innovation strategy

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Conceptual Overview

Innovation strategy is the design and implementation of measures by which the organization improves or creates new products, services, and processes. The nature of innovation is determined by the scope for which the organization is innovating. Innovation ranges from the incremental improvement of existing products to a more radical approach of disrupting and reinventing industries. Open innovation processes include external sources of knowledge, ideas, and inventions. Closed innovation relies on internal company resources, research, and development.

Incremental Innovation Strategy

Incremental innovation is concerned with the gradual improvement of existing products, services, processes, competitive positions, and organizational paradigms. The different forms of incremental innovation are as follows.

Products and services are modified incrementally by adding new features or by extending the product line. For example, Nokia, Samsung, Huawei, and Motorola improved mobile phones over the years by adding calendars, texting, web browsers, touch screens, and voice recognition, gradually transforming the phone into a fully fledged smart phone. Auchan and Carrefour, the international supermarket chains, capitalized on an established customer base by extending their retail mix to financial services such as credit cards, savings account, and insurance.

Processes and internal operations are modified gradually by lowering the cost of delivery, optimizing back office operations, reducing nonvalue-adding operations, and adopting lean and six-sigma methods. A case in point is Apple, which shifted its manufacturing base to China to access lower labor cost of factory workers and trained industrial engineers. The company employs thousands of direct employees in China and over 650,000 assembly workers at subcontractors. Vodafone International Services provides automation and streamlining of back-end processes for companies that want to upgrade internal operations, such as billing, sales, and data mining, but may not have the internal infrastructure to do so.

Competitive positioning of a company can be adjusted incrementally by customizing existing products for different market niches. The retail chain Esprit embarked on an initiative to segment its products on its online platform. The online retail environment is designed to lead customers to different product offerings according to age group, lifestyle, and psychographic profiles. Business schools around the world actively seek to improve their competitive position by adopting a global approach to learning and reaching out to potential students in new geographic markets.

Organizational paradigms define the underlying business model and can be modified through small adjustments in the way of doing business. Some of the world's largest law firms such as Baker and McKenzie, Clifford Chance, and Linklaters have developed a more holistic service model moving into areas of financial services and management consulting. The organizational paradigm for publishers has evolved from hard cover and paperback books to electronic publishing on online platforms.

Radical Innovation Strategy

Radical innovation involves a much higher risk than incremental innovation. A Darwinian shake out of radical innovation is likely to occur. Most of these innovations do not make it to the market. However, when a radical innovation is accepted by the market, the rewards are substantial. In Blue Ocean Strategies, Kim and Mauborgne describe how a small number of innovations (14% in their sample) contribute to 38% of revenues and 60% of profits.

The different forms of radical innovation are as follows.

Products and services are modified radically by a complete departure from the norm. Amazon and eBay challenged services offered by book stores and newspapers. When Amazon entered the market in 1994, its online portal initiated a drastic shift from the book store environment. eBay introduced a radical shift in the retail market for general goods on several levels. The second-hand goods market, traditionally restricted to classified advertisements in local

Wiley Encyclopedia of Management, edited by Professor Sir Cary L Cooper.

newspapers, moved to the international online market. Auctions were introduced as a method of determining pricing for low-cost items, a practice that had traditionally been associated with antiques and art.

Processes can go through radical shifts by changing the operational paths. High street retailing has been challenged by a more accessible online environment, as face-to-face contact selling is moving to online self-service stores. The same applies to financial services. The vast majority of transactions for HSBC Holdings, Wells Fargo, JP Morgan Chase, and Citibank are conducted online. The radical innovation is dismantling the traditional radial delivery systems of branches, intermediaries, and subsidiaries.

Competitive positioning in the market can go through radical innovation by adopting strategies that are diametrically opposite to those of incumbent firms. Ryanair, EasyJet, and other low-cost airlines recognized that airlines operated in a quasi-monopolistic environment and had accumulated substantial overheads. Airfare prices were inflated with costs that did not add value. New airline companies were set up and developed on a financial model of frugal innovation. The same travel service was stripped of all unnecessary costs and repackaged at a much lower price for consumers.

Organizational paradigms can shift with radical new business models. Fifty years ago, aerospace manufacturer Rolls Royce launched the revenue model of "Power-by-the-Hour" to supply and support Viper engines installed in business jets. The service, which is still in place today, provides the replacement of engines and parts at a cost-per-flying-hour basis. Amazon went through a paradigm shift when it moved from a B2C model of online retailing of books (from publishers to the consumer) to an open C2C model (where consumers could sell their second-hand books to others). eBay went in the opposite direction when it modified its C2C model and added B2C functionality to attract other retailers to sell on its portal.

