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OPERATIONS STRATEGY Strategy: The Concept of Strategy The word strategy is derived from the Greek term “ strategos” (plural strategoi; Greek: [????????? , ????????? ], literally meaning " army leader") is used in Greek to mean " general". However, the term is also used to describe a military governor which command, plan and conduct of a war.

When strategy applied to business wars, the strategy refers to the establishment of objectives, the setting of direction, and the development and implementation of plans, with the goal (in place of military “ victory”) of achieving ascendancy over one’s adversaries according to Andrews (1971), Ghemawat (2002) and Porter (1980). In order to have the desired competitive impact, a strategy has to operate over an extended time horizon and embrace a broad spectrum of activities, ranging from resource allocation processes to day-to-day operations.

It must integrate decisions affecting these different sets of activities into a coherent pattern, both over time and across groups that often compete for the same resources. An effective strategy also usually involves concentrating a company’s efforts and resources on a limited range of directions. Focusing resources on certain directions reduces available for others, nonetheless, so a coherent strategy usually required that a company make trade-offs among various “ expected outcomes”.

TYPE OF STRATEGY The word strategy is used in many contexts that is useful to identify and contrast three different types of management-related strategies. At the highest level, corporate strategy identifies the industries and markets in which a company will operate. Corporate strategists make decisions that implement these choices, including investment in and divestment of businesses together with allocation of resources among existing businesses.

Business strategy, the second level of company strategy, is focused at the level of the individual business or business unit within the company, and is concerned with where the business positions itself within a particular industry or market as well as with how and with what capabilities the business will win customers, cooperatively and in competition with other parties in its industries.

In other word, the business strategy is also concerned with strategic business units (SBUs) as each SBU might have its own business strategy, which specifies (1) the scope of that business and its relation to the corporation as a whole, and (2) how it proposes to position itself within its particular industry to achieve competitive advantage in various ways according to Hayes et al (1988). To be effective, elaborated further from Porter (1980), this advantage must meet important customer needs, take into account competitors’ strengths and weaknesses, and be sustainable given the SBU’s capabilities.

Empirical evidence from a study over 100 companies by Sterman (2000) found that those companies that engaged in system level thinking about their business strategies significantly outperformed those that focused at the product level. To be more specific, Hax and Wilde 2001 differentiated three views a company might consider in developing a strategy. For IBM4710 Inter OM Chayakrit Asvathitanont, Ph. D. 1. Best Product- this view emerges from the classic competitive strategy.

It focuses on competing by positioning the company’s products or services as low cost, having a unique set of features, or targeting a focused or niche segment in the market. 2. Total Customer Solution- the customer is at the center and the earliest to satisfy. It argues that very good understanding of customer and developing close relationships with those customers to support them in creating their own economic value.

Company competing with this view will focus on supply chains to response to providefamilyof products or services that closely match customer requirement. 3. System Lock-In- this view comprehends the enterprise, the customers, the suppliers, and the most important those company whose product and services enhance the strategy-making company’s own product and service portfolio. The key to success in this view is to identify, attract and nurture those companies whose products and services are complementary, engaging them in a collective effort to please the customer.

In this study, companies engaged in “ system lock-in” far outperformed those employing “ total customer solutions” or “ best product” strategies on both Market Value Added (MVA) and Market-to-Book Value (MBV) as in Exhibit 1: Exhibit 1 Relative Performance of Three Positioning Strategies Strategy Best Product Total customer solutions System lock-in Number of companies in the study Relative Market Value Added Performance Relative Market-to-Book Value Performance 74 67 16 1. 0 1. 6 4. 0 1. 0 1. 2 2. 0 Source: Hax and Wilde, The Delta Project: Discovering New Sources of Profitability in a Network Economy, Pelgrave, 2001.

Thus, to develop business strategy, the company must think about its positioning not only to its competitors but also its customers, suppliers and potential complementary product or service producers. Understanding the system-level view, the company will be able to provide better solutions from integration of value chain with attention to company produce the products or services that complement its products and services or any other solutions. However, the understanding customer is more critical to strategy development and execution.

