with which banks engage in the strategic planning process has a direct positive effect on banks' financial performance and mediates the effects of managerial and organizational factors on banks' performance. Results also indicated a reciprocal relationship between strategic planning intensity and performance. That is, strategic planning intensity causes better performance, and, in turn, better performance causes greater strategic planning intensity.

Strategic planning takes many different forms in different organizations. However, Boyd and Reuning-Elliotts' (1998) study of strategic planning provide strong support for the measurement properties of the strategic planning construct. In particular, the study results indicate that strategic planning is a construct that can be reliably measured through seven indicators: mission statement, trend analysis, competitor analysis, long-term goals, annual goals, short-term action plans, and ongoing evaluation. This evidence is important because previous researchers rarely tested for dimensionality of the planning construct, nor did most studies report tests of the reliability of their measures.

A small entrepreneurial startup may operate without any explicit strategy. The firm's strategy is likely to exist only in the head of the founder and, apart from being articulated

through verbal communication with employees, suppliers, and other interested parties, may have been made explicit only when a business plan was required by outside investors. Most corporations with an established management structure tend to have some form of strategic planning process, though in small single-business companies, the strategy process may be highly informal with no regular cycle and may result in little documentation. Most larger companies, especially those with multiple businesses, have more systematic strategic planning processes, the outcome of which is a documented plan that integrates the business plans of the individual divisions (Grant, 2003).

Whether formal or informal, systematic or ad hoc, documented or not, the strategy formulation process is an important vehicle for achieving coordination within a company. The strategy process occupies multiple roles within the firm. It is in part a coordination device encouraging consistency between the decisions being made at different levels and in different parts of the organization. And it is in part a mechanism for driving performance by establishing consensus around ambitious long-term targets and by inspiring organizational members through creating vision and a sense of mission. In these roles, the strategy process can be important in achieving both coordination and cooperation (Grant, 2003).

The system through which strategy is formulated varies considerably from company to company. Even after the entrepreneurial startup has grown into a large company, strategy making may remain the preserve of the chief executive. Medium-sized single-business companies typically have simple strategic planning processes where functional managers provide key inputs such as financial projections and market analysis, but the key elements of strategy—goals, new business developments, capital investment, and key competitive initiatives—are decided by the chief executive (Grant, 2003).

The more systematized strategic planning processes typical of large companies with separate divisions or business units traditionally follow an annual cycle. Strategic plans tend to be for three to five years and combine top-down initiatives (indications of performance expectations and identification of key strategic initiatives) and bottom-up business plans (proposed strategies and financial forecasts for individual divisions and business units). After discussion between the corporate level and the individual businesses, the business plans are amended and agreed and integrated into an overall corporate plan that is presented to and agreed by the board of directors (Grant, 2003).

The resulting strategic plan typically comprises the following elements (Grant, 2003):

- A statement of the goals the company seeks to achieve over the planning period with regard to both financial targets and strategic goals.
- A set of assumptions or forecasts about key developments in the external environment to which the company must respond.
- A qualitative statement of how the shape of the business will be changing in relation to geographical and segment emphasis, and the basis on which the company will be establishing and extending its competitive advantage.
- Specific action steps with regard to decisions and projects, supported by a set of mileposts stating what is to be achieved by specific dates.
- A set of financial projections, including a capital expenditure budget and outline operating budgets.

Although directed toward making decisions that are documented in written strategic plans, the important elements of strategic planning form the strategy process: the dialog through which knowledge is shared and ideas communicated, the establishment of consensus, and the commitment to action and results (Grant, 2003).

RESOURCE-BASED STRATEGY

Strategic management models traditionally have defined the firm's strategy in terms of its product/market positioning—the products it makes and the markets its serves. The resource-based approach suggests, however, that firms should position themselves strategically based on their unique, valuable, and inimitable resources and capabilities rather than the products and services derived from those capabilities. Resources and capabilities can be thought of as a platform from which the firm derives various products for various markets. Leveraging resources and capabilities across many markets and products, rather than targeting specific products for specific markets, becomes the strategic driver. While products and markets may come and go, resources and capabilities are more enduring.

According to Hitt, Bierman, Shimizu, and Kochhar (2001), scholars argue that resources form the basis of firm strategies and are critical in the implementation of those strategies as well. Therefore, firm resources and strategy seem to interact to produce positive returns. Firms employ both tangible resources (such as buildings and financial resources) and intangible resources (like human capital and brand equity) in the development and implementation of strategy. Outside of natural resource monopolies, intangible resources are more likely to produce a competitive advantage because they are often rare and socially complex, thereby making them difficult to imitate.

According to Barney (2001), resource-based theory includes a very simple view about how resources are connected to the strategies a firm pursues. It is almost as though once a firm becomes aware of the valuable, rare, costly to imitate, and nonsubstitutable resources it controls, the actions the firm should take to exploit these resources will be self-evident. That may be true some of the time. For example, if a firm possesses valuable, rare, costly to imitate, and nonsubstitutable economies of scale, learning curve economies, access to low-cost factors of production, and technological resources, it seems clear that the firm should pursue a cost leadership strategy.

However, it will often be the case that the link between resources and the strategy of a firm is not being so obvious. Resource-based strategy has to determine when, where, and how resources may be useful. Such strategy is not obvious, since a firm's resources may be consistent with several different strategies, all with the ability to create the same level of competitive advantage. In this situation, how should a firm decide which of these several different strategies it should pursue? According to Barney (2001), this and other questions presented by Priem and Butler (2001) concerning the resource-based theory of the firm indicate that the theory is still a theory in many respects, and that more conceptual and empirical research has to be conducted to make the theory more useful to business executives who develop resource-based strategies for their firms.

Resource-based strategy is concerned with the mobilization of resources. Since perceived resources merely represent potential sources of value-creation, they need to be mobilized to create value. Conversely, for a specific resource to have value, it has to increase or otherwise facilitate value-creation. The activity whereby tangible and intangible resources

are recognized, combined, and turned into activities with the aim of creating value is the process here called resource mobilization. The term *resource mobilization* is appropriate, as it incorporates the activity-creation based on both individual and organizational resources, as well as tangibles and intangibles. According to Haanaes (1997), alternative terms such as resource allocation, resource leveraging, or resource deployment are appropriate when describing the value-creation based on tangible resources, but less so for intangibles. For example, a competence cannot be allocated, as the person controlling it has full discretion over it. Moreover, the competence can be used in different ways. An engineer can choose to work for a different organization and to work with varying enthusiasm. Also, the same engineer can choose not to utilize his or her competence at all. The term resource mobilization is thus meant to cover the value-creation based on all types of resources, and it recognizes that all activity creation has a human aspect.

In strategic management and organization theory, the importance for the firm of reducing uncertainty and its dependence on key resources that it cannot fully control has received much attention. If a large part of the resource accumulation takes place in terms of increased competences that key professionals could easily use for the benefit of other employers, the firm needs to set priorities in terms of linking these individually controlled resources to the firm. Loewendahl (2000) suggests three alternative strategies. The simplest strategy, which may be acceptable to some firms, involves minimizing the dependence on individual professionals and their personal competence. In this sense, the firm chooses to avoid the dependence on individual tangibles. A second strategy is that of linking the professionals more tightly to the firm and reducing the probability of losing them. The third alternative strategy involves increasing the organizationally controlled competence resources without reducing the individually controlled resources. Such a strategy leads to a reduction in the relative impact of individual professionals on total performance without reducing the absolute value of their contributions. Firms that have been able to develop a high degree of organizationally controlled resources, including relational resources that are linked to the firm rather than to individual employees, are likely to be less concerned about the exit and entry of individual professionals and more concerned about the development and maintenance of their organizational resource base.

According to Maister (1993), there is a natural, but regrettable, tendency for professional firms, in their strategy development process, to focus on new things: What new markets does the firm want to enter? What new clients does the firm want to target? What new services does the firm want to offer? This focus on new services and new markets is too often a cop-out. A new specialty (or a new office location) may or may not make sense for the firm, but it rarely does much (if anything) to affect the profitability or competitiveness of the vast bulk of the firm's existing practices.

On the other hand, an improvement in competitiveness in the firm's core businesses will have a much higher return on investment since the firm can capitalize on it by applying it to a larger volume of business. Enhancing the competitiveness of the existing practice will require changes in the behavior of employees. It implies new methods of operating, new skill development, and new accountabilities. Possible strategies for being more valuable to clients can be found in answers to the following questions (Maister, 1993):

- Can we develop an innovative approach to *hiring* so that we can be more valuable to clients by achieving a higher caliber of staff than the competition?

