

Opportunity Costs and Hidden Inventions

By Dwight Lee

Audio (9:10 minutes)

Question for thought: What is the cost of hiding a valuable invention in a market economy?

Few people think about opportunity cost as systematically as economists do, but all of us are constantly guided by the opportunity costs we face. If, as you are “listening” to this article, you learn that someone a few blocks away is giving \$1,000 to anyone who comes by “and participates in a workshop”, I predict with confidence that you will quickly stop “listening” because of the cost of continuing. Unfortunately, we commonly accept arguments that would make sense only if people ignore the opportunity costs of their decisions.

Hidden Inventions

A persistent claim is that in market economies where the profit motive reigns supreme, extremely valuable inventions are hidden to prevent their sale. Supposedly, if the inventions were available they would destroy the profits of big corporations by making their products obsolete. So these corporations buy up wonderful inventions to make sure we can't buy them.

That an amazing invention has never been found in some secret warehouse does nothing to reduce people's belief that such things exist; they're hidden, aren't they? The reality is that the opportunity cost of hiding a valuable invention is so great that inventions worth more than they cost are quickly made available. Hidden inventions exist only in economically uninformed imaginations.

The Hidden Carburetor

A popular hidden-invention claim concerns a carburetor that would greatly increase the gas mileage of ordinary automobiles. Assume that while tinkering in your garage you develop a carburetor that allows the heaviest car to get 150 miles per gallon—your mileage may vary slightly, depending on how you drive. Would you hide this invention? Surely not, because the opportunity cost would be enormous. The cost would equal the amount someone would be willing to pay for the rights to the carburetor. And who would offer you a lot of money for your invention? When I ask people this question, the answer is, usually, a big oil company. When I ask next what the oil company would do with the carburetor, the answer is, invariably, hide it.

The trouble with this answer is that it assumes the oil company ignored its opportunity cost after buying the carburetor. Sure, if the carburetor were sold, the oil company would lose some gasoline sales. But if the carburetor proved socially

valuable—costing less to produce and use than the cost of the gasoline saved—it would be profitable for the oil company to sell it anyway. Remember, with a patent the oil company could acquire a monopoly on the carburetor for 17 years and charge a price about equal to the amount the buyer saves in gasoline purchases (the present value of the savings over the life of the carburetor).

So even if only the oil company lost gas sales because of the carburetor, its revenues would not be reduced and its profits would increase as long as producing the carburetor cost less than producing the gas it saves. Since some, probably most, of the lost gas sales would be those of other oil companies, the profits from making the carburetor available would be even greater.

Of course, once the carburetor was on the market the patent might not be enforced perfectly as competitors offer substitutes. In any event, the patent would eventually expire. Then competition would drive the carburetor price down to near the cost of production, and the oil company's profits might decrease. But trying to hide the carburetor would still be a mistake.

First, the immediate increase in profits the carburetor would generate for a few years could easily be far more valuable than the future profits lost. Second, if the oil company didn't make the carburetor available, some other company (not necessarily an oil company) surely would. Then the profits from oil sales would be lost anyway, without the offsetting profits from carburetor sales. There are real profit advantages in being the first to market a new product or invention: getting the immediate patent-protected profits and establishing a reputation for providing a quality product that is valuable after the patent has expired.

However, not all inventions that do amazing things get to market. For example, in the 1930s a Mr. Pogue invented the Pogue carburetor, which greatly increased mileage by heating and vaporizing the gas before it went into the combustion chamber. Unfortunately, the carburetor had a tendency to explode, so some of the improved mileage was straight up. This invention was more costly to use than it was worth, so there was no opportunity cost to "hiding" it.

Light Bulbs and Tires

Other inventions commonly claimed to be hidden are long-lasting light bulbs and tires. Indeed, light bulbs and tires can be made to last longer than most of those we buy. But the problem isn't that such products are hidden. For example, light bulbs can be made to last indefinitely by increasing the thickness of the filament inside. Unfortunately, the thicker filament requires a lot more electricity. So there's a tradeoff between durability and electricity usage, and the market responds to people's desire to make such tradeoffs in sensible ways. Light bulbs that are relatively easy to change do not last as long as those that are difficult to change, such as those in refrigerators and in high ceilings. Also, when it would be dangerous for lights to go out frequently, as in automobile headlights, the

bulbs are built to last a long time.

Similarly, tires can be made to last longer, but they would be more expensive, less comfortable, and often less safe. The market responds to the tradeoff people choose among cost, comfort, safety, and durability, so the tires on the family car are not as rugged as the ones on heavy earth-moving equipment.

It should be pointed out that light bulbs and tires of all types last longer than they used to. Better ways of making economical light bulbs and safe, comfortable tires have been developed, and the opportunity cost of hiding those improvements in the form of forgone profits made sure they were brought to market.

Given the proliferation of new products and innovations in recent years, some of which threatened large and profitable companies like IBM and AT&T, it is hard to understand the persistent belief that valuable inventions are being hidden. If an economic system based on the pursuit of profit caused valuable inventions to be hidden, then great products unavailable to Americans should have been plentiful in the former Soviet Union, where profit didn't guide economic activity. But as everyone should realize by now, it has been the other way around. Wonderful products and innovations that Americans take for granted were unavailable in socialist economies.

This is not surprising. By suppressing profits, socialism reduces the opportunity cost of keeping new products out of the hands of the public, whether by design or by default. As long as we allow the pursuit of profits in the marketplace, the cost of hiding new socially valuable inventions will be so high that we don't have to worry that they will be hidden.

Concluding questions: Compare the costs of hiding inventions in free market and socialist economies. In which economy is the cost of hiding an invention higher and economic growth, consequently, the strongest?

Reference:

Lee, Dwight R. "[Opportunity Cost and Hidden Inventions,](http://www.fee.org/publications/the-freeman/article.asp?aid=4110)" [The Freeman: Ideas on Liberty - April 1999](http://www.fee.org/publications/the-freeman/article.asp?aid=4110). Retrieved from the World Wide Web on 20 November 2014 at <http://www.fee.org/publications/the-freeman/article.asp?aid=4110>.