Hayes and Wheelwright (1984) and Fine and Hax (1985) had proposed five dimensions to use as the framework which are Cost, Quality, Availability, Features/ innovativeness and Environmental/ performance. Cost The cost has been defined as the cost of the product or service to the customer. Cost this includes not only purchase price of the product or service, but the cost of ownership as well. The aspects of cost to customer will be vary on the industry or category of the product such as the cost customer consumer product will be only on its selling price.

While industrial product, like machine and equipment, will be more likely For IBM4710 Inter OM Chayakrit Asvathitanont, Ph. D. to extend its concern on installation, maintain and others cost related not only to the equipment alone. Quality The quality defined by Garvin (1988) and King (1987) is broken down into two aspects, the tangible and intangible. The tangible aspects of quality include the aesthetics of the product, or output of the service, how reliable it is over period of time, whether or not it is safe, and how convenience to fix and etc.

While the intangible aspects include the competence, courtesy, and credibility of the people involved in the process, as well as the degree to which those people understand the customer’s needs and communicate well with the customers. They also include assessments of theenvironmentsurrounding the purchase process or service, including considerations such as accessibility and security. In addition, to examine the quality, it may be important to differentiate assessments of the actual quality delivered from the quality perceived by the customer.

Availability The availability dimension is increasingly important and demanding by customers. Availability requirements clearly vary by business. Grocery store customers expect products to be available on the shelf when they go shopping. An out-of-stock item is a lost of sale for a particular brand or product and also may be lost of sale for the store itself. Airlines buying airplanes, on the other end of the spectrum, do not expect to buy their products off the shelf, but they do expect delivery when promised.

Plans are made months ahead, or in some cases years ahead, of projected delivery to put the new aircraft into service immediately upon delivery, possibly retiring and replacing another aircraft. Late deliveries can cause great disruption to an airline’s entire schedule. Availability applies to new product introductions as well. Some industries such as consumer electronics focus on fast time-to-market for new products. Others have longer product development and introduction cycles but must delivery new products when promised. Moreover, availability refers to the variety of the products a company offers.

There is a wide range of ways in which companies offer customized products or services to their customers. Hence, availability describes the firm’s ability to deliver the variety of products or services its customers want when they want them. Features and Innovativeness The inherent characteristics of the product or service is Features such as the featured services from the first or business class fares on full service airlines like Japan Airline, Thai Airways or less featured services, such as passage on Southwest Airlines’, and Airasia’s “ no frills” flight.

Innovativeness is closely related to features due to the fact that advanced technologies are developed to be new featured of the product. For instance, global positioning systems (GPS), as innovativetechnology, is equipped with hi-end car and represent as additional feature. Environmental Performance It may apply to the product (or tangible output of a service) itself, or to the process by which that product was made or service delivered. Environmental management systems, for example, focus on processes and aim to reduce For IBM4710 Inter OM Chayakrit Asvathitanont, Ph. D. the environmental impact (e. . hazardous waste generation) of the processes used to make the products or deliver the services. ISO 14000 and the European Eco-Management & Audit Scheme (EMAS, www. quality. co. uk/emas. htm) are but two of several frameworks for companies to follow to improve environmental performance. The third level is composed of the functional strategies that support the type of competitive advantage to be pursued. A typical functional strategy is the sets of decisions made in each of the functional areas of an organization that determine how it will use in the overall business strategy of the company.

Research and development managers make decisions about technology use, engineering resource allocation, product development process, research and development skills and organization, product prototyping and testing approaches, and involvement of customers in product development. Marketing managers make decisions about product and service positioning, advertising and promotion, and customer relationship management. Financeand Accounting managers make decisions about sources of funds, resource allocation, and currency hedging.

The decisions make in these various functions make up the overall business strategy of the organization. Synergistic decision making among the functional support of an overall business strategy and leverage cross-functional capabilities to create and support business strategy direction is allowing the company to be successful. Beckman and Rosenfield (2008) have integrated these strategy into framework illustrated in Exhibit X. X. Each individual functional area may develop its own capabilities that in turn serve business strategy, or the functional areas may work in concert with another to create overarching capabilities.