- Can we *train* our people better than the competition in a variety of technical and counseling skills so that they will be more valuable on the marketplace than their counterparts at other firms?
- Can we develop innovative *methodologies* for handling our matters (or engagements, transactions, or projects) so that our delivery of services becomes more thorough and efficient?
- Can we develop systematic ways of helping, encouraging, and ensuring that our people are skilled at client *counseling* in addition to being top suppliers?
- Can we become better than our competition at accumulating, disseminating, and building our firmwide expertise and experience, so that each professional becomes more valuable in the marketplace by being *empowered* with a greater breadth and depth of experience?
- Can we organize and *specialize* our people in innovative ways so that they become particularly skilled and valuable to the market because of their focus on a particular market segment's needs?
- Can we become more valuable to our clients by being more systematic and diligent about *listening* to the market: collecting, analyzing, and absorbing the details of their business than does our competition?
- Can we become more valuable to our clients by investing in research and *development* on issues of particular interest to them?

In resource-based strategy, there has to be consistency between resources and business. The logic behind this requirement is that the resources should create a competitive advantage in the business in which the firm competes. To meet this requirement, corporate resources can be evaluated against key success factors in each business. When doing so, it is important to keep in mind that in order to justify retaining a business, or entering a business, the resources should convey a substantial advantage. Merely having pedestrian resources that could be applied in an industry is seldom sufficient to justify entry or maintain presence in an attractive industry (Collis & Montgomery, 1997).

Moreover, managers must remember that, regardless of the advantage of a particular corporate resource appears to yield, the firm must also compete on all the other resources that are required to produce and deliver the product or service in each business. One great resource does not ensure a successful competitive position, particularly if a firm is disadvantaged on other resource dimensions (Collis & Montgomery, 1997).

ACTIVITY-BASED STRATEGY

The goal of strategy formulation in the resource-based theory is to identify and increase those resources that allow a firm to gain and sustain superior rents. Firms owning strategic resources are predicted to earn superior rents, while firms possessing no or few strategic resources are thought to earn industry average rents or below average rents. The goal of strategy formulation in the activity-based theory is to identify and explore *drivers* that allow a firm to gain and sustain superior rents. *Drivers* are a central concept in the activity-based theory. To be considered drivers, firm level factors must meet three criteria: they are structural factors at the level of activities, they are more or less controllable by management, and they impact the cost and/or differentiation position of the firm. The definition of drivers is

primarily based on what drivers do. Drivers are abstract, relative, and relational properties of activities. For example, scale of an activity is a driver, as the size of the activity relative to competitors may represent a competitive advantage.

The analytical focus of the resource-based theory is potentially narrower than that of the activity-based theory. While the activity-based theory takes the firm's entire activity set as its unit of analysis, the resource-based theory focuses on individual resources or bundles of resources. Having a narrower focus means that the resource-based theory may not take into account the negative impact of resources, how a resource's value may change as the environment changes, or the role of noncore resources in achieving competitive advantage.

The activity-based and resource-based theories are similar as they both attempt to explain how firms attain superior positions through factors that increase firm differentiation or lower firm cost. While drivers and resources share a common goal of achieving and sustaining superior positions, the manner by which they are seen to reach a profitable position is different. With the resource-based theory, it is the possession or control of strategic resources that allow a firm to gain a profitable position. On the other hand, drivers within the activity-based theory are not unique to the firm. They are generic structural factors available to all firms in the industry in the sense that they are conceptualized as properties of the firm's activities. *A firm gains a profitable position by configuring its activities using drivers. It is this position that a firm may own but only if it is difficult for rivals to copy the firm's configuration.*

The sustainability of superior positions created by configuring drivers or owning resources is based on barriers to imitation. The sustainability of competitive advantage as per the activity-based theory is through barriers to imitation at the activity level. If the firm has a competitive advantage, as long as competitors are unable to copy the way activities are performed and configured through the drivers, the firm should be able to achieve above-average earnings over an extended period. The sustainability of superior profitability in the resource-based theory is through barriers to imitation of resources and immobility of resources. If resources are easily copied or substituted, then the sustainability of the position is suspect.

Sheehan (2002) concludes his discussion by finding similarities between the resource-based theory and the activity-based theory. Resources in the resource-based theory are similar to drivers in the activity-based theory, as both are based on earning efficiency rents. Furthermore, capabilities in the resource-based theory are similar to activities in the activity-based theory, as both imply action.

ETHICS IN IT

Schultz (2006, p. 2) argues: "Nowadays, 'ethics' seems to be an *inclusive* term for concerns referred to by 'morality', 'value', and 'justice'…and it is also concerned with the value or goodness of things and situations and with the justness of institutions (both formal and informal)."

Stakeholder theory is a theory of organizational management and ethics. Indeed all theories of strategic management have some moral content, though it is often implicit. Moral content in this case means that the subject matter of the theories are inherently moral topics (i.e., they are not amoral). Stakeholder theory is distinct because it addresses

morals and values explicitly as a central feature of managing organizations. The ends of cooperative activity and the means of achieving these ends are critically examined in stakeholder theory in a way that they are not in many theories of strategic management (Phillips, Freeman, & Wicks, 2003).

As far as we know, there is no comprehensive use of stakeholder theory in IT strategy research. Although Lacity and Willcocks (2000) have used the term in identifying four distinct customer stakeholders and three distinct supplier stakeholders, their research has not gotten any further on this path. In an IT strategy context, a stakeholder theory approach will describe the relationship as a nexus of cooperative and competitive interests possessing intrinsic value.

The term *stakeholder* is a powerful one. This is due, to a significant degree, to its conceptual breadth. The term means many different things to many different people and hence evokes praise and scorn from a wide variety of scholars and practitioners of myriad academic disciplines and backgrounds. Such breadth of interpretation, though one of stakeholder theory's greatest strengths, is also one of its most prominent theoretical liabilities as a topic of reasoned discourse. Much of the power of stakeholder theory is a direct result of the fact that, when used unreflectively, its managerial prescriptions and implications are merely limitless. When discussed in instrumental variation (i.e., that managers should attend to stakeholders as a means to achieving other organizational goals such as profit or shareholder wealth maximization), stakeholder theory stands virtually unopposed (Phillips et al., 2003).

Ethics in information technology is an emerging research field. Schultz (2006, p. 5) identifies four basic features of information technology that could create new ethical issues: (1) *speed* of information technology; (2) unlimited size of information *storage* capacity; (3) *availability* of information at any location (connectivity); and (4) easy *reproduction* of digital information. Earlier research (Salehnia, 2002) has addressed ethical issues related to these basic features such as Internet privacy, digital contract laws, copyright, piracy, and other security issues. Schultz (2006) has analyzed, among other things, the ethical issues of offshoring from both the perspectives of the source and destination countries. A recent article (Intorna, 2007) addressing the question of morality of technology, published in the specialist journal *Ethics and Information Technology*, exemplifies the kinds of ethical issues that IT strategy must address. Intorna (2007) argues that it is important to make the ethics (politics) of information technology visible via (a) disclosive ethical archaeology—to subject technology sites to ongoing disclosive scrutiny, (b) transparent design—to open up design and development (and implementation) activity to multiple stakeolders for ongoing scrutiny and debate, (c) engaging and multistable[1] design—to prevent the user of technology design from becoming unwittingly enrolled into political programs not of their choosing, and (d) materializing morality—technology is transparent and open to ongoing scrutiny.

Ethics of information technology is a corporate governance issue managed through IT governance (Raghupathi, 2007). IT ethical issues within organizations arise from the relation between IT professionals and non-IT personnel, known as *users* (Schultz, 2006, p. 34). Standards and policies are usually specified by organizations to ensure ethical conduct is conformed by IT professionals and the user community as part of IT governance. The contemporary ethics issues currently being addressed by IT governance include codes of ethics, for example, ACM Code of Ethics (Schultz, 2006, p. 48); Web/e-mail policy; data protection and privacy; integration of customer relationship, supplier management, and compliance with privacy laws; and compliance with corporate governance (such as the

Sarbanes-Oxley Act) and USA Patriot Act (Raghupathi, 2007). IT governance as an IT management practice is discussed in detail in Chapter IX.

