

Innovations: From the Creative Idea into Reality
by
Bernard A. Kemp, PhD

The decision-making issues related to innovation fall into two categories. The first phase is what it takes to bring the idea to fruition -- to create the product or the process for the first time. The second phase is the production, marketing and distribution of it in order to make the novel creation -- the innovation -- available to the firms and consumers who are its potential customers.

Let's take a closer look at innovations and see how they affect the decision process.

When thinking about decisions surrounding innovations, we realize that initially the "idea" is just that. It does not yet have a physical form. As a consequence there is no guarantee that the idea will ever become a reality. And, if it does, what will it be like, what properties it will have, who will find them sufficiently useful to be willing to buy the novel product? Moreover, there is no way of telling initially how much time, energy, resources, and funds (TERF) will be required to bring the idea into reality.

Consequently, from the get-go there is no way of even knowing, predicting or estimating what it will cost to produce the product until the first version comes off the line.

An easy way to think about what it takes to create an innovation is to imagine an artist who comes up with an idea for a new painting or sculpture. Until they complete the work, it is impossible to know what it will be like. During the time it takes to finish the work, on a day-to-day basis, the artist must be able to have enough TERF to take care of themselves, to fulfill all prior obligations and commitments and to have enough discretionary TERF left over to create the work of art. Again, there is no way of knowing ahead of time how much time and energy it will take and how much equipment, materials, supplies and funds will be required. The undertaking is fraught with uncertainty. Furthermore, there is no guarantee of success.

Regardless of whether or not the outcome is ultimately successful, in the interim a considerable amount of disposable time, energy, resources, and funds (TERF) must be devoted to the endeavor. Importantly, that is TERF that could have been used to produce other goods and services. The TERF is given up in attempting to create the innovation.

Before the person who comes up with the idea can even attempt to make it happen, he/she must be able to take care of themselves by providing the basic inputs to survive and fulfilling all of their obligations and commitments. That is necessary before they put any time and effort into making the idea into a reality. The same is true for anyone who helps them along the way by providing some of the TERF that is required. In short, the necessary TERF must come from somewhere. When the project is unsuccessful it is like betting on a horse that doesn't win, place or show.

When the project is successful and when the innovation makes an important contribution, the innovator, the person or firm, that made it happen is entitled to be reimbursed for the TERF involved and to be rewarded for the successful contribution. Those funds can come out of the excess profits the company makes by selling the innovation to its buyers. Some of the funds may also come from government expenditures when it believes that the innovation provides the public with a benefit. Or from an individual or institution that believes the innovation makes a contribution to the social interest.

That is what is involved in trying to bring an idea into reality -- in creating an innovation. That is the process that the innovator goes through to transform an idea into an invention and invention into an innovation. It makes no difference whether the originator of the idea is an individual or part of a firm. When successful, they end up with a novel product or a new process of production, one that never existed before.

Patents are awarded for ideas -- inventions -- that are novel, useful and non-obvious. They put the creator's idea into the public domain. In exchange, the individual or company has exclusive rights to market the invention for a period of time, typically 20 years. Even though an invention is patented it does not mean it ever sees the light of day. In the 1930s my Dad got a patent for an umbrella tent. That's as far as it ever went. The first stage is completed when the new and novel idea -- the invention -- becomes a reality. The novel product or process of production, an innovation, then becomes available.

Now let's take a look at the next stage. Again, I'd like you to think of the innovation as if it were a new work of art. Since it is novel, the first step is to make people aware of it and of its potential. They have to understand the benefits of having it, along with the cost. The costs include the price, any additional expenditures required and the possible adverse effects owning it could have. With that knowledge potential buyers -- individuals and firms -- can decide whether they are interested in purchasing the work of art (or the innovation).

The seller has to come up with a price. Since the product has already been produced there is a better understanding of how much TERF is required to make it. That is essential in determining the price. Nonetheless, some uncertainty remains regarding all the steps required to make it happen. Consequently, there is some initial uncertainty about the TERF required to get the innovation to market and therefore about what its long-run costs will be. For the innovation to be a successful venture, the price customers are willing to pay must cover all the costs of producing, marketing and distributing the product.

The issues surrounding pricing are considerably more complex. For a better understanding of them check out my book entitled, [An Economist's Take on Pricing Art and Craft: A Pricing Manual](#).

Because of its very nature, initially there is only one producer of an innovation. That does not preclude the possibility that rivals provide products that serve a similar purpose. If the innovation

is patented, the single producer status is reinforced during the patent period. Effectively, the innovator has a monopoly that has control over the market for the novel product or process of production.

The fact that the firm has a monopoly does not guarantee that it will be successful in marketing the product. The firm will be able to stay in business only when their price covers the long term costs of production. Consequently, the market demand for the product -- that is, the amount of it that buyers are willing to purchase at each of the various prices -- determines how successful the firm will be.

For more about the effect of consumer demand on the firm's revenue, profits, monopoly profits and excess profits and its ability to be successful and to remain in business in the long run, see the accompanying paper entitled [Monopoly Pricing](#). Once other firms learn about the innovation, they may be able to introduce rival products. When successful that cuts into the monopolist's profits.