Open and Closed Innovation Strategies

Open innovation gathers knowledge from sources external to the organization. The Linux foundation adopts a strategy for developing software where the source code is made available online in order to encourage a wide base of contributors. Closed innovation models maintain a high degree of central control over the innovation process. Research is conducted entirely inside the organization and is kept secret or protected through patents. The Windows platform is an example of closed innovation.

There is a new trend to deploy a mix of open and closed innovation strategies. As companies are increasing the diversity of sources from where they seek new ideas, innovation processes are becoming increasingly complex with different parts of the process outsourced to a range of partners.

InnoCentive, an intermediary company for the procurement of innovative solutions, conducts online competitions for inventors with the scope of finding the match for their clients' needs. Although the process starts with an open bidding process, it ends with a closed regulatory framework that defines who has access and authority over the successful inventions.

A similar approach is adopted by P&G in the "Connect and Develop" program, created to encourage external innovators to come forward. The company's open innovation strategy has enabled it to establish more than 2000 agreements with partners around the world. The agreements would move the process from an open mode to a closed mode as new products and solutions are protected and patented.

Designing a good innovation strategy necessitates an understanding of the internal and external environments. The internal environment includes aspects such as the resources available and the technologies used within the company. The external environment looks at market opportunities, competition, or the regulatory framework. A detailed analysis includes one or more methods for scanning the environment, such as internal strengths and weaknesses, external opportunities and threats (SWOT) analysis, political, economic, social, technological environments (PEST) analysis, Delphi models, or ethnographic studies with consumers. The selection of what and how the analysis is conducted depends largely on the scope of the strategy in terms of products, processes, or administrative operations.

Research and Development Strategy

A company innovates its products and services through internal research and development (R&D), or through the acquisition of ideas, ventures, patents, and licenses to adopt inventions. Innovation strategy requires careful planning to minimize the chance of failure and to increase the probability of a successful outcome. Innovations are more likely to be adopted by the market if the R&D efforts have the following characteristics:

1. alignment with market needs;
2. identification of the right technological methods;
3. sourcing of the necessary internal and external information;
4. building knowledgeable, skilled, and flexible research teams; and
5. agile innovation infrastructure that can adapt to new research findings.

R&D requires a high level of investment and carries a high risk of failure, which has led companies to look elsewhere for sources of innovation.

Frugal innovation has emerged as part of corporate strategy and makes use of the following three different approaches (*see* FRUGAL INNOVATION):

1. Simplifying product components and manufacturing processes into basic elements, in order to redesign both the product and the processes to become more efficient and cost-effective. Through frugal innovation products such as mobile phones, cars, and appliances are stripped of irrelevant and costly features. Frugal innovation creates less complex and more streamlined products that are easier to handle and considerably cheaper to produce.
2. Using flexible supplier networks, which are efficient in reducing costs and increasing flexibility. The objective is to contract a wide base of suppliers and to encourage them to engage actively in product innovation.
3. "Bandit" or "guerrilla" innovation created by copying or modifying existing products, benefiting from weak property rights in different regions of the world. This fringe industry harbors talented innovators, who rapidly produce copies of high-tech gadgets. They produce new products that are cheap enough for low-income workers to be able to afford them, and fashionable enough for young professionals to want them.

Procurement Innovation

The innovation of procurement processes involves redesigning the way resources are acquired in the company. The acquisition process ensures that goods and services are purchased at the best cost, are of good quality, and satisfy the scope of the organization. Strategic goals may include those of ensuring better quality, improving efficiency, delivery timing, and reducing stock levels. To attain these objectives, a company may decide to shift a percentage of traditionally face-to-face purchases to e-procurement or minimize the diversity of suppliers, in order to gain on large quantity discounts. Procurement innovation may take the opposite approach. Rolls Royce holds a policy that 5% of suppliers should be new, small companies. The approach harnesses the radical innovations that emerge from new organizations that are located away from industrial hubs and that are free of the industry paradigms that build up and cause creative inertia. Actively seeking new suppliers also fits in the objective of corporate social responsibility as it extends business opportunities to a wide base of new entrants.

Manufacturing Innovation

Goals for innovating within a manufacturing facility may focus on increasing process efficiency, reducing defects and reducing costs of materials, labor, machinery, and infrastructure. Innovation can be achieved by investing in new machinery, changing work practices or automating one or more parts of the manufacturing process. Innovation strategy varies from simple changes in the order in which parts are produced to complete relocation of production facilities or outsourcing of entire processes.