BUSINESS STRATEGY ANALYSIS

Before we can define the desired business situation and craft the appropriate business strategy, we must analyze the current business situation. There are many business analysis techniques for strategy development. Some are general, while others are more specific. General analysis techniques include SWOT analysis and the X model. Specific analysis techniques include business direction (mission, vision, objectives), market strategy, value system, competitive forces, and product life cycle. We will review the following methods:

I. **SWOT analysis.** SWOT analysis is an analytical tool for assessing the present and future situation focusing on strengths (S), weaknesses (W), opportunities (O), and threats (T). The whole company may be the object of analysis, but also a department in a company or a project in a company may be the study object.
II. **X model.** The X model is a tool for description and analysis of both the current and a desired situation. It is a method for assessing the situation within a company, a project, or a department. The situation consists of a time period in which work is done. In the beginning of the time period, there are both factual and personal inputs, and at the end of the period, there are both factual and personal outputs.
III. **Business direction.** Important business concepts are mission, vision, and objectives. What are the business outcomes that the strategy must achieve?
IV. **Market strategy.** The market strategy shows our position and ambition in the marketplace. We can either have the same product as our competitors, or we can have a different product. If we have the same product as everyone else, it has to be sold at the same price as all the others (as in a vegetable market or through the Internet). It is not possible for an Internet bookstore to sell at a higher price than others, when there is perfect information, and information searching is associated with no costs. This is called the law of indifference. In order to survive, the company must have a cost advantage that will give higher profits and result in higher earnings for the owners. If we are selling a product that our customers perceive to be different from our competitors' product, then we have differentiation. A service may in its basic form be the same for all companies, like an airline travel, in the sense that all airlines are supposed to bring you safely to your destination. The product is differentiated by supplementary services.
V. **Competitive forces.** The basis of this method is that a company exists within an industry, and to succeed, it must effectively deal with the competitive forces that exist within the particular industry. For example, the forces in an emerging industry such as mobile communication are considerably different from those of established industries such as financial services. The company interacts with its customers, suppliers, and competitors. In addition, there are potential new entrants into the particular competitive marketplace and potential substitute products and services. To survive and succeed in this environment, it is important to understand these interactions and the implications in terms of what opportunities or competitive advantage can occur.

VI. **Product portfolio analysis.** There are a number of approaches that aim to relate the competitive position of an organization to the maturity of its product. The models assume there is a basic S-shaped curve description to the growth phenomenon of products. Four stages in the life cycle of any product can be identified as introduction, growth, maturity, and decline. When we look at the life cycle of all products in the firm, we can apply product portfolio analysis. This method shows the relationship between a product's current or future revenue potential and the appropriate management stance. The two by two matrix names the products in order to chart symptoms into a diagnosis so that effective management behavior can be adopted. The matrix classifies products according to the present market share and the future growth of that market. A successful product that lasts from emergent to mature market goes around the matrix. This strategy is simply to milk the cows, divest the dogs, invest in the stars, and examine the wild cats.

VII. **Environmental analysis.** Environmental analysis is concerned with the external corporate environment. An analysis of the environment is important because it increases the quality of the strategic decision making by considering a range of the relevant features. The organization identifies threats and opportunities facing it, and those factors that might assist in achieving objectives and those that might act as a barrier. The strategy of the organization should be directed at exploiting the environmental opportunities and blocking environmental threats in a way that is consistent with internal capabilities. This is a matter of environmental fit that allows the organization to maximize its competitive position. An external analysis can investigate politics, the economy, the society, and the technology. This is sometimes called PEST analysis. If we include the study of legal and environmental matters, we call it PESTLE. The analytical work that has to be done in the company when doing environmental analysis is concerned with questions such as: What are the implications of the trends (changes in the environment)? What can the company do in order to meet the opportunities and threats that follow?

VIII. **Knowledge analysis.** Distinctions can be made between core knowledge, advanced knowledge, and innovative knowledge. While core knowledge is required to stay in business, advanced knowledge makes the firm competitively visible, and innovative knowledge allows the firm to lead its entire industry. The knowledge map can be applied to identify firm position compared with competitors' knowledge levels.

In the following sections, we describe each method in detail. All methods are generally used by enterprises with varying degree of details in crafting the appropriate business strategy to achieve the enterprise vision and strategic objectives.

Method I: SWOT Analysis

SWOT analysis is an analytical tool for assessing the present and future situation focusing on strengths, weaknesses, opportunities, and threats. The whole company may be the object of analysis, but also a department in a company or a project in a company may be the study object. As illustrated in Figure 2.2, strengths and weaknesses are concerned with the internal situation, while opportunities and threats are concerned with the external situation.

The main advantage of this technique is its readiness for application. The main disadvantage is that it will represent subjective views. Furthermore, management has to be

Figure 2.2. Example of SWOT analysis

Strengths	Opportunities
Distribution Knowledge Reputation	Market growth Supplementary services Globalization
Weaknesses	**Threats**
Management Costs Infrastructure	New competitors New technology Low-cost producers

aware of employee expectations if employees are invited to contribute in a SWOT analysis, as they will expect something to happen after the analysis is completed.

The SWOT model reveals the needs for changes in business. The company has to change in order to take advantage of tomorrow's opportunities and to avoid future threats. The company does also need to change to utilize strengths and to avoid weaknesses. For example, the company in Figure 2.2 could:

- Seek more benefits from distribution, knowledge, and reputation
- Improve management, reduce costs, and improve infrastructure
- Find ways of participating in the market growth
- Develop supplementary services
- Expand market activities worldwide
- Develop entry barriers for competitors
- Learn and introduce new technology
- Cut costs where there are low-cost producers

Method II: X Model

The X model is a tool for description and analysis of both the current and a desired situation. It is a method for assessing the situation within a company, a project, or a department. The situation consists of a time period in which work is done. In the beginning of the time period, there are both factual and personal inputs, and at the end of the period, there are both factual and personal outputs, as illustrated in Figure 2.3.

Figure 2.3. The X model in a time perspective

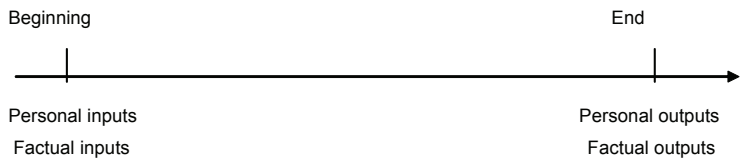
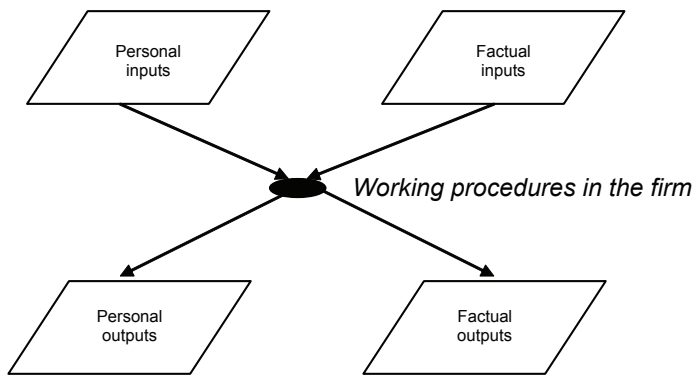


Figure 2.4. Inputs and outputs of the X model



This technique is called the X model because of the visual image we see illustrated in Figure 2.4. It uses the same description technique as the Y model, where a rectangle represents an information set and a dot represents an information process.

The personal inputs consist of people with knowledge, experience, attitudes, needs, and ambitions. The factual inputs consist of tasks, objectives, plans, procedures, and resources. The working manners and procedures consist of working styles, cooperation, and communication. Personal outputs consist of people with new knowledge, new experience, new attitudes, new needs, and new ambitions. Similarly, factual outputs consist of executed tasks, objectives achieved or not, plans implemented or not, new procedures installed, and used resources.

The main advantage of the X model is its very compressed description; a description of a comprehensive situation is condensed onto a page. Thereby, it gives a very good overview of what has happened or will happen. Another advantage is that the model focuses both on factual and personal inputs, thereby providing a good starting point for business analysis. An example of a knowledge management project will illustrate the X model in Figure 2.5.

We see in this example that the expected outcome is reduced motivation. Reasons for this may be too much work close to milestones as well as medium quality communication. Probably, we may be able to achieve improved motivation if these two factors are changed as illustrated in Figure 2.6. The working manner is determined by the factual and personal inputs. The reason for too much work close to milestones might be that there is too short a time allocated to the work. We would also like to change the inputs, but that might not always be possible as they are given or determined by others.

