

Forms of Innovation for Successful Organizations

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Abstract: If innovation comes in a variety of shapes and sizes and is used by different people to mean different things, then making coherent sense of the subject is not an easy task. Grouping innovations into categories can help. Essentially, by putting innovations in groups, it should make it easier to make sense of innovation as a whole simply because one can then take each group in turn and subject it to detailed scrutiny. If it is easier to make sense of a small group than large one, then we should be on the way to making sense of innovation.

Keywords: Innovation, organisation, forms, process, product incremental.

INTRODUCTION

Each creative idea that an organisation develops poses a different challenge for the innovation process [1]. Innovations can be radical or incremental, technical or managerial and product or process [2].

The largest group of researchers is investigating near-term product and process innovations designed to be marketable within five years. This approach is a break from the past, when Bell Labs researchers pursued promising lines of scientific inquiry without having to consider the potential commercial implications [3]. Researchers at today's Bell Labs are much more geared toward studies with real-world applications. From such research has come PathStar, a Lucent product for allowing voice signals to be transmitted along internet networks, and the Lambda-Router, a large-scale all optical switching device [4].

Despite the emphasis on products and processes that have more immediate commercial application, about 20 percent of Bell Labs researchers doing basic research are looking for breakthroughs that might lead to radical innovations in the distant future. In addition, Bell Labs maintains a venture capital unit to fund internal research into diverse projects, such as fingerprint identification technology [5]. Even as product-oriented incremental research and development continues in other parts of Lucent, Bell Labs keeps its researchers pointed toward the innovations of tomorrow and beyond.

Radical Versus Incremental Innovations

Radical innovations are new products, services or technologies developed by an organisation that completely replace the existing products, services or technologies in an industry. Incremental innovations are new products, services or technologies that modify existing ones. Firms that implement radical innovations fundamentally shift the nature of competition and the

interaction of firms within their environments [6]. Firms that implement increment innovations alter, but do not fundamentally change, competitive interaction in an industry.

Over the last several years, organisations have introduced many radical innovations. For example, compact disk technology has virtually replaced long-playing vinyl records in the recording industry, and high-definition television seems likely to replace regular television technology (both black and white and color) in the near future [4]. Whereas radical innovations like these tend to be very visible and public, incremental innovations actually are more numerous. One example is Ford's sports utility vehicle, the Explorer. Although other companies had similar products, Ford combined more effectively the styling and engineering that resulted in increased demand for all sports utility vehicles.

Technical Versus Managerial Innovations

Technical innovations are changes in the physical appearance or performance of a product or service, or the physical processes through which a product or service is manufactured [1]. Many of the most important innovations over the last fifty years have been technical. For example, the serial replacement of the vacuum tube with the transistor, the transistor with the integrated circuit, and the integrated circuit with the microchip has greatly enhanced the power, ease of use, and speed of operation of a wide variety of electronic products. Not all innovations developed by organisations are technical, however. Managerial innovations are changes in the management process by which products and services are conceived, built, and delivered to customers. Managerial innovations do not necessarily affect the physical appearance or performance of products or services directly. In effect, reengineering represents a managerial innovation, as we discussed earlier [3].

Product Versus Process Innovations

Perhaps the two important types of technical innovations are product innovations and process innovations. Product innovations are changes in the physical characteristics or performance of existing products or services or the creation of brand-new products or services. Process innovations are changes in the way products or services are manufactured, created or distributed. Whereas managerial innovations generally affect the broader context of development, process innovations directly affect manufacturing [7].

The implementation of robotics, as we discussed earlier, is a process innovation. As Figure-1.1 shows, the effect of product and process innovations on economic return depends on the stage of the innovation process that a new product or service occupies [4]. At first, during development, application and launch, the physical attributes and capabilities of an innovation most affect organisational performance. Thus, product innovations are particularly important

during these beginning phases. Later, as an innovation enters the phases of growth, maturity, and decline, an organisation's ability to develop process innovations such as fine-tuning manufacturing, increasing product quality, and improving product distribution becomes important to maintaining economic return [6].