Business strategy is best supported, when the activities undertaken by the functional areas and/or the capabilities they develop complement one another and work together to achieve the goal of business (Fine and Hax 1985). They refer to this requirement as crossfunctional integration or fit. OPERATIONS STRATEGY An operations strategy is a set ofgoals, policies, and self-imposed restrictions that together describe how the organization proposes to direct and develop all the resources invested in operations so as to best fulfill (and possibly redefine) its mission (Hayes et al 1998).

In the case of business organization, the mission usually is expressed terms of survival, profitability, and growth, and is pursued by trying to differentiate itself from its competitors in some desirable way. A company’s operation strategy, then, has to begin by specifying how it proposes to support that chosen form of competitive differentiation. By integrating resources invested in the operations function into a cohesive, purposeful whole, such a strategy can enable operations to become a powerful source of competitive advantage. For IBM4710 Inter OM Chayakrit Asvathitanont, Ph.

D. Operations Strategy Goal As described earlier, five dimensions of customer requirements which are cost, quality, availability, feature/innovativeness, and environmental performance has been mapped with operations performance measures by Fine and Hax (1985). In each case, operations can affect some, but not all, of the company’s performance along that dimension. Cost Operations directly affects the cost of the product or service and thus its purchase price (assuming that products are priced to achieve some profit) through its direct or indirect control of the supply chain.

It can also affect the product’s cost of ownership through joint efforts with engineering (research and development) and/or marketing in the design of the product or service. Quality Operations also directly controls the quality of the product or service, again through its direct or indirect control of the supply chain. This is often thought of as a “ conformance to specifications” task as operations strives to have all products and services delivered meet the specification set forth by the developers on behalf of the customers.

Operations can also influence the design of a product or service so that it can be produced or delivered with higher quality. It does so, again, in joint efforts with research and development and marketing. Availability Operations is primarily responsible for the availability of products or services already in the market and often determines make-to-order versus make-to-stock strategies. Operations’ flexibility and process knowledge are critical in determining both the variety of features and the availability an organization can offer.

The ability of operations to control the supply chain and the timeliness with which products or services can be delivered directly affects availability. The determination of how much flexibility operations can offer is a joint decision with marketing and research and development. Features/Innovativeness Generally, features are the purview of the marketing and research and development organizations, although the operations function is influential in determining the range of products, services, or features the firm will be able to provide based on its won ability to deliver them.

Process knowledge and innovation are key to the organization’s ability to customize output to specific customer needs, to embed new innovations, and to allow research and development to create novel products and services. For IBM4710 Inter OM Chayakrit Asvathitanont, Ph. D. Exhibit 2: Business and Operations Strategy Performance Dimensions Dimension Cost Customer Concerns Purchase price Cost of ownership Operations Influence Costs of: Materials Production Delivery Distribution Capital Productivity Inventory turnover Design for cost Cost Objectives are measured using labor, materials, and capacity productivity; inventory turnover; unit cost.

Quality of: Materials Production Delivery Distribution Design for quality Quality measures include percent defective or rejected, frequency offailurein the field, cost of quality, and mean time between failures. Availability Timeliness of delivery of product or service Ability to respond to volume fluctuations Timeliness of new product introductions Delivery performance is measured by percentage of on-time shipments, average delay, expediting response time. Flexibility is measured by product mix range, volume, and lead time for new products.

Process capability Capabilities for more featured and innovative products and services Process knowledge and ability to extend it Design and development capabilities Measures of process capability assess the types of products or services that can be delivered. Environmental performance Managing environmental performance of suppliers or other partners in the supply chain Managing the environmental performance of internal production or service delivery operations Environmental performance measures include both emissions measures (water, air, and solid waste) as well as measures of product reuse and recyclability.