Figure 2.5. The X model applied to a project in the company

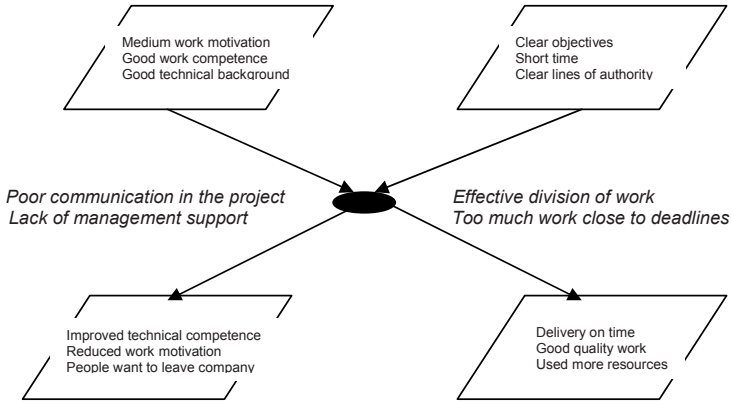
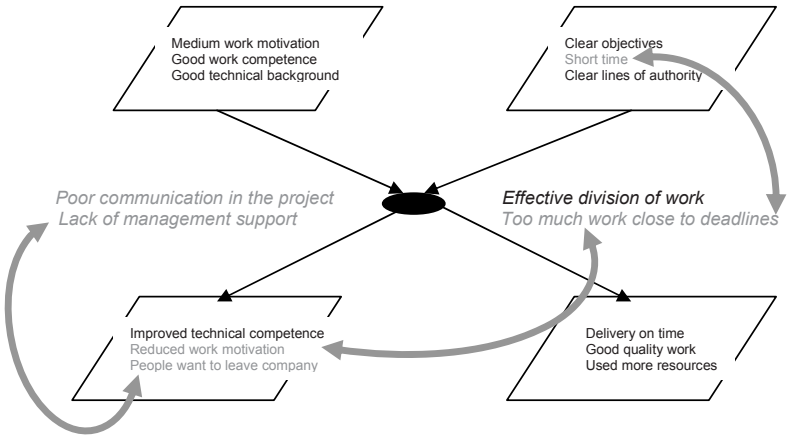


Figure 2.6. Example of causal analysis in the X model



When we have described the current situation and working manners, we can explain why personal and factual outputs become what they do. The next step is to describe the desired situation. It is easy to say what we would like the desired situation to be. Then we can go backwards in the X model to revise personal and factual inputs as well as working procedures.

Method III: Business Direction

Important business concepts are mission, vision, and objectives. A *mission* is an unambiguous statement of what the company does and its long-term, overall purpose. It indicates what kind of business the company is in and which markets it serves. For example a telecom corporation such as Telenor in Norway is in the business of providing connections, while a power corporation such as Statnett is in the business of providing energy. The mission of a law firm is to provide legal advice. The mission describes a justification for firm ex-

istence; it states the purpose of the organization. The mission answers the question: What business are we in?

A *vision* is a statement of what the business will be in the future (three to five years) and how the company will operate. It indicates how good the company wants to be. Given the mission that describes the justification for existence, the vision is to describe what ambitions the firm has for the future. For example, the vision of Telenor may be to develop from a local operator in Norway to a global player in the telecommunications market. For Statnett, the vision might be to expand into other energy sources besides hydroelectric power. For a law firm, the vision might be to become the leader in business law. The vision represents the view that senior management has for the future of the organization; it is what they want it to become or achieve. The vision answers the question: What do we want to achieve in this business?

Objectives are short-term (such as annual) and interim (such as 2–3 years) targets that management is setting to take the company toward its vision. Objectives are quantified targets, such as financial returns, customer service, manufacturing performance, staff morale, and social and environmental contributions. For example, the objective of Telenor may be to double its income from foreign business by a certain date. For Statnett, it may be to have a fraction of its business in nonhydropower. For a law firm, an objective might be to recruit all the best business lawyers. Objectives define the desired future positions of the organization; they are specific and tangible measures of future targets. Objectives answer the question: What should be our future positions in this business?

The Norwegian School of Management BI (NSM) will serve as an example. The mission of NSM is teaching business administration and management and doing research. Its vision is to be one of the leading research-based business schools in Europe and an attractive workplace for leading faculty members within important management areas such as marketing, finance, and technology. Objectives include the number of doctoral students and the amount of research funding in the next one, two, and three years.

Method IV: Market Strategy

The market strategy shows our position and ambition in the marketplace. Figure 2.7 provides an illustration of generic market strategies. We can either have the same product as our competitors, or we can have a different product. If we have the same product as everyone else, it has to be sold at the same price as all the others (as in a vegetable market or through the Internet). It is not possible for an Internet bookstore to sell at a higher price than others when there is perfect information and information searching is associated with no costs. This is called the law of indifference. In order to survive, the company must have a cost advantage that will give higher profits and result in higher earnings for the owners.

If we are selling a product that our customers perceive to be different from our competitors' product, then we have differentiation. A service may in its basic form be the same for all companies, like an airline travel, in the sense that all airlines are supposed to bring you safely to your destination. The product is differentiated by supplementary services. For example, some airlines give you the option of booking certain seats in advance; some airlines have frequent flyer programs, while others have better meals.

The two generic market strategies are concerned with cost leadership or differentiation. In Figure 2.8, required skills and resources as well as organizational requirements are listed for the two strategies.

Figure 2.7. Generic market strategies

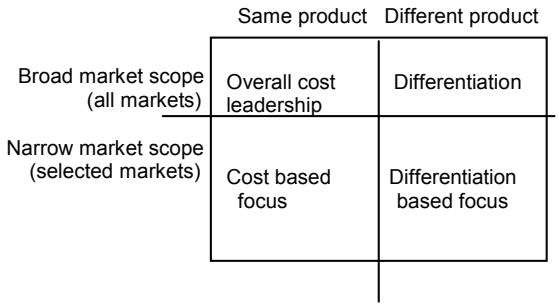


Figure 2.8. Characteristics of generic market strategies

Generic strategy	Required skills and resources	Organizational requirements
Cost leadership	• Frequent investments and easy access to capital • Process skills • Intensive supervision of labor	• Tight cost control; frequent, detailed control reports • Structured organization and responsibilities • Incentives based on meeting quantitative targets
Differentiation	• Strong on marketing and creativity • Product skills • Strong capability in basic research • Corporate reputation for quality or technological leadership • Strong cooperation with distribution channels	• Strong coordination in research and development (R&D), product development, and marketing • Market based incentives • Ability to attract highly skilled labor and creative people • Looser, more trusting organizational relationships

Cost leadership means the organization aims to be the lowest-cost producer in the marketplace. The organization enjoys above-average performance by minimizing costs. The product or service offered must be comparable in quality to those offered by others in the industry in order that customers perceive its relative value. Typically, there is only one cost leader. If more than one organization seek advantage with this strategy, a price war ensues, which eventually may drive the organization with the higher cost structure out of the marketplace.

Differentiation means the organization qualifies its products or service in a way that allows it to appear unique in the marketplace. The organization has identified which qualitative dimensions are most important to its customers, and it has found ways to add value along one or more of those dimensions. In order for this strategy to work, the price charged

customers by the differentiator must seem fair relative to the price charged by competitors. Typically, multiple firms in any given market will employ this strategy (Pearlson, 2001).

Method V: Competitive Forces

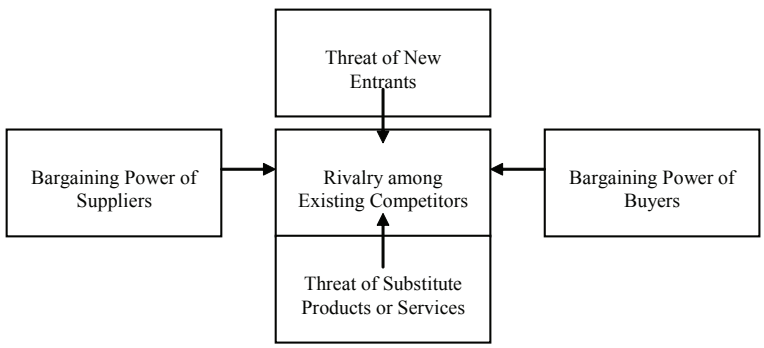
The basis of this method is that a company exists within an industry, and to succeed, it must effectively deal with the competitive forces that exist within the particular industry. For example, the forces in an emerging industry such as mobile communication are considerably different from those of established industries such as financial services.

The company interacts with its customers, suppliers, and competitors. In addition, there are potential new entrants into the particular competitive marketplace and potential substitute products and services. To survive and succeed in this environment, it is important to understand these interactions and the implications in terms of what opportunities or competitive advantage can occur. Figure 2.9 illustrates the competitive forces model (Porter, 1985).