Distribution Innovation

A company may decide to market and distribute directly to the consumer or to use specific distributors. An innovation strategy may look at improving specific areas of the process such as the selection of intermediaries or the automation of order processing with distributors. Goals could be either intrinsic or extrinsic. Intrinsic goals involve changes in the distribution chain such as the reduction of logistical costs or inventory. Extrinsic goals look beyond the distribution process and focus on external factors, such as increasing customer satisfaction on delivery times, returns and refund policies.

Retail Innovation

Retailing has seen radical changes in recent years. New technologies have facilitated the transport of goods, by enabling direct delivery to consumers and by creating entirely new retailing approaches. Examples of the latter are internet-based retailers such as Amazon and eBay. Although these have created new market opportunities, they have caused disruptions for incumbents who lagged behind on innovation. By implementing highly efficient IT infrastructure, Zara and Benetton are able to detect early changes in the demand for fashion items and to use the information to improve their competitive advantage. Other strategists include South West, EasyJet, and Ryanair, who redesigned the way airline tickets reach consumers, leaving intermediaries struggling to find new market differentiators when a large percentage of consumers started buying tickets through these online channels.

Marketing Innovation

A marketing innovation strategy outlines a company's plans to develop products, pricing policies, distribution methods, and communications. It also defines how each objective will be implemented and what resources will be required for each part of the marketing mix. From a marketing perspective, product innovation occurs over three levels: the core function of the product, the delivery of actual value to the customer, and the augmented value delivered through ancillary benefits such as guarantees and loyalty schemes. As discussed earlier, product innovation involves product line extensions. Pricing innovation occurs through the selection of policies that are cost, competitor, or customer oriented. Radically, new pricing models may emerge, as in the case of eBay's auctions, or Google's cost-per-click revenue model of advertising. Distribution innovation, which was discussed in the previous section is theoretically a marketing function, but often falls under the responsibility of the operations department. Innovation in customer communications occurs at the level of developing a brand image, advertising, public relations, direct selling, and product promotion.

Implementation of Innovation Strategy

The task of implementing strategic innovation requires a systematic approach to taking the organization through the stages of:

1. idea generation through a creative culture;
2. idea selection of the concepts that are likely to succeed;
3. concept development of which areas to innovate and how to go about it;
4. design of the new product, service, or process;
5. testing of the innovation, adjustment, and improvement; and
6. launching the innovation internally within the organization or externally in the market.

Viable innovations pass through all six stages after thorough testing and development at each stage. Companies face a delicate balancing act of promoting innovations through the process funnel or having to call off the project when it fails at any one of the stages. The stage-gate model developed by Robert Cooper involves placing in a set of gates at each stage of the innovation project and evaluating its progress against preset goals and objectives. A new product can be tested in pilot markets as part of the fifth stage in the innovation process. If the product fails in the test market, then the company has a clear indication that the product will not meet its market share and revenue objectives. On the other hand, if the product passes the test, the "gate" will remain open and the product proceeds to the sixth stage. Decisions may be based on hard data or a set of more tacit variables. The scope of having a stage-gate model is to have a logical process in place where managers can review information about technological and market viability of the innovation.

Other "best practices" of implementing innovation include:

1. engagement of stakeholders in the early stages of innovation;
2. developing parallel teams to work on different areas of the process;
3. project management of resources, skills, and timelines;
4. infrastructural resources such as online collaborative software, materials, and equipment; and
5. EVALUATIONS and knowledge transfer across teams and across stages.

In larger corporations, the systems described above follow a linear progression. Online systems have made it possible for smaller more agile companies to have geographically distributed contributors to work asynchronously on the same project, pooling resources, knowledge, and ideas. Threadless, a clothing design and retailing company, pioneered a successful business model where online crowds of volunteers design t-shirts and judge which of the designs are selected and placed on sale. The open innovation process has freed the company from employing the designers and marketing executives required to predict which shirts customers are most likely to buy. It also increases brand equity as customers become part of the Threadless design community and are offered a share of the profits from successful designs.

Future Direction

Through the increase of global connectivity and ubiquitous information systems, analytical tools are providing marketers with real-time feedback from global sources. In combination with constantly growing computing power, innovation strategy will be able to make use of larger amount of data for analysis such as online trends, instantaneous sales data, global web traffic, and the measurement of customer behavior.

See also *disruptive innovation*; *frugal innovation*; *hypercompetition*; *innovation blowback*; *technology and standards in network industries*

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