

*Research*

## The Critical Success Factors of Developing New Products in the Marketplace

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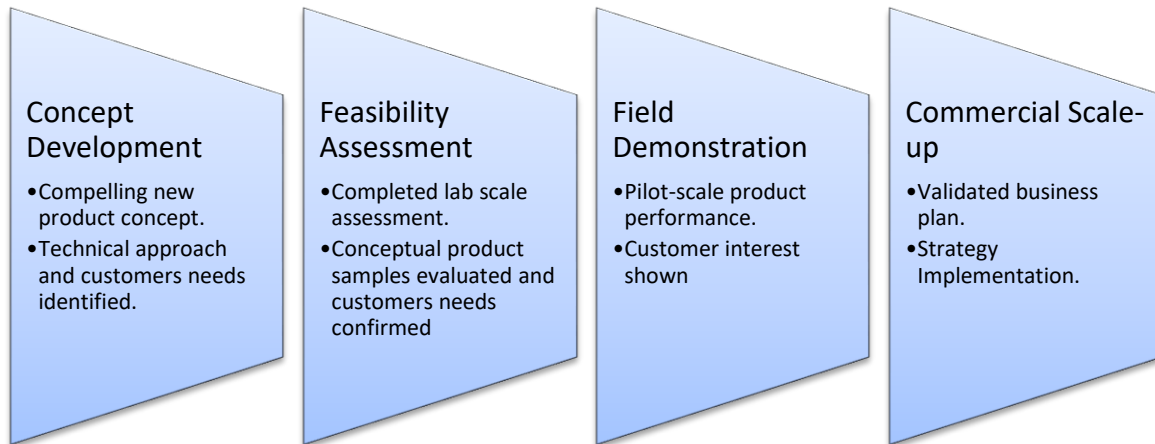
**Abstract:** *Development of Successful new product is rough, particularly for truly new products. How can companies productively expand and commercialize such kind of products and what types of factors affect new Product success? The latest study aims to respond to this main question. An amount number of Leaders are capable of creating completely new industries are supported to build conditions under which groups could learn from failures, past experience who wish to develop their company's capacity to build up the kind of products. And also critical success factors are also significant in some business areas. With the purpose of fulfilling their purposes, the studies have focused entirely on many features of the management of new product development in companies, and also challenged to weave them to a number of substitute effects. This has entitled for the quantity of "success" itself. And this paper also concentrates on four innovation strategy with examples.*

**Keywords:** *new product, success, business*

### Introduction

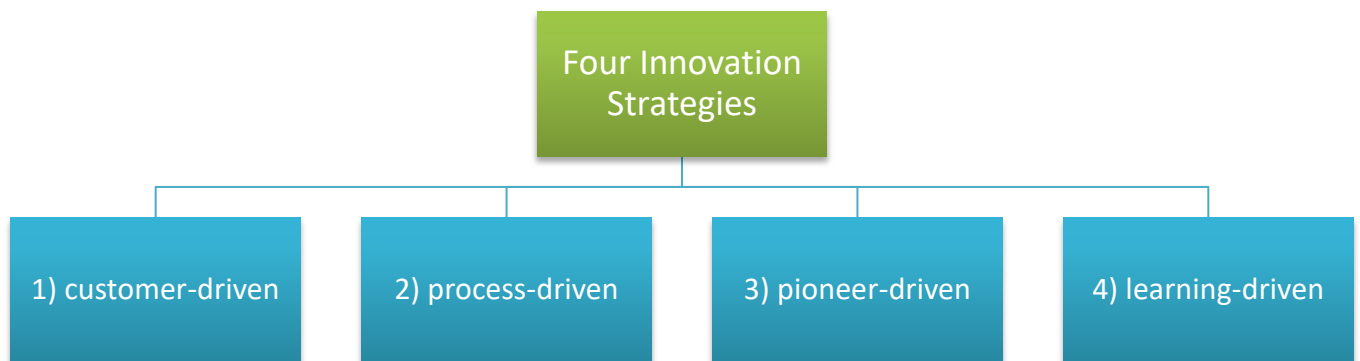
New Product Development is quite difficult to deal with. However, we can improve and revolutionize If it is taken into several phrases. New product development involves: Formulating new product concepts; assessing the feasibility of the concept from technical, manufacturing and business standpoints; demonstrating the product's performance and benefits and the viability of the business opportunity; scaling up to commercial status (Figure 1). Unfortunately, it is easy to invest far too much time and money early in the process, before determining that the product is even viable. Sometimes this judgment is never reached until the project is terminated.