At any one time, one or more of the forces may be exerting particular pressure on the competing company. The competitive forces method models the competitive world in which any organization exists and the forces that play upon it. The current competitive position of any organization will be the net force of these five aggregated. In order to understand the strength of any one of these forces, an understanding must be built up of the contributory factors to its power. Theoretically, there are a large number of these, but for any given organization, many of them will not be relevant (Robson, 1997):

- **Rivalry among existing competitors.** This rivalry can range from intense in a cut-throat industry to mild in an affluent one. When rivalry is high, profits tend to be low. Industries that are static or in decline will have more intense rivalry than those that are rapidly growing. When there are high fixed costs or high storage costs, then the volume of sales must be maintained, so rivalry heightens. Rivalry is more intense when there is overcapacity caused by demand fluctuations or production constraints. Where there is no brand loyalty, that is, no differentiation, then demand depends on price, and when switching costs are small, this is very elastic, so rivalry will be heated. If there are lots of organizations of a similar size in the same pool,

Figure 2.9. Porter's (2001) competitive forces model



then rivalry will be intense. If leaving the industry will cost a lot either physically or emotionally, then the rivalry will tend to be intense.

- **Threat of new entrants.** The height of the barriers against this threat and the determination to get over them defines the industry's profitability. Government policy can represent such a barrier when a license to operate is required or strict safety rules have to be applied. The threat of reactions to a new entrant acts as a barrier, since dealing with aggressive countermoves needs strong capabilities and significant advantages. For example, Color Air was a new entrant that was met by aggressive countermoves by existing airlines in Norway. After having lost five hundred million Norwegian kroner, Color Air gave up. If existing firms have lower costs than new entrants can have, then this absolute cost advantage is a very high barrier. A new entrant must establish access to distribution channels so the difficulties of access act as a barrier to entry. If buyers would have to face extra costs to change suppliers, or have a reluctance to do so, this acts as an entry barrier. If economies of scale are an important pricing factor, then new entrants either need large markets straightaway or must face higher costs. The degree of product differentiation and brand loyalty is directly related to the height of the entry barrier. Some industries involve major startup costs, and obviously in them, the barriers to entry are very high.
- **Threat of substitute products or services.** When this threat is high, then the profit margin is low, as customers more readily change when prices are high. If a similar product or service is available at the same, or lower, price, then the threat is high. If potential substitutes are more expensive, or inferior, then the threats are low. Switching costs for customers determine the threat of substitutes as well as determine the height of the entry barrier. If no extra costs are incurred, then change is likely. Apathetic or satisfied buyers are not likely to change; militant or dissatisfied ones are. Generally, the more significant the purchase is to the customer, the higher is their propensity to switch.
- **Bargaining power of buyers.** This primarily depends on their price sensitivity and their bargaining leverage. The bargaining power of buyers depends on the purchaser's relative cost importance. A number of things can reduce price sensitivity: brand loyalty and differentiation, impacts of the product on their product, and customer's own profitability. The bargaining power of buyers depends on buyer concentration and volume, buyer switching costs, buyer information, threat of backward vertical integration by buyers, and existence of substitutes.
- **Bargaining power of suppliers.** This is the differentiation of the inputs and matters when the organization's process needs a rare commodity. When switching costs of changing to an alternative supplier are high, then suppliers are relatively powerful since the organization would face significant costs if it were to leave them. When substitute suppliers are available, the power of the supplier is reduced. The higher supplier concentration, the higher supplier power is. If the supplier has to achieve high volume sales, then they hold less bargaining power. Supplier power is low when the costs of goods provided are high relative to the purchasing industry's total costs. Supplier power is higher when their product is significant to the buyer organization's chances of product differentiation. When suppliers will find it easy to forward integrate into the purchaser's industry, then they have high bargaining power.

To produce a model of the competitive forces playing upon an organization requires detailed research into its industry, but it then allows the net power of the five forces as well as extreme single powers to be judged in order to concentrate attention on those most significant.

Method VI: Product Portfolio Analysis

There are a number of approaches that aim to relate the competitive position of an organization to the maturity of its product. The models assume there is a basic S-shaped curve description to the growth phenomenon of products. Four stages in the *life cycle* of any product can be identified as illustrated in Figure 2.10:

- **Introduction.** The product is new, and there is an initial stage of experimentation and gradual acceptance. IS/IT can support product specification, customer requirements, process design, market research and forecasting, logistics planning, and cost estimation.
- **Growth.** There is a rapid increase in sales. IS/IT can support product enhancement, customer service, capacity development and utilization, new distribution channels, monitoring price margins, service from suppliers, promotion to expand customer base, and identifying competitors' position.
- **Maturity.** Sales remain high, but there is no further increase. IS/IT can support product variations, customer segmentation, product cost reduction, costing and sourcing of components, inventory control, pricing flexibility, analysis of contribution, and targeting specific competitors.
- **Decline.** Competition, product displacement, or other factors cause a decline in sales. IS/IT can support reduced inventory levels, sales forecasting, subcontracting, release of capacity for other uses, rationalization of distribution channels, and reduction in administrative costs.

When we look at the life cycle of all products in the firm, we can apply product portfolio analysis. This method shows the relationship between a product's current or future revenue

Figure 2.10. Product life cycle

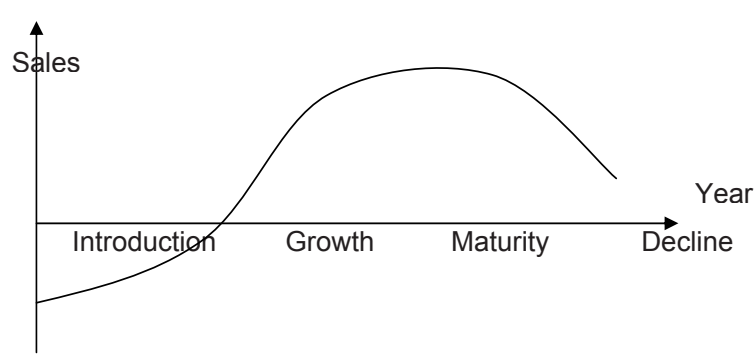
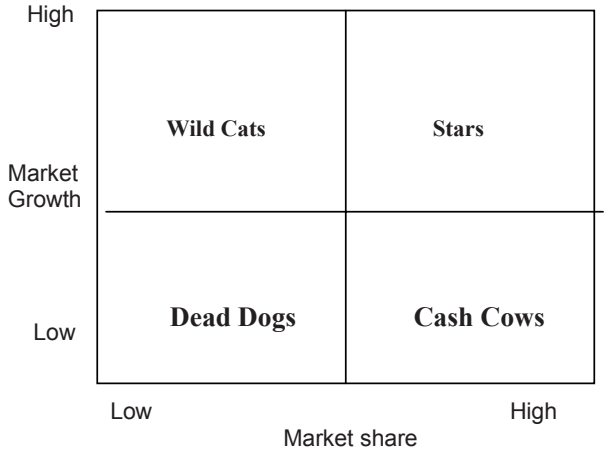


Figure 2.11. Product portfolio analysis (Robson, 1997)



potential and the appropriate management stance as illustrated in Figure 2.11. The two by two matrix names the products in order to chart symptoms into a diagnosis so that effective management behavior can be adopted. The matrix classifies products according to the present market share and the future growth of that market. A successful product that lasts from emergent to mature market goes clockwise around the matrix.

The matrix segments summarize the expected profit and cash flow and also recommends an outline strategy to follow. This strategy is simply to milk the cows, divest the dogs, invest in the stars, and examine the wild cats (Robson, 1997):

- **Cash cows.** Products in this segment are those that are the current high-income earners for the organization. They are expected to provide the major part of current profits and form the major source of funding for future developments. Cash cows are relatively short-term, so they are not expected to provide significant future revenues. Management will try to increase profitability by milking more intensively and by extending the lifetime. IS/IT will tend to focus on control of the business environment rather than innovation—to defend the current position.
- **Stars.** Products in this segment are the ones that provide significant revenue now and are expected to continue to do so in the future. In this segment, the organization will wish to seek opportunities to increase profits and extend the life of the product. IS/IT will tend to focus on the customer—identifying customers and their requirements to achieve a better understanding of demand than actual and potential competitors.
- **Dead dogs.** Products in this segment provide little or no contribution to profits today, and it is not expected that this situation will change. Such products should be removed. IS/IT will tend to focus on reducing costs and securing customers.
- **Wild cats.** Products in this segment are those that the organization is currently prepared to continue, although they make little or no contribution to revenue now, they are expected to in the future. These are usually young products and are probably still being developed. Investments should be made cautiously in this segment since the risks associated with it are higher than with others. Wild cats are potential rising

stars. The organization will seek ways to ensure that products quickly mature into highly profitable stars. IS/IT will tend to focus on innovative product and process improvements.

