Manufacturing's great debate: idea or execution? Which is most important to innovation success?

Innovation is a central component of the manufacturing industry. It can take many forms and address many functions. It can be a simple tactic for improving shop floor operations. It can be a concept for a new type of product or service. It can be a revolutionary approach that completely disrupts the way you do business. But all innovations start much the same way: as an idea.

But then what? How does an idea evolve from inspiration to execution? Sometimes it's a mystery, sometimes pure luck—and sometimes an idea comes to fruition via a carefully orchestrated process with many individuals participating, each person playing a vital role.

How critical is innovation to the growth of your business? And what can you do to create an environment that's conducive to creative thinking and encourages your people to act on those ideas?

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How does innovation fit into your growth strategy?

Manufacturers can't afford to invest resources in ideas that bring disruption with little gain. Instead of relying on luck, hunches, or lofty visions, manufacturers need to apply strategic planning to their innovation strategies—from an idea's inception to its execution. When carefully orchestrated, innovation can have a high pay-off.

Not only should innovation be an important component of manufacturers' growth strategy, manufacturers should also closely align innovation with IT spending and human capital investment. While these areas have logical connections, some manufacturers seem uncertain about how to commit to all three in a meaningful, synergistic way.

In the January, **2017 Manufacturing Barometer report**, PwC found that 85% of manufacturers predicted positive growth for 2017. Surveyed companies also anticipated significant increases in capital expenditure spending and overall budget increases for the coming year. How these investments will be made, however, shows some disconnects. While 67% of manufacturers said they planned to focus on new products and service introductions, only 52% of manufacturers were planning to increase R&D spending. And, less than half (42%) of manufacturers said they planned to invest in IT. For some manufacturers, it seems they hope to introduce new products, but do it independenetly of new R&D and IT solutions.

PwC's 2017 **CEO Survey** reveals even more of this potential contradiction. The results show that 70% of CEOs recognize that the speed of technology change is a top concern. But only 23% of CEOs state that innovation is a priority. Meanwhile, only 15% of CEOs report that human capital is a priority, and 15% of CEOs claim that digital technology is a priority. These mixed messages seem to indicate that manufacturers understand the connection between technology, talent, and innovation, but are uncertain what their investment priorities should be in these areas.

How does your organization embrace innovation?

With approximately two-thirds (67%) of manufacturers focusing on new products and services, today's manufacturing environment means that frequent, rapid product releases and continuous adoption of new technologies are an important ingredient of manufacturing's evolution. New ideas spur interest, excitement, and investment. But reaction to the fast pace of innovation varies. Some companies thrive on innovation, always eager to be early adopters of new technologies and setting the pace for others to follow. Other companies, however, notoriously lag behind, with their grumbling workforces that resist change of any kind.

Most manufacturers fall somewhere in between, championing a few breakthroughs, casually observing change as it bubbles around them—content to embrace innovation when an opportunity strikes them as unavoidable or relatively risk-free. Perhaps a customer may force adoption of a value-add capability or an aggressive competitor will force the manufacturer to match features so as not to lose market share.

This lackadaisical, wait-until-we-have-to approach may have worked in the past. Today, it's becoming increasingly high-risk to sit on the sidelines watching. Being disengaged doesn't stop the avalanche of change and disruption from touching you.

Inevitable change happens all the time, with or without endorsement from a supervisor, a manual being issued, or a series of training sessions being held. Lack of communication and training around a process change can cause serious backlashes of worker resentment, resistance, and poor adoption rates. For example, a manufacturer may delay setting a policy about employees using their own mobile devices on the shop floor. No decision can easily be interpreted as saying "anything goes." Employees will simply start accessing data through their smart phones, pulling up reports on tablets, and sharing documents via social media tools. Lack of control can create chaos and security breaches that will be hard to fix. This is just one of many potential obstacles that can arise from slow adoption of new concepts.

What do CIOs say about innovation?

What are the obstacles that need to be overcome in order to successfully implement an innovation strategy? A **Deloitte Consulting survey** addresses that question from the perspective of the CIO: "This year's survey found substantial gaps exist between business expectations and IT capabilities, in key areas including innovation. 57% of CIOs report that the business expects them to assist in business innovation and developing new products and services, but over half state that innovation and disruption priorities currently do not exist or are in the process of being built."

Mark White, principal, innovation office chief technologist at Deloitte, compared innovation in manufacturing to an iceberg. C-level executives, directors, and managers in non-IT roles are often involved in the portion of the disruptive project that is above the water, while the CIO focuses on the unseen 90%. That is where the hidden dangers and obstacles

to successful execution await. "What many business leaders currently regard as 'digital' is predominantly the part of the iceberg that shows above the water," says White. "Legacy systems, rigid organizational structure, and antiquated processes encumbering the shift to digital often lies below," he adds. Because those outdated structures and obstacles are well-hidden, navigating through an innovation project can be treacherous.

While this can be seen as a burden some CIOs recognize that high-profile projects are good career boosters and welcome the challenge.

"The CIO is well positioned to influence and support the whole 'digital iceberg' and to help create the right strategy, platforms, and services to realize the holistic digital enterprise," says White. This means that CIOs are ideally situated to support a company-wide emphasis on innovation.

What's the CEO's perspective?