This analysis focuses on the early stages of new product development when there is the greatest degree of uncertainty. It is here that the greatest number of delays and failures occur, and also where significant time and money can be saved by learning from the experiences of others.



It has been clarified that Innovate superior and closer than your competitor (also learn from the experience of others) If you decidedly yearn for securing a competitive advantage in the market; wrap or trip up and your company can be interrelated to performing catch-up for existence. What should companies do to progress the ability to innovate?

In the past 2 decades, A number of studies have been done to determine the critical drivers of innovation success. In their orientation 4 innovation strategies, which is varying in the point of reference has emerged from this research. Moreover, Professor Gary Lynn’s research also plays an essential role in determining this.



### Four Innovation Strategies

When revealing customer wants and needs, and then the focus is gathering those needs in a customer-driven strategy. In marketing and marketing research customer-driven strategies are regularly ingrained. For identifying the market segments and uncovering the demand drivers, customer dissatisfaction formal and informal analyses are used. President of Boeing Company states that they defined this airplane by listening to the airline customer in the development of 777, his company’s customer-driven strategy (1). There are some words that can describe the approach for instance “market-focused,” and “voice of the customer” (2). In this strategy a customer request usually initiates the innovation effort (3). For example, The meeting between Thomas Edison and Corning people to talk about his requirement for glass light bulb is typical example of a customer-driven strategy in 1879. After a few months later from that meeting, Corning’s shop started to produce a bulb to Thomas Edison’s requirements (4).

The innovation effort follows a systematic process that begins with evaluation, testing, development, and commence. Systematic product development (NPD) process and the importance of having a rigorous have been shown by many studies. Cooper found out that how well every NPD process activity had been carried out exaggerated the overall new product success probability after learning 103 projects from 21 firms (2). And his studies have been duplicated by many others (e.g., 5, 6, 7, 8).

*The Four Innovation Strategies*

Strategy	Motorola Cellular Phones	GE CT Scanners	Corning Optical Fibers	Searle NutraSweet
<b>Customer-driven</b>	Weak	Extensive <sup>1</sup>	Extensive <sup>1</sup>	Weak
<b>Process-driven</b>	Extensive	Moderate <sup>1</sup>	Moderate	Weak
<b>Pioneer-driven</b>	Weak <sup>2</sup>	Weak <sup>2</sup>	Extensive	Extensive
<b>Learning-driven</b>	Extensive	Extensive	Extensive	Extensive

Seizing the first opportunity is the key to the marketplace; this is how the pioneer-driven strategy is. Nevertheless, Choice between pioneer or follower is the most struggling question to company executives. Many scholars state that a firm not only can capture a larger market share but also manage better long-term profits (e.g., 9). Competitive advantages that persist throughout the product life cycle can be generated by a pioneering strategy (10). Additionally, on an enduring

market share this entry order can also have a critical impact (11). It is mentioned that best marketing plan and new product not to do much against a competitor first to the market by Gruenwald (12). However, Faults in the pioneer's product can be corrected by followers to enter the market with a superior product so there is an indication that proposes that a pioneering strategy might not enhance (13).

The emphasis is on subsequent and better-informed steps as it is not on the first step in a learning-driven strategy. For gaining information the companies focus on using every access in the process of innovation that will point out the next steps that should be taken (14-16). Ray Stata who is chairman of Analog Devices, argues that he would dispute the rate at which individuals and organizations learn may be converted into the only sustainable competitive advantage, above all in knowledge-intensive industries" (17).