Product portfolio analysis is an important tool for innovation management. Companies will strive to invent new products before the existing ones decline. Innovations will be either incremental improvements on existing products to increase their customer values and extend their commercial lifespan, or disruptive or radical new products which are markedly different from the existing products and have great potential to become star products. New products tend to start their life as a promising wild cat, which through marketing excellence and/or further product improvement, could potentially transition into a star. Agile enterprises are responsive to competitive market changes and able to quickly introduce new products to capitalize on the market opportunities. Agile enterprises are therefore more able to rapidly increase their new product revenues over old products over a 2–3 year time frame. Agile enterprises sustain their competitive advantage through constant product innovation in synchrony with market changes. We will return to the topic of product innovation in Chapter X.

Method VII: Environmental Analysis

Environmental analysis is concerned with the external corporate environment. An analysis of the environment is important because it increases the quality of the strategic decision making by considering a range of the relevant features. The organization identifies threats and opportunities facing it, and those factors that might assist in achieving objectives and

Figure 2.12. External factors for environmental analysis

External Factor	Examples of Trends	Implications for Company
Politics	Less trade barriers	Global competition
Economy	Deregulation Larger, freer markets	Global competition Alliances and partnerships
Society	Increasing number of older people Growing unemployment More knowledge	New services and products Market decrease Changing customer needs
Technology	IT can support knowledge work New communications networks	Technology to achieve benefits Technology to become global
Legal issues	Privacy legislation Electronic signature	Data security Paperless trading
Ecology	Green movements Terrorism	Reusable resources Contingent plans

those that might act as barriers. The strategy of the organization should be directed at exploiting the environmental opportunities and blocking environmental threats in a way that is consistent with internal capabilities. This is a matter of environmental fit that allows the organization to maximize its competitive position.

An external analysis can investigate politics, the economy, the society, and the technology. This is sometimes called PEST analysis. If we include the study of legal and environmental matters, we call it PESTLE. In Figure 2.12, some examples of external factors are listed with their implications for the company. The analytical work that has to be done in the company when doing environmental analysis is concerned with questions such as: What are the implications of the trends (changes in the environment)? What can the company do in order to meet the opportunities and threats that follow?

The success of an environmental analysis is largely dependent on the characteristics of the environment: its complexity—that is, how many variables are in the environment, the rate of change, and the amount (and cost) of available information about it. Environmental analysis considers the external situation within which the organization exists. It is important to audit the environmental influences, assess the nature of the environment to judge whether it is simple or complex, identify the key environmental forces, and identify the key opportunities and threats to be handled by the company (Robson, 1997).

Environmental analysis is an important competence for innovation. Environmental changes are often the source of inspiration for generating new ideas for innovation. Enterprises must be very well in-tune with the environment to sustain their competitive advantages. Otherwise, they may rapidly become industry laggards, rendering the products and services less appealing or less effective in the emergent environment. Chapter X will address the issues of business innovation and environmental analysis in more detail.

Method VIII: Knowledge Analysis

Distinctions can be made between core knowledge, advanced knowledge, and innovative knowledge. While core knowledge is required to stay in business, advanced knowledge makes the firm competitively visible, and innovative knowledge allows the firm to lead its entire

Figure 2.13. Knowledge map for external analysis (Tiwana, 2000)

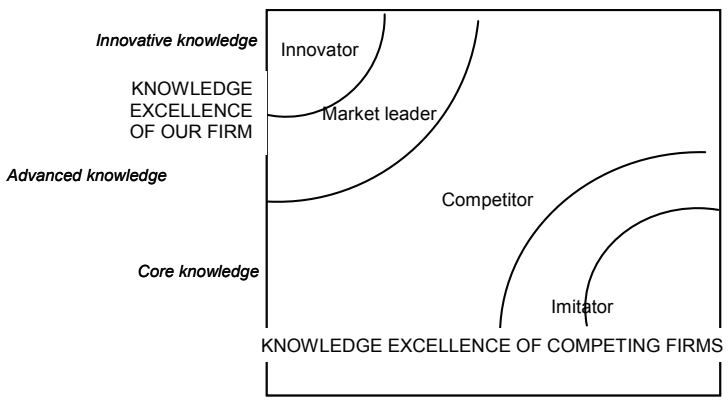
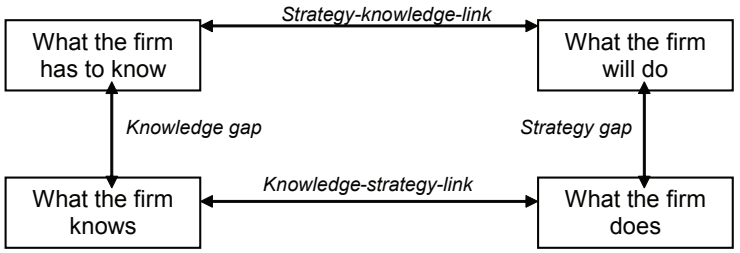


Figure 2.14. Identifying knowledge gap in internal analysis (Tiwana, 2000)



industry. The knowledge map in Figure 2.13 can be applied to identify firm position. The map illustrates firm knowledge levels compared with competitors' knowledge levels.

While the knowledge map represents an external analysis of the firm's current knowledge situation, the knowledge gap in Figure 2.14 represents an internal analysis of the firm's current knowledge situation. The knowledge gap is dependent on business strategy. What the company does is different from what the company will do, creating a strategy gap. What the company knows is different from what the company has to know, creating a knowledge gap. Two important links emerge: the strategy-knowledge link and the knowledge-strategy link (Tiwana, 2000).

ANALYZING NEEDS FOR CHANGE: THE STRATEGY

After descriptions of the current situation and the desired situation, the needs for change can be identified. The gap between desired and current situation is called needs for change. In Figure 2.15, all business analysis methods presented earlier are listed, and examples of desired and current situation are presented. Needed changes are exemplified, and potential IS/IT are suggested. We see many changes needed, and IS/IT solutions include executive information system (EIS), project management system (PMS), research library system (RLS), customer relationship management (CRM), enterprise resources planning (ERP), electronic marketplaces (EMS), and knowledge management system (KMS). Many of these systems will rely on Internet technology. For example, EIS, PMS, and KMS will use both intranet and extranet as well as the Internet.

The same kind of analysis should be done for the current and desired IS/IT situation as illustrated in Figure 2.14. Again, we see IS/IT solutions include customer relationship management (CRM), knowledge management system (KMS), and executive information system (EIS). The column "change needed" in both Figures 2.15 and 2.16 represent answers to the what question, while the column "IS/IT potential" suggests answers to the how question.

One of the elements of the IS/IT strategy is identification of future applications. In order to discuss this subject, we have to familiarize ourselves with what kinds of application software a company might have and how applications are developed or acquired.

A company seldom starts from scratch. There are already computers, terminals, printers, operating systems, application software, databases, and communication networks

in the firm. This implies that potential IS/IT as listed in Figures 2.15 and 2.16 have to be considered in view of existing infrastructure, architecture, and applications.

Furthermore, at this stage, needs for change have to be prioritized. This implies that not all needs can get attention and not all potential IS/IT can be implemented.

Analyzing needs for change, identifying potential IS/IT, comparing with current IS/IT in the company, and then prioritizing needs for change should result in proposals for new IS/IT in the organization. For example, our company may prioritize extending product lives, sharing and developing advanced and innovative knowledge, improving internal and external communication, improving support for knowledge workers, improving human resources management, improving problem solving, and coding information from knowledge sources. If such needs for change have priority, then a knowledge management system (KMS) should be implemented in the organization.

