Will Manufacturing's Future be Open?

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Businesses are starting to go open. No, it doesn't mean they're unveiling all their intellectual property to the world. It is, however, the result of a particularly difficult business climate for innovation. The recession has battered manufacturers of all types, forcing them to focus on getting their product out the door and keeping the lights on, rather than investing in R&D. In many instances, those R&D engineers found themselves out of a job. In best-case scenarios, manufacturers struggled to deal with customers that wanted better products, and sooner, while their existing staff of knowledgeable engineers — the Baby Boomers — sought out retirement.

Because of these trends, more manufacturers are starting to rely on "open innovation," a process philosophy that aims to merge new technology from sometimes disparate industries. That term invites a lot of questions, particularly about IP, but the name is a bit of a misnomer. Companies that participate in open innovation — a list that includes the likes of Procter & Gamble, Kraft, Philips, L'Oreal, Unilever — are simply willing to accept that their in-house contingents of R&D engineers simply aren't able to keep up with faster, more stringent demands.

Andy Zynga, the CEO of NineSigma, one of the companies that helps manufacturers participate in open innovation, describes the movement: "[Open innovation] is about businesses going outside their own four walls to find new ideas, new technologies, knowledge and partners that help them to accelerate their own innovation cycle."

That doesn't sound quite so intimidating or revealing. To make the philosophy clear, however, let's run through a simple example, one that NineSigma actually dealt with in its recent history. A beverage company was having difficulty with their six-packs. If a single product leaked, the whole pack had to be thrown away, which created a good deal of waste. By using open innovation, they connected with another company that makes fuel tank liners for fighter jets so they don't leak after being peppered with bullets.

The efficacy of open innovation is the way it connects people, and their ideas. The two participating companies are in completely different industries, and would have not found each other in a normal environment. The technology itself, however, is agnostic to its application, and it just works. That, in a nutshell is the potential of open innovation.

The Brief History of Open Innovation

The term "open innovation" is actually a relatively new one, coined by Henry Chesbrough in his 2003 book, Open Innovation: The New Imperative for Creating and Profiting from Technology. Chesbrough, a professor at the University of California, Berkeley and the executive director of the Center for Open Innovation there, argues that in a world with so much distributed knowledge, manufacturers should not make the mistake in thinking they are capable of developing all their necessary technology in-house. Instead, companies should buy or license the necessary technologies or processes.

This philosophy is a significant break from the standard model. For years, manufacturers relied upon heavily-staffed engineering departments that were responsible for all components of the product development cycle. This worked for a time, but in 2012, it seems that structure is on the way out. With companies still struggling against the recession, or against the engineering "brain drain" that has occurred with the loss of so much so-called tribal knowledge, it's clear that open innovation could be a new lead for businesses looking to shake things up.

Enter companies like NineSigma, which has been around since 2000. Zynga calls his company an "innovation matchmaker," a term that sounds inviting for the multitude of companies in need of more technology at faster speeds. He says that with all the innovation occurring around the world in a given day, it's often smarter for a company to go with open innovation before "reinventing the wheel."

Zynga says, "Our clients are either under pretty immense pressure to innovate, because product lifecycles are so short, or they have a very broad technology portfolio. For example, automotive — nobody can cover all that." Chances are someone has already thought through a solution to the exact problem they're having.

What's Possible with Open Innovation

One of the main benefits of open innovation is that it works almost anywhere. Zynga says that his company has helped clients across the whole spectrum of developing a product and bringing it to market. That includes product development, perfecting a process, making an operation more energy-efficient, and even finding better ways to package a good. If a company needs a new technology on any part of their process, there's a good chance that the zeitgeist of innovation happening around the world has already found a solution.

Zynga spoke about a yogurt company that needed to improve detection of miniscule plastic chips that sometimes found their way into the packaged product. The company needed a solution that was accurate but fast, with detection for parts down to 1/2mm, and their engineering staff couldn't take on the additional complexity. Fortunately, NineSigma was able to find a solution that they could retrofit onto their existing production process.

And Hallmark, for example, used NineSigma's brand of open innovation to develop a new kind of augmented-reality greeting cards in a matter of months. The company says that without open innovation, they would have never come upon the technology, and likely would not have been able to produce it themselves.

Zynga says a popular option for open innovation is finding more energy efficient processes. Whether or not a company has a sustainability goal, most wouldn't mind paying less to the energy company every month. They know there are inefficiencies in their processes — or on the plant itself — but don't have the engineering power necessary to research the available solutions and develop an integration scheme. With open innovation, they can have the right technology delivered to their doorstep, metaphorically speaking, and spend less time and money for a better solution.

How to go Open

Open innovation can be done by just about anyone, at any time, as it's more a philosophy than a specific business practice that must be drilled down from the top of the organization, such as Lean. Zynga is quick to say, however, that working with his company is better than striking out alone. They take on the role of the middleman between their clients and more than two million solutions providers, which helps reduce the amount of time needed to find applicable solutions.

Zynga also argues that, like Lean, some training is necessary, because some businesses just aren't well-suited for open innovation. Fortunately, that can be changed. He says, "We make sure that we train-up the clients. We have a small consulting team that does projects where they help [clients] with how they can best … engage with the outside world in order to make sure that once these great solutions come in, they can actually use them."

Next, NineSigma and the client work together to create a proposal for the type of innovation they're looking for. Zynga says, "We bring this particular problem down to its most basic science, and we make it in a way that's confidential." Essentially, they explain in the simplest terms what their client is looking for, and let the possible solutions providers try to come up with a way their innovations would be applicable. When one company needed a solution for wrinkle-free cotton shirts, NineSigma wrote a proposal for solutions to "a problem involving surface tension for an organic material that needs to be relaxed."

NineSigma blasts out this proposal to their network of solutions providers. Zynga says because anyone can sign up as an innovator capable of providing solutions, there's a good chance someone out there is capable of providing the right technology. When a good solution is found, NineSigma once again acts as a buffer between the two sides, eliminating the need to sign complex non-disclosure agreements. They can also help write up the licensing or purchasing proposal.

There's little doubt that, at the very least, more manufacturers will be looking into open innovation in the next few years. The demand for faster product cycles will only get stronger, as will the need to make a product that's

both high quality and cheap. Even though open innovation is still in its infancy compared to many other business philosophies, it seems to have a great deal of potential, particularly in the way it connects disparate technologies for better solutions.

Most importantly, many are starting to see that the old ways just don't cut it any more. Perhaps 2012 is the year for your business to open up a little.

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