Although the steps are not well defined or predetermined, except still unfold over time as much more information is obtained in a learning-driven process. Obviously, a game of five-card draw poker reminds this strategy. First, you gain information then you draw the subsequent cards, and the opponents' actions will your strategy emerge.

### **Strategy for Really New Products**

Customers' wants and needs can be easily established by using traditional marketing research, such as phone surveys, mail as it leads a company to simplify the choice of an innovation strategy on mounting incrementally new products. The technology to make incremental innovation usually does not drastically differ from conventional practice at the same time the NPD process is also simplified.

Radical innovation is more complicated to select an appropriate strategy for extremely new, however. With well-understood production processes, Incremental innovations are targeted to known market segments, with unproven production technologies uncertain markets are targeted by radical innovation. At the beginning of a project, the ultimate customer is usually enigmatic and unknown from the market perspective. Final product costs are established as the technology becomes classified and the actual production costs Even though a preliminary target market might be visualized.

Consequently, Radical innovations can cost significantly much more commercialize; moreover, they take longer to develop. For example, during the 1970s and early 1980s, Corning spent over

\$100 million on fiber optics earlier than any significant sales were made (18). To develop the 360-line of computers over four years IBM used up in excess of \$5 billion (19).

The issue of timing makes difficult the challenge of radical innovation: the suppliers are able to produce the product, the time until the customer is ready to adopt the new technology – and bring into being it cost-effectively. If the technology and market evolve and change over time it is compounding matters (15). As a result, the question arises, which innovation strategy is most proper and more valuable?

### **The Research Approach**

To carry out this concern, we studied really new innovations' four in-depth cases in different companies whether the classic approach would have been to compare successfully or not. But It is complicated to link management practice to project outcomes cause of the uncertainties present with radical innovations; i.e., good management practices Can lead to unsuccessful projects. For these cases, we chose the dissimilar sample strategy: We decided on successes that were as different as possible. We pass up the problem of confusing conclusions based on botched projects by bordering the sample to cases of success.

The cases investigated included Motorola's cellular phones, CT scanners, Corning's optical fibers, and Searle's NutraSweet. They differed from each other along with a number of dimensions by company size, degree of diversification, production environment, and product type. If we found similarities between cases these differences gave us confidence that our conclusions could be taken a broad view beyond the single company or product type.

### **One Consistently Successful Strategy**

After taking interviews from 78 individuals from the original innovators to their CEOs, and proving information from at least two sources, we found that only one strategy was used successfully by each company although some companies used more of the four innovation strategies – the learning-driven strategy (see Table, previous page). The remainder of this article discusses how each of these innovation strategies was used and concludes with what managers be capable of doing to improve the chance of captivating in uncertain new production environments.

The customer might not be an accurate barometer of the innovation's true application so being customer-driven can be deceiving. For instance, Corning, In response to a customer request he

developed optical fibers. As Corning succeeded in delivering the requested product, the customer was no longer interested in them!

As background, BPO (British Post Office, operators of the British phone system) stated interest in offering picture telephone service. BPO engineers thought optical fibers could provide the transmission medium for the high-capacity picture phone signal. But BPO had stopped on picture phones reason for the enabling technologies to make picture phones feasible were still unrefined and too strictly when Corning attained the six-fold improvement that the new optical fibers demanded. Charles Lucy describes it as, “We were all dressed up and had nowhere to go.”

In a large part due to demands from radiologists at the Mayo Clinic when GE built up a CT breast scanner a similar outcome occurred (20). Regrettably, the scanner was unable to discriminate between healthy and timorous tissue. It was the wrong submission for technology.

There are other scholars who have stressed the limited value of listening to the voice of the customer for really new products. They would not have indicated their disappointment with shifting gears if you would have asked people for likes or dislikes; nevertheless, it was broadly accepted when automatic transmission was introduced (21). “In truth, no one really needs a computer until the day he gets one. Then he can’t live without it”. In the computer industry, a similar situation happened back in the 1980s – many more people could not envision the need to own their own computers (22, p.60).