Figure 2.15. Identification of potential IS/IT based on needs for business change

Business Analysis	**Desired Situation**	**Current Situation**	**Change Needed**	**IS/IT Potential**
SWOT analysis	Strong management	Weak management	Strengthen management	Executive Information System (EIS)
X model	Even distribution of work	Too much work close to milestones	Improve work scheduling	Project Management System (PMS)
Business direction	Research-based business school	Education-based business school	Strengthen research	Research Library System (RLS)
Market strategy	Strong differentiation	Weak differentiation	Add services to base product	Customer Relationship Management (CRM)
Competitive forces	High entry barriers for new entrants	Low entry barriers for new entrants	Achieve economies of scale	Enterprise Resources Planning (ERP)
Product portfolio analysis	Many stars	Many cash cows	Extend life of products	Knowledge Management System (KMS)
Environmental analysis	Reach young people	Customers are old people	Apply new technology-based market channels	Electronic Market Places (EMP)
Knowledge analysis	Market leader	Imitator	Share and develop advanced and innovative knowledge	Knowledge Management System (KMS)

Figure 2.16. Identification of potential IS/IT based on needs for technology change

IS/IT Analysis	Desired Situation	Current Situation	Change Needed	IS/IT Potential
Benefits of IS/IT	Market benefits	Rationalization benefits	Achieve competitive advantage	Customer Relationship Management (CRM)
Stages of IS/IT growth	Growth stage	Architecture stage	Improve internal and external communication	Knowledge Management System (KMS)
IS/IT in management activities	Knowledge management	Administrative and support functions	Improve support for knowledge workers	Knowledge Management System (KMS)
IS/IT in business processes	Excellent human resources management	Poor human resources management	Improve human resources management	Knowledge Management System (KMS)
IS/IT support for value configuration	Excellent problem solving in value shop	Poor problem solving in value shop	Improve problem solving	Knowledge Management System (KMS)
Strategic integration	Reciprocal integration	Administrative integration	Top management participation	Executive Information System (EIS)
IS/IT support for knowledge management	What they know stage	End user tools stage	Coding information from knowledge sources	Knowledge Management System (KMS)
IS/IT in e-business	E-business stage	Internal communication stage	Business process reengineering and design	New IS/IT infrastructure

E-STRATEGY

The Internet is an extremely important new technology, and it is no surprise that it has received so much attention from entrepreneurs, executives, investors, and business observers. Caught up in the general fervor, many have assumed that the Internet changes everything, rendering all the old rules about companies and competition obsolete. According to Porter (2001), that may be a natural reaction, but it is a dangerous one. It has led many companies, dot-coms, and incumbent alike to make bad decisions—decisions that have eroded the attractiveness of their industries and undermined their own competitive advantage. The time has come to make a clearer view of the Internet.

The Internet provides a global infrastructure that enables compression of time and space, integrated supply chains, mass customization, and navigational ability. The impact of the Internet can be described as breaking down traditional trade-offs between richness of interaction possible with a customer and the number of customers a business can access or

products it can offer. Internet-based businesses can compete on huge selections of products as they are not constrained by physical stores. Also, richer interaction (e.g., check order status, seek online advice) and customized relationships with large numbers of customers at incremental costs are increasingly feasible with the economics of information (Grover & Saeed, 2004).

Internet technology provides better opportunities for companies to establish distinctive strategic positioning than did previous generations of information technology. The Internet's greatest impact has been to enable the reconfiguration of existing industries that had been constrained by high costs for communicating, gathering information, or accomplishing transactions. For example, the Internet tends to dampen the bargaining power of channels to providing companies with new, more direct avenues to customers (Porter, 2001).

Kim, Nam, and Stimpert (2004) find that Porter's generic strategies of differentiation and cost leadership will still be applicable to e-business firms in a broad sense. However, they argue that a strategy of focus will be less viable in e-business than traditional business contexts. They argue that differentiation is more sustainable than cost leadership strategy for e-business firms. In particular, Kim et al. (2004) argue that an e-strategy will be able to achieve superior, sustainable performance through an "integrated strategy"[2] discipline (when compared with *either* differentiation *or* cost leadership), which strives to achieve *both* cost leadership and differentiation strategic positioning. Kim et al. (2004) also suggest that "clicks-and-bricks firms will enjoy superior performance relative to their pure play counter-parts *only* when their online and offline operations are aligned and tightly integrated."

The Internet has many properties, but 10 of them stand out (Afuah & Tucci, 2003):

- **Mediating technology.** The Internet is a mediating technology that interconnects parties that are independent or want to be. The interconnection can be business-to-business (B2B), business-to-consumer (B2C), consumer-to-consumer (C2C), or consumer-to-business (C2B). It can also be within a firm or any other organization, in which case it is called an intranet.
- **Universality.** Universality of the Internet refers to the Internet's ability to both enlarge and shrink the world. It enlarges the world because anyone anywhere in the world can potentially make his or her products available to anyone anywhere else in the world. It shrinks the world in that distance is reduced on electronic highways.
- **Network externalities.** A technology or product exhibits network externalities when it becomes more valuable to users as more people take advantage of it. A classic example is the telephone, where the value for each subscriber increases with number of subscribers. The more people that are connected to a network within the Internet, the more valuable the network is.
- **Distribution channel.** The Internet acts as a distribution channel for products that are largely information bits, such as software, music, video, news, and tickets. There is a replacement effect if the Internet is used to serve the same customers serviced by the old distribution channel without bringing in new customers. There is an extension effect if the Internet is used by more people and for new services.
- **Time moderator.** The fifth property of the Internet is time moderation or its ability to shrink and enlarge time. It shrinks time for customers who want information on products when regular stores are closed. It enlarges time when related work can be done at different points in time.

- **Information asymmetry shrinker.** An information asymmetry exists when one party to a transaction has information that another party does not—information that is important to the transaction. The Web reduces such information asymmetries, as the other party can find the same information on the Web.
- **Infinite virtual capacity.** Access to the Internet is perceived as unlimited; you do not have to wait on hold or in a long line. For example, virtual communities like chat houses have infinite capacity for members who can talk anytime of the day for as long as they want.
- **Low cost standard.** Firms could not exploit the properties of the Internet if they did not adopt it. For two reasons, adoption has been easy. First and most important, the Internet and the Web are standards open to everyone everywhere and are very easy to use. Second, the cost of the Internet is a lot lower than that of earlier means of electronic communications.
- **Creative destroyer.** These properties of the Internet have enabled it to usher in a wave of creative destruction in many industries. Newspapers, for example, offer their readers material on their Web sites. The Internet is a low cost standard printing press of sorts and a distribution network with unlimited capacity that reaches more people than any newspaper could ever hope to reach. This tears down a large part of the barriers to entry that exist in the newspaper business.
- **Transaction cost reducer.** The Internet also reduces transaction costs for many industries—thanks in part to the universality, distribution channel, low cost standard, and information asymmetry reduction properties. Transaction costs are the costs of searching for sellers and buyers; collecting information on products; negotiating, writing, monitoring, and enforcing contracts; and the costs of transportation associated with buying and selling.

However, as supply chains are becoming more dispersed and global in their orientation, and thereby have given rise to the problem of coordinating flow of information and materials across organizations that are linked together, transaction costs will rise (Grover & Malhotra, 2003).

The Internet provides a global infrastructure that enables compression of time and space, integrated supply chains, mass customization, and navigational ability. The impact of the Internet can be described as breaking down traditional trade-offs between richness of interaction possible with a customer and the number of customers a business can access or products it can offer. Internet-based businesses can compete on huge selections of products, as they are not constrained by physical stores. Also, richer interaction (e.g., check order status, seek online advice) and customized relationships with large numbers of customers at incremental costs are increasingly feasible with the economics of information (Grover & Saeed, 2004).

The digital transformation of traditional businesses is occurring (Andal, Cartwright, & Yip, 2003). New information technologies, such as broadband networks, mobile communications, and the Internet, have well-known but often unrealized potential to transform businesses and industries. The key to success is knowing how and when to apply technologies. Companies should look at 10 specific drivers to help determine their best strategy.

From a study of large corporations in North America and Europe, Andal et al. (2003) identified the different drivers that determine the competitive advantage of deploying new information technology. Each of the drivers is very specific to how new IT can be applied

in a particular industry. They are not general factors, such as the overall cost of a technology. And they are different from the critical success factors that affect the implementation of information technology and that are mostly specific to a company, as opposed to being characteristic of an industry. There are a total of 10 drivers to help determine an appropriate enterprise e-strategy:

1. **Electronic deliverability.** Some products have a large component that can be delivered electronically. Airline companies, for instance, enable customers to book reservations online, after which the confirmations and tickets can be delivered efficiently through e-mail.
2. **Information intensity.** Nearly all products and services have some information content, but the amount varies dramatically. Cars come with volumes of operating instructions, for instance.
3. **Customizability.** New information technology allows many companies to tailor an overall offering to the specific needs and preferences of individual customers. In the past, newspapers were a one-size-fits-all product. Today, online editions can be customized to include just the news and information that a particular subscriber is likely to want.
4. **Aggregation effects.** Products and services differ in the way they can be aggregated or combined. Thanks to new information technology, institutions can offer customers bundled services.
5. **Search costs.** Before the advent of Internet companies such as Amazon.com, finding an out-of-print book could require considerable time and effort. Now, the Web provides people with vast amounts of information, regardless of their location or time zone, lowering the search costs for finding exactly the product or service they want.
6. **Real-time interface.** A real-time interface is necessary for companies and customers dealing with important information that changes suddenly and unpredictably. A good example is online trading, in which rapid fluctuations in the stock market can be devastating for those who lack instantaneous access to that information.
7. **Contracting risk.** Buying new books online has little contracting risk for customers. Prices are relatively low, and specifying the exact titles is straightforward. Buying cars online is a completely different matter. Prices are substantially higher.
8. **Network effects.** In many industries, the utility of a good or service increases with the number of people who are using it (or one that is compatible). A key benefit of using Microsoft Office, for instance, is that the suite of programs is ubiquitous in the business world, enabling people to share Word, PowerPoint, and Excel documents easily.
9. **Standardization benefits.** New information technology enabled companies to synchronize and standardize certain processes, resulting in greater efficiency in business-to-business transactions as well as increased convenience for customers.
10. **Missing competencies.** New information technology can facilitate company alliances in which partners use each other to fill in missing competencies.