Japanese organisations have often excelled at process innovation. The market for 35 mm cameras was dominated by German and other European manufacturers when, in the early 1960s, Japanese organisations such as Canon and Nikon began making cameras [3]. Some of these early Japanese products were not very successful, but these companies continued to invest in their process technology and eventually were able to increase quality and decrease manufacturing costs. Now these Japanese organisations dominate the worldwide market for 35mm cameras, and the German companies, because they were not able to maintain the same pace of process innovation, are struggling to maintain market share and profitability [3].

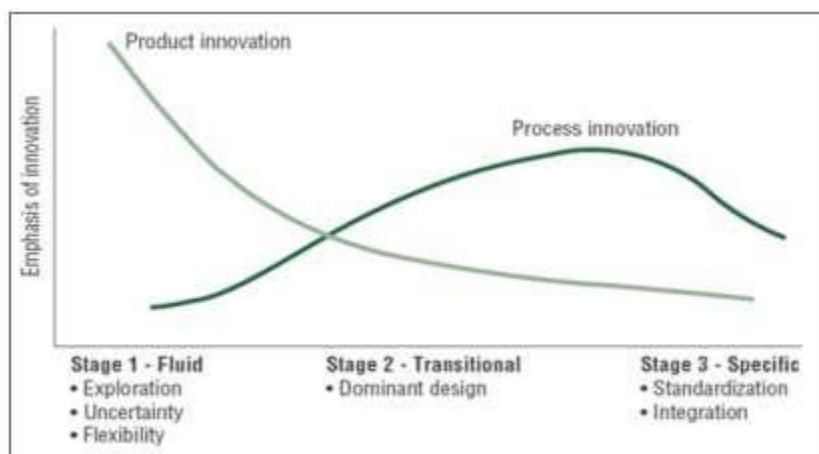


Fig-1.1: Effects of Product and Process Innovation on Economic Return [4]

As the innovation process moves from development to decline, the economic return from product innovations gradually declines. In contrast, the economic return from process innovations increases during this same process [4].

Technical innovation

A change in the physical appearance or performance of a product or service, or the physical processes through which a product or service is manufactured.

Managerial innovation

A change in the management process by which products and services are conceived, built and delivered to customers.

Product innovation

A change in the physical characteristics or performance of existing products or services or the creation of brand-new products or services.

Process innovation

A change in the way a product or service is manufactured, created, or distributed.

The Failure to Innovate

To remain competitive in today's economy, organisations must be innovative. And yet many organisations that should be innovative are not successful at bringing out new products or services, or do so only after innovations created by others are very mature. Organisations may fail to innovate for at least three reasons [6].

Lack of Resources

Innovations is expensive in terms of dollars, time and energy. If a firm does not have sufficient money to fund a program of innovation or does not currently employ the kinds of employees it needs to be innovative, it may lag behind in innovation [1]. Even highly innovative organisations cannot become involved in every new product or service its employees think of. For example, numerous other commitments in the electronic instruments and computer industry forestalled Hewlett-Packard from investing in Steve Jobs and Steve Wozniak's original idea for a personal computer. With infinite resources of money, time and technical and managerial expertise, Hewlett-Packard might have entered this market early. Because the firm did not have this flexibility, however, it had to make some difficult choices about which innovations to invest in.

Failure to Recognise Opportunities

Because firms cannot pursue all innovations, they need to develop the capability to evaluate innovations carefully and to select the ones that hold the greatest potential [7]. To obtain a competitive advantage, an organisation usually must make investment decisions before the innovation process reaches the mature stage. The earlier the investment, however, the greater the risk. If organisations are not skilled at recognising and evaluating opportunities, they may be overly cautious and fail to invest in innovations that turn out later to be successful for other firms [5].

Resistance to change

As Andrews [3], argues, many organisations tend to resist change. Innovation means giving up old products and old ways of doing things in favour of new products and new ways of doing things. These kinds of changes can be personally difficult for managers and other members of an organisation. Thus, resistance to change can slow the innovation process.

CONCLUSION

Innovation happens for several reasons. Innovation can occur as a response to consumer demand, a need to remove or overcome constraints (including costs), a desire to pursue a new opportunity, or a need to achieve greater efficiency. Industries that thrive on innovation—the classic “high tech” label—are those that face rapidly changing demand and market conditions.

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