The second innovation strategy used by Motorola is being process-driven, but it was not the guiding approach that NutraSweet, GE or Corning followed. The process seemed much less preplanned and thought-out in these companies. During the development cycle, the GE CT team encountered many more obstacles. The net result took the team quite a few iterations through the process to get it right. First, GE tried to selling ahead scanner which is made by Neuroscan, but customers were dissatisfied because it still did not produce clear images of the head. Then, GE engineers developed a breast scanning, but this failed in the market because it could not differentiate healthy tissue from cancerous ones, and even a full-body scanner had been found unsatisfactory with mysterious “ring” in the images. Finally, the company commenced the 8800 full-body scanners after four trails, a product helped GE secure 68 percent of the CT market, surpassing EMI, the industry leader.

Bobby Bowen, who became vice president and also general manager of advanced technology, described the process GE followed on the CT: “*Several cases have been written about the history*

*of CT, but they don't describe anything that I recognize. They tend to project what ought to have been rather than was. There is a tendency to assume that a lot more occurred by planning than what actually occurred... In fact, one thing tended to follow from the next. There were a lot of curves on the road that we hadn't anticipated. We took things as they came (18)."*

Searle with NutraSweet followed a similarly convoluted process. The top two precedence applications were: No.1, for use in carbonated beverages, and No.2, as a spoon-for-spoon replacement for sugar after the benefits of NutraSweet, were settled on. Unfortunately, the NutraSweet team initially could not perfect these applications. As a result, Searle used its new product procedure to expand a NutraSweet tablet, and NutraSweet as an ingredient for selected applications, for example, whipped toppings, dry beverage mixes, cold breakfast cereals, and also chewing gum sticks.

A number of problems emerged after the Food and Drug Administration supported NutraSweet for those secondary applications. Product developers were not capable of perfecting it for cereals or ice cream for a diversity of technical and cost causes. And after the other ten years did the FDA finally back up NutraSweet for the No.1 and No.2 applications.

Searle and Corning relied on being pioneers, and in their respective markets, this helped them to secure a dominant arrangement. For Searle, 98 percent of all American adults managed to name from a list of sweeteners, and 70 percent could name it as a sweetener unprompted because of different innovation on the marketplace (23).

Nevertheless, both of the companies, Motorola and GE followed a follower strategy, and this strategy was one of their critical factors. These companies learned about the strengths and shortcomings of their competitors' products by being a follower. With its fan-beam technology, GE was able to smash the industry pioneer EMI, as compared to AT&T's mobile phones, at the same time, Motorola's portable cellular phones offered more beneficial features more.

As the one consistently and effectively applied strategy, a learning-driven strategy materialized (in contrast to the other three approaches). Determining areas, which applications and market segments were most receptive to different features of the product were involved by learning, for example, regulatory changes on the weight of other factors.

### **How the Teams Learned**

CT team was allowed to turn dissatisfactions into successes for GE by a learning-driven strategy. GE's developers learned in relation to the technical feasibility of the new-fangled technology

Although GE's breast CT, and its first full-body CT (the 7800) were unsuccessful in the marketplace. The learning expanded by the team offered them the confidence to continue working on this technical approach and try to improve it despite all the obstacles they encounter. Additionally, their efforts paid off, with GE introducing an improved 8800 body scanner since it dominated the CT industry.

From 1973 until 1981, the development team was taught about the critical performance parameters, which is needed in a cellular phone, and likely computer response by producing four generations of cellular telephone prototypes. For instance, at what time the company built up the first-generation prototype, the developers learned about weight and size were critical. For the next 20 years, these factors became the driving performance parameters. Marty Cooper describes the learning which is gained from the first prototypes: *"The first unit weighed about two pounds, which was obviously too heavy. You could talk on the phone for a maximum of five minutes without your hand getting tired. We learned from people, such as Congressmen, who tested the unit, that the portables had to be smaller and lighter. Then continuing through to today we continue to reduce the size and weight (20)."*

During the early years of optical fiber program, was the cabling companies and telephone were out of the ability to hold close these new technologies, as well as detectors and the light-source transducers, over and above coating processes and caddying, were not cheap, and unproven. As a result, Corning decided it had that it had to improve the technology and also market itself.

