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PRODUCT DEVELOPMENT INSIGHT

Eight Ways to Kill Innovation

Medical device manufacturers are supposed to thrive on change. Why, then, do so many of them make innovation difficult?

by Stephen B. Wilcox

I've spent a couple of decades now working with many types of medical device manufacturers on new product development. My experience has led me to two conclusions:

• Nothing is more important than innovation in the development of medical devices.
• The typical medical device manufacturer has managed to erect a huge array of barriers to product innovation.

How has this happened? To answer that question, let me begin with a bit of preaching to the choir about the value of innovation. Then I'll discuss in some detail how manufacturers go about killing it.

Innovation Fuels New Product Success

You can't make a living without some sort of monopoly. The reason for this is simple. Unless you can sell something that only you have, customers will simply buy the cheapest alternative. This drives the prices down until there is no profit to be made by anybody. It is the classic "commodity syndrome."

So you need some kind of monopoly. It may just be one little feature, or a special way of doing business, or even a geographic location that gives you a local monopoly. But you have to have something.

How do you get a monopoly? Innovation, of course. Without it, you are forced to copy someone else. All else being equal, the more innovative you are, and the more monopolies you have, the more control you'll have of the marketplace. Who is it that must constantly play catch-up with their competitors, and who must cut their margins in order to sell products? Not innovators.

There is one other advantage of innovation. An innovative environment builds morale and helps your firm keep its best people, rather than letting them slip away to places

where their ideas are fostered rather than ignored.

As I say, I expect this to be preaching to the choir. But if we all agree that innovation is good, why do so many companies go out of their way to kill it? There is no simple answer. But the ways companies crush innovation can be clearly described. In what follows, I present them as advice on how to eliminate innovation.

Misapply QFD

The appeal of quality function deployment, or QFD, is obvious. It holds out the promise of a systematic procedure that, if followed, will yield products with superior customer satisfaction relative to competitors. In QFD, you create a matrix in which customer requirements are listed. Then a given product alternative is rated according to the customer requirements.

The great advantage of QFD for those who fear innovation is that it represents, in effect, the cannibalization of product design by quality control. Nobody ever accused quality control of being a fertile source of creativity.

Begun in Japan, QFD first emerged in the United States when it was applied in the automobile industry in the late 1970s and early 1980s. It provided just what was needed by the sagging automobile industry of that era. It was a means of finding small advantages in a mature marketplace. It allowed the car companies to find out what aspects of cars customers cared about, so that they could focus on and improve those aspects. The winner was the car that was just a little bit better than others in those characteristics that mattered most.

Thus QFD was a terrific tool for that particular time and market. But QFD may or may not be the right approach in a highly dynamic marketplace. Inevitably, customer requirements are identified based on existing products. New ideas are then evaluated in light of those requirements. New alternatives that do not fit existing criteria (and that customers may not even know they want) are at risk of being rejected early in the process.
In other words, QFD can help develop a successful family sedan. But can it help you find a new way of performing surgery, or a new type of imaging? Can it help you turn a problem upside down and see it in a new way? I'm not so sure.

The application of QFD has two additional effects that can help crush innovation:

• It uses up a lot of resources identifying customer requirements and filling out the matrices. You won't have much time left for coming up with new ideas.
• It can enforce a linear way of thinking about product development that leaves little room for the type of unconstrained (anarchic?) thinking from which innovation flows. To come up with something really new, you sometimes need to escape all the constraints and generate wild ideas. QFD does not leave much room for that.

Is QFD a villain? No. As the heading of this section notes, the problem is misapplying QFD. There may well be ways of applying the technique in your company that leave the ability to innovate intact. But if you want to kill innovation, make sure that you apply QFD as slavishly and crudely as possible. In other words, apply it just as it is normally applied in the real world.

Treat Industrial Designers as Stylists

Innovation is very much a part of industrial design. Industrial designers tend to be creative, both by nature and training. Thus, they like to innovate, and they are good at it. However, this natural resource is often thrown away when they are treated as stylists, brought in merely to skin a product that has already been designed by the engineering team. Designers are much more effective as true partners in the development process, rather than as stylists to make the product look pretty.

The designer-as-stylist model is much less common than it once was. But if you really want to stifle innovation, stick with it. Or, better yet, don't include industrial designers at all.

Put Time-to-Market Above Everything Else

It is always safer to make a small change in an existing design than to come up with something new. You know the design will work and you know how to make it. A new approach is much less predictable. You can never be sure that you can produce the design at all, let alone that you can do so by the drop-dead date.

There's a natural psychological tendency to take the tried and true path. It is exaggerated when the reward structure favors time-to-market, since that path will always make it easier to meet your deadlines.

Turn Tales of Product Failures into Corporate Lore

Every company has had some product failures. Sometimes, those failures happen when the product is something radically different. This can then lead to the confident conclusion that the innovation in question is a loser. This belief is then passed on from one person to the next: That idea doesn't work. Customers don't want that type of product.

Of course, the conclusion may be correct. But can you be sure? There can be many reasons why a product fails. Not all of those reasons mean that the whole approach didn't make sense.

For example, when Apple introduced the first major graphical operating system, in the Lisa, the product flopped. It would have been easy for the conclusion that graphical user interfaces don't fly to become the received wisdom at Apple. Instead, the company stuck with its system, concluding, presumably, that the Lisa died because of its price or for some other reason, not because of its innovative operating system. If you want to eliminate innovation, try not to exhibit the type of persistence that Apple demonstrated.

Punish Failure More than You Reward Success

Here's another good way to stifle innovation. Make it clear to project managers that they will pay a huge price if their products are not successful, and that you will not be patient as a new product finds its place in the market. This works especially well if managers have no reason to expect to become corporate stars should they come up with a breakthrough success.

Design by Consensus

Requiring consensus, particularly with a large team, tends to stifle innovation. Someone will always object to anything that is really different. So to minimize innovation, keep your design teams as large as possible and keep them free of strong leaders with the discretion to buck the consensus.

Do Simple Preference Tests of New Concepts with Existing Users

A syndrome with hard-to-use products is that people who do master them tend to like them. Mastering a difficult product provides a great deal of pride and satisfaction. It also serves to differentiate pros from lesser beings who can't use the product. Thus, skilled users do not want to hear about changing a poorly designed product.

Do you want to make sure that your new product will be exactly like the old one? Then test it with so-called thought leaders who are highly skilled with existing products. By all means don't do careful usability testing. You may find that the behavioral results can demonstrate the superiority of a new approach, despite what users say. You may also find that extended use reveals advantages of a new approach that are not immediately apparent. Furthermore, avoid testing with novice users, who may prefer a radical alternative, and who may find the new product much easier to use, not having gone through the learning curve with the existing product.

Stay Out of the Field

Spending time in hospitals and patient's homes and watching carefully how products are actually used is a rich source of new ideas. If you want to stave off innovation, then talk to people in groups outside of the use environment. It is much harder for them or for you to understand what the real issues are or to come up with really innovative alternatives.

Conclusion

Yes, it's easy for me to say. I'm not making decisions that put millions of R&D dollars at risk. Fair enough. Economic risk certainly needs to be addressed, and quantitative methods need to be applied to assess and reduce it. However, there is also economic risk in not taking chances. As we have all seen, many new ideas that led to successful products came not from industry leaders but from start-ups.

Sure, you can eventually buy the start-ups. But which would you prefer—To pay top dollar for new ideas once they demonstrate their value in the marketplace? Or to generate them within your own company? If you want to avoid innovation, you'll know the answer.

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