Quality Tangible characteristics Aesthetics Reliability, durability, and safety Serviceability Intangible characteristics Competence, courtesy, understanding, andcommunicationAccess and security For purchase: Off-the-shell or make-toorder Of new products: Rapid cycle or planned evolution Variety of range of products available: Degree of customization Availability Features/ innovativeness Inherent characteristics of a product or service Degree of innovation Environmental performance

Degree to which process that produces and delivers the product or service is environmentally sound Degree to which the product or service itself is environmentally sound and reusable or recyclable For IBM4710 Inter OM Chayakrit Asvathitanont, Ph. D. Source: Fine and Hax. (1985), “ Manufacturing Strategy: A Methodology and an Illustration,” Interfaces 15, no. 6 (November-December) cited in Beckman, Sara L. , Rosenfield, Donald B. (2008). Operations Strategy: Competing in the 21st Century, U. S. : McGraw-Hill International Edition. Environmental Performance Finally, operations own the environmental erformance of both internal and external operations throughout the supply chain. It either works with suppliers to achieve adequate environmental performance in their facilities or works to achieve it in internal Operations or both. Operations may also influence research and development to design products that are more environmentally sound (e. g. , easier to disassemble and recycle). Operations Goals in Practice Researchers have identified many alternative categorizations of these operations performance dimensions over the years (Dangayach and Deshmukh 2001).

Some identify many categories such as the following 11: low cost, design flexibility, volume flexibility, quality conformance, product performance, speed of delivery, dependability of deliveries, after sales service, advertising, broad distributions, and broad product line (Miller and Roth 1994). Others summarize the characteristics in fewer categories defined as follows (Spring and Biadeb 1997): Cost: produce and distribute product (or service) at low cost. Quality: manufacture or deliver product or service with high quality or performance standards.

Delivery dependability: meet delivery schedules. Flexibility: react to changes in product, changes in product mix, modifications to design, fluctuations in materials, and changes in sequence. Yet others link clusters of operations performance characteristics into stylized business strategies such as those of caretaker, marketer, and innovator (miller and Roth 1994). Some researchers have examined similarities and differences in emphasis on these performance categories by industry, by geography, and over time.

One study, for example, found that computer and electronics companies rate high product quality as their most important competitive factor, but computer companies rate innovative features and designs more highly than do electronics companies, while electronics companies place more emphasis on short lead times than do computer companies (Lau 2002). Others have found important differences among various countries or geographies in the emphasis they place on these characteristics. After achieving a high level of quality, for example, Japanese manufacturers turned their focus to time-based competition and innovative products, while the U.

S. and Europe continued to rank quality as a critical objective (Kenney and Florida 1993). The Manufacturing Futures Survey, which collected longitudinal data over many years, found that lasting improvements in manufacturing can only be achieved by first building quality, followed by delivery reliability, then flexibility and responsiveness, and then technologicalleadership. At each For IBM4710 Inter OM Chayakrit Asvathitanont, Ph. D. step of the progression, cost efficiency is pursued for the given capability set, culminating with an overall focus on cost leadership (Roth et al. 989, Miller et al. 1989). Operations Decision Categories Creating an operations strategy essentially entails making a set of decisions about the structure and infrastructure of operations (Skinner 1969, Hayes and Wheelwright 1984). Structural decisions deal with the vertical integration of the operations, its facilities, capacity, and process technology, whereas infrastructure decisions focus on organizational and human resource policies, sourcing and supply chain management practices, quality management systems, planning and control systems, and information technology.

Infrastructure is developed over time through persistent day-to-day practice, top management commitment, and cross-functional efforts to create capabilities that support and leverage the firm’s structure. Infrastructure decisions usually deal with less tangible outcomes than do structural decisions, but it is the effective integration and synthesis of structural and infrastructural decisions that create long-term operations excellence (Dangayach and Deshmukh 2001).

In making decisions in each of these categories, operations managers strive to ensure that the decisions are mutually supportive and consistent with one another. Further, they aim to have the collection of decisions support or facilitate the overall business strategy. The decision categories are briefly discussed hereunder. Structural Decisions Vertical Integration. Vertical integration decisions answer questions about how much of the Value chain a firm should own. Should they own more or less of the value chain reaching back to their suppliers?