For producing the full optical fiber system, Corning entered a joint venture with Siemens (called Siecor) to generate the full optical system and offer it to customers directly. After the divestiture of AT&T, Corning was come up toed by MCI about what proven to be the first considerable order for optical fibers in late 1982, after further than 10 years and \$100 million worth of development. The long-distance telephone marketing for fibers of Corning was blowing up within a year. In 1982, sales grew from 1.6 million kilometers and \$220 million during 1986.

Like the other example Searle relied on a learning-driven strategy with its NutraSweet. But this company one did it learn about working with the FDA and also about commercializing a food product. As an example, in late 1981 and early 1982, the market reacted very differently from what they expected when Searle starts one its sugar substitute packets. The company found out that the target market had changed from the original segment. As late as 1981, the target market



was saccharin users, and customers had no alternative low-calorie artificial sweetener until that time because of prohibition in the 1960s.

In 1981 and 1982s, by the development team, the market had been found that there were not saccharin users when Searle launched NutraSweet in regional test markets. The product was able to address the new and unanticipated target segment because Searle's product development and marketing team entirely changed the marketing of Equal and its positioning. Later, sales of NutraSweet took off to \$74 million in 1982 and \$336 million in 1983.

Optical fiber, CT, and cellular phones' phony start, setbacks, unexpected and unpleasant developments were served as a model for NutraSweet is a good way to success. After a long and difficult process, success came into sight, and each team also learned to improve its products.

### **What Managers Can do**

There are two things that every new product faces up and do, they might create new industries or redefine competition in an existing industry. Derived from the study of these four distinct cases, it is concluded that there are some recognized innovation strategies – e.g., listening to the “voice of the customer” – may not be appropriate for new products (they may be the wrong approach). The explanation is that customers can be identified, they would be able to inarticulate their frustration with the current product, service or to appreciate the good sides of the new product. Additionally, the customer and the product will change during the development effort and the further cause difficulties the “correct” customer or target marketplace.

Events and strategies may unfold over time; that is the reason why a process-driven strategy is inappropriate. In “Heartbreak Ridge” of Client Eastwood: “Adapt, improvise and overcome.” As a pioneer, a follower can easily be successful, striving to be the pioneer is not also the critical determinant of success.

The key to succeeding in real new products is the degree to which teams manage to be trained from prior steps - commonly in unpredictable ways – act on the information. For these products, the successful innovation strategy is similar to “Huckle Buckle Beanstalk” game of children (like the one-child hides and others try to find it). From the feedback given by the person who hid the object gives clues as “getting warm” or “colder”, the person who can fiddle with quickest wins. In a similar fashion, the new product team will be in a better position to improve its product and win in marketing, which is able to obtain detailed and rapid feedback about marketing and technology.

Learning was happenstance but not systematic. The challenge of every new product is to think hard about deliberately learning from past efforts and projects – but how? And what can teams do to learn more, better and faster? The following are suggested:

1. Do not anticipate getting the first time right (it can lead to a second step). Do not get discouraged if you score out the first time up. Try to find the source's fault and correct it.
2. Do not fire the scout. Do not tempt to bring in a new team because the team may have fallen short of the initial goal and encountered obstacles. Another chance must be given to them whether they can use what they learned to succeed.
3. Embrace information and build on it. Try to be proactive in seeking out early customer reactions. Help the customers personally when you sell the first few units, have your engineers deliver them. At worst, they correct that problem for the next iteration, or able to correct it at best.
4. Structure of learning to the team. For conducting the systematic post-launch meetings, determine what has gone right and wrong. For each project, create a “Lesson Learned” document for projects and have the managers read that past “Lesson Learned” documents.

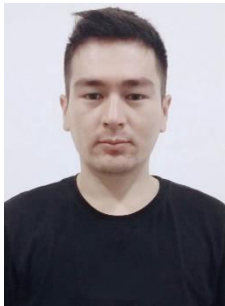
It does not be that difficult to create a new product, just it takes patience. It means you work with them without kicking them out. Finally, they will figure out what things must be done and how to be done. As a result, you can be the witness of what managers are supposed to do.

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