These 10 drivers can be classified into three types of drivers. The first four drivers are inherent characteristics of product or service, drivers 5–7 are concerned with interactions

between company and its customers, while the last three are concerned with interactions between company and its partners and competitors.

The 10 drivers determine what type of mediation approach is most likely to succeed in particular industries. For each of three defined strategies, a couple of drivers are dominant, several are ancillary, and others have little consequence. The three strategies, classic disintermediation, remediation, and network-based mediation, are explained in terms of drivers by Andal et al. (2003) as follows:

A. Classic disintermediation is cutting away layers of middlemen, such as distributors, that separate the company from its customers. Disintermediation is the elimination of traditional intermediaries, be they retail stores, direct mail operations, or 800-number-style telephone support operations. With market-facing systems, the selling of products directly to consumers and businesses has become a powerful force in many industries. This strategy is affected mainly by the drivers that pertain to the inherent characteristics of a product or service. Specifically, electronic deliverability is a major factor. That is, why use a distributor when a product or service can be delivered electronically to the customer? Information intensity is another dominant driver. Before new information technology, products or services with high information intensity often needed intermediaries, such as an insurance agent, to explain a complex policy. Now, a sophisticated Web site can perform much of that functionality. Less powerful drivers of disintermediation include customizability, search costs, real-time interface, and low contracting risk. An industry that benefits from technology that provides a real-time interface, for instance, will favor disintermediation in order to eliminate the time lag caused by middlemen.

B. Remediation is introducing and embracing middlemen. Historically, whenever transportation and communications infrastructures have markedly improved, industry value chains have tended to lengthen, with products and services becoming increasingly specialized. This has led many to suggest that the Web will also create whole new classes of intermediaries: market-facing enterprises whose primary presence is on the Web and who will provide portals that allow online users to access producers of goods and services. Remediation is affected mainly by two drivers: aggregation effects and high contracting risk. When there are benefits to combining products or services, companies can use technology to work more closely with their middlemen partners, building strong, ongoing relationships. Some insurance companies, for example, now provide potential customers with online estimates of different policies through the Web site of the Automobile Association of America (www.aaa.com). High contracting risks also encourage companies to use technology to establish closer—and more secure—relationships. Ford, for instance, relies on the Web-based applications of middleman Vastera Inc., a Viriginia-based firm, to handle import and export processes, customs clearance, trade regulation compliance, and cost calculations for shipments to Mexico and Canada. Other drivers of remediation are customizability (if the middleman can contribute to the customization process rather than get in its way), real-time interface (if the interface is between the middleman and either the producer or customer—and not between the producer and customer, which would instead encourage disintermediation), and missing competencies. High search costs tend to favor disintermediation instead of remediation.

C. Network-based mediation is building strategic alliances and partnerships with new and existing players in a tangle of complex relationships. This mediation is affected mainly by drivers that pertain to a company's interactions with its partners and competitors. Specifically, network effects and standardization benefits are clearly important reasons for industry players to work more closely together. Other drivers include high search costs (which favor the use of a network for locating products and information), the need for a real-time interface (which encourages partners to build a system that enables them to deal with each other in real time), and missing competencies (which encourage companies, even competitors, to partner with one another to fill those gaps).

These Internet-enabled business transformative drivers can be selected using Porter's strategy principles to create an appropriate e-strategy that fits the purpose of the firm.

SUMMARY

Business-aligned IT strategy is developed in accordance with Porter's (1985) business strategy principles. Business strategy with a clear goal and a "continuity of direction" must first be defined. The strategy must have a unique value proposition supported by a distinctive value configuration. The strategy must also define how all the elements (resources and activities) of what the firm does fit together and reinforce each other. This usually involves making trade-offs. Corporate strategy shapes business and IT strategies, so different corporate roles must be understood. The firm uses strategic management discipline to formulate its strategic position, make strategic choices for the future, turn the strategy into action, and realize the benefits (Johnson & Scholes, 2002). Translating strategy into actions requires strategic planning skills. Strategic planning is the process of deciding on the projects/programs that the organization will undertake and the appropriate amount of resources that will be allocated to each program over the next several years. Strategic planning practice performance can be measured from the perspectives of cost leadership, differentiation, focus, and intensity (Nayyar 1993). Formal systematic strategic planning process has been found to be beneficial, and the key elements of strategic plan are described (Grant, 2003).

Resource-based strategy leverages the firm's unique resources and capabilities as a platform across many markets and products (Barney, 2001). Activity-based strategy allows the firm to gain a profitable position by configuring its activities using activity-based drivers such as scale—a unique configuration which is difficult for rivals to copy. In comparing the two strategies, resources are similar to drivers and capabilities to activities (Sheehan, 2002).

Business ethics can be studied via stakeholder theory, which is a theory of organizational management and ethics. Indeed all theories of strategic management have some moral content, though it is often implicit. Moral content in this case means that the subject matter of the theories are inherently moral topics (i.e., they are not amoral). Stakeholder theory is distinct because it addresses morals and values explicitly as a central feature of managing organizations. The ends of cooperative activity and the means of achieving these ends are critically examined in stakeholder theory in a way that they are not in many theories of strategic management (Phillips et al., 2003). Use of stakeholder theory in IT strategy research is a still subject for further study. In an IT strategy context, a stakeholder theory approach will describe the relationship as a nexus of cooperative and competitive interests possessing

intrinsic value. IT strategy should ensure the design and use of information technology to be transparent and open to ongoing scrutiny by stakeholders such that the values of ethics are upheld, always. This is assured through diligent application of IT governance (which is described in Chapter IX) by business enterprises.

Competitive business strategy formulation requires competitive strategic analysis. Eight popular methods of strategy analysis are available: SWOT analysis, X-model, business direction, market strategy, competitive forces, product portfolio analysis, environmental analysis, and knowledge analysis. From analysis of each method, a strategic change can be determined and the corresponding IT system can be identified.

Internet technology will enable the reconfiguration of existing industries that had been constrained by high costs for communicating, gathering information, or accomplishing transactions. Internet-driven business strategy, known as e-strategy, has created successful new-generation companies such as e-Bay, Google, Amazon, and Yahoo. Differentiation is more sustainable than cost leadership strategy for e-business firms. In particular, an e-strategy will be able to achieve superior, sustainable performance through an "integrated strategy" discipline (when compared with *either* differentiation *or* cost leadership), which strives to achieve *both* cost leadership and differentiation strategic positioning (Kim et al., 2004). E-strategy is also being adopted by traditional companies such as GE and News Limited. E-strategy is developed through gaining insights on 10 fundamental properties of the Internet, which include (Afuah & Tucci, 2003): mediating technology, universality, network externalities, distribution channel, time moderator, information asymmetry shrinker, infinite virtual capacity, low cost standard, creative destroyer, and transaction cost reducer. In-depth understanding of Internet capabilities in reshaping business models will give IT managers the ability to influence business strategy to take advantage of, and incorporate, Internet into the business and IT strategies to keep firms competitive, adaptive, and responsive to changing market and external environments.

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ENDNOTES

1 Introna (2007, p. 23) refers to multistability as "technologies which afford multiple interpretations—and ways of doing—to the users. This means that the users can interpret and use these artifacts in multiple ways that encourage active engagement with the artifact, as in the case of a manual camera." He argues that "the higher the level of engagement the less likely it will be for the user to become unwittingly enrolled into political programs not of their choosing."

2 Kim et al (2004) argue that this is in contrast to Porter's stuck in the middle conundrum, without clear strategic focus, in traditional business contexts.