Should they own more or less of the value chain reaching forward to their customers? Issues considered include cost of the business to be acquired or entered; degree of supplier reliability; the proprietary or nonproprietary nature of the product or process to be brought in house; transaction costs of contracting through market versus non-market mechanisms; and impact on risk, product quality, cost structure, and degree of focus. Process Technology. Process technology decisions relate to the firm’s investment in the technology it uses to transform materials and/or nformation into products and/or services. Evaluation of this investment requires a firm to address several questions: Should its process be more labor intensive or more automated? Should it purchase technology or develop it in house, or use some combination there of? Should it be a follower or a leader in process technology investment? How does its process technology investment fit with its product technology development strategy? Capacity Capacity decisions establish how much capacity the firm will carry in order to manage both short-term fluctuations in demand and longer-term growth opportunities.

Capacity For IBM4710 Inter OM Chayakrit Asvathitanont, Ph. D. may be added gradually or in large chunks. How should the firm deal with cyclical demand? Different types of capacity may be added at different times. How should the firm use capacity to influence its competitors’ decisions or actions? Facilities Facilities decisions are often closely related to capacity decisions, as firms may add or close facilities in response to a need for more or less capacity, but are often longer-term.

In thinking through its facilities decisions, a firm will answer questions about how many facilities it should have, where they should be located, and what they should do. Facilities issues become even more crucial in a global environment as firms decide whether to locate facilities near the local market to increase share in that market, to access local technologies, to reduce costs, or to leverage local talent. Infrastructural Decisions Sourcing. Sourcing decisions follow closely from vertical integration decisions.

Once a firm has decided not to own certain parts of its value chain, it must determine what types of relationships it should have with the entities outside the boundaries of the firm. Should the suppliers be managed with the five forces competitive-strategy framework suggested by Porter in this chapter, or with the more cooperative approach modeled by the Japanese keiretsu? Business processes, such as product and service Business Processes and Policies. generation, order fulfillment, and service and support, cut across functional boundaries in an organization and are critical in serving the customer.

Business process decisions include determining and defining critical processes, setting performance goals for each, and then choosing an appropriate organizational design to met those goals. Some of the organizational design questions include: How should the operations organization be structured? What are the roles of the line and staff organizations? What skills are required in operations? How should those skills be developed and retained? How should Those skills be developed and retained? How should operations personnel be rewarded? Supply Chain Coordination.

While business process management focuses inside the organization, operations management today often requires management of multiple sources, markets, and flows outside the firm as well. Thus, operations managers face strategic decisions about the structure of the supply chains. Should they co-locate their own operations with those of their suppliers? How many layers should they have in their distribution networks? What modes of transportation are appropriate for which links in the supply chain? How should flows of goods among the various entities in the supply chain be monitored?

Information Technology. Information technology and process technology decision are closely related, but process technology decisions relate to the physical equipment with which products and services are made and delivered, while information technology refers to the system that moves information around the operations function, between operations and the other functional areas in the firm, and among the players in the broader supply For IBM4710 Inter OM Chayakrit Asvathitanont, Ph. D. chain. There are a number of decisions operations managers make about their information technology.

How automated should information processing be? Should information systems be purchased or developed internally? Should the firm be a follower or a leader in the development and/or use of state-of-the-art-technology? How does the information technology investment fit with other investments the firm is making? Operations Capabilities Development. There is some evidence that traditional operations improvement programs such as lean manufacturing, just-in-time, total quality management, focused factories, and the like are misused by managers.

Often hastily adopted as an industry best practice or in emulation of a competitor, these programs can yield poor results, wasted effort, and missed opportunities for an organization. When thoughtfully and fully implemented, however, they can be enormously successful. In developing operations strategy, managers must examine such programs and consider the capabilities required to develop and implement them. REFERENCES Andrews, K. (1971). The Concept of Corporate Strategy, Dow Jones-Irwin: Homewood, IL. Beckman, S. L. , D. B. Rosenfield. (2008). Operations Strategy: Competing in the 21st Century, U.

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