For a different perspective, **KPMG** surveyed manufacturing CEOs to get their view of disruptive innovation in manufacturing. In a summary, Douglas K. Gates, global head of industrial manufacturing and aerospace & defense for KPMG, writes, "CEOs from the manufacturing sector worry that their organizations may not be winning the war for technology-driven innovation. Their direct reports and other closely related executives, by contrast, seem to indicate that matters are well in hand. More than likely, the truth is somewhere in the middle—meaning there's a lot more work ahead for leading manufacturers and for the most intrepid, enormous opportunity. To improve the odds for success, CEOs need to take action."

Among industry CEOs, concerns surrounding technology, innovation, and disruption are abundant. Manufacturing executives in KPMG's survey reported that:

- 75% worry about new entrants disrupting the business model
- 73% worry about keeping current with new technologies
- 70% worry about competitors' ability to take business away
- 65% worry about product and service relevance three years from now

While the C-level is concerned, the shop floor personnel seem more confident. The KPMG survey focuses on manager levels, largely in operational areas. The survey found:

- 53% say they are already hard at work disrupting their industries
- 52% say they are "current" on technology
- 48% say their technology is cutting edge

This gap in perception clearly indicates the executive and managers have work to do. Communication about the vision vs. execution must be a priority.

What can you do?

What can you do to make sure your company encourages, nurtures, and adapts to the high rate of innovation? Here are seven guidelines to help kick off a strategic approach that considers the entire process—from inception to execution:

1. **The creative spark**
   New ideas can come from anywhere and can originate in the most unlikely places. While a manufacturing company often has an engineering team, product development department, or R&D

division, individuals on these teams aren't the only ones who engage in problem-solving. An old proverb states, "necessity is the mother of invention." The people who have the greatest, hands-on familiarity with the products—the people who use the products, and the people who are on the assembly line who manufacture the products—may come up with the most practical ideas. Manufacturers need tools for capturing and harnessing these kernels of innovation. Online portals, collaboration tools, and message boards replace the traditional suggestion box, making it easy for individuals to submit ideas.

2. **A company culture that accepts risk**
   An innovative company is usually one that's willing to take chances, make mistakes, and learn from those mistakes. For a truly innovative environment, risk tolerance is a necessity and must be reinforced in the company culture. This mindset starts at the top with C-level officers encouraging experimentation, rewarding effort, and acknowledging that not every new idea will succeed. This eliminates barriers of fear, which can stifle creativity.
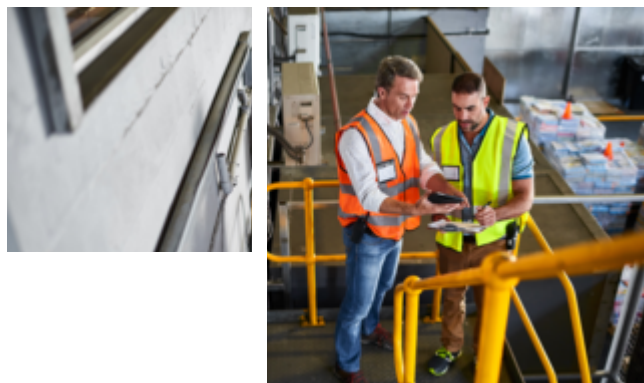
3. **Engage with customers**
   Today's customers expect highly personalized products. Online tools allow consumers to select features, choose accessories, pick colors and finishes, and add embellishments for many products—from shoes to cars. This carries over to the industrial commercial industries as well. Buyers of machinery, equipment, and high-tech components expect the same kind of ability to interact with the design engineers, providing input on specific features. This level of engagement often produces innovative concepts—ideas that combine practical functionality with non-essentials, like convenience, comfort, pride, and image. Branding goods with sports teams' emblems has been successful in the fashion industry for decades. These types of personalization, endorsements, and co-branding efforts are now seeping into the industrial space as well.

4. **Adjacent innovation and unlikely bedfellows**
   Adjacent innovation means building upon and borrowing concepts from enterprises outside of your industry. For example, hospitals may look to the hospitality sector for ways to make patients feel more at home and comfortable. The equipment industry can learn from the fashion industry how to let customers accessorize the equipment cabs and choose from mix-and-match features. Thanks to easy online searches, whole new worlds of inspiration are open to creative thinkers. Ideas can even come from the natural world via plants, animals, and insects—a drone that uses an insect-like wing structure for self-healing is just one example.

5. **Hire visionaries and creators**
   As the skills gap issue continues to plague manufacturing, some manufacturers have expanded their hiring parameters to go beyond traditional engineering and mechanical skills. Individuals with liberal arts backgrounds are increasingly being put to work as visionaries, story tellers, and creative problem-solvers in manufacturing plants. Since creativity is so critical to the innovation process, manufactures should build their product development teams with a mix of skills—including individuals with imaginative, creative abilities, who can ask, "what if …"

6. **Team buy-in**
   Innovation, departures from the traditional, and wholesale change can be uncomfortable for the workforce—especially if it is perceived that the change may be a threat to job security. Most humans are creatures of habit, finding comfort in the familiar, safe, and predictable. Disrupting routine—without sharing the reason or the benefit—can cause stress in the organization. Involving personnel in the process, though, can eliminate distrust and foster a sense of ownership of a new concept—whether it's a new workflow, new piece of equipment, or new policy about processing customer orders. Communication is a vital part of innovation—at every level.

7. **Incremental changes can be easily digested**
   When planning to roll out an innovative new concept, it may be beneficial to plan a phased approach—gradually building on early successes and moving toward the final project scope. Manufacturing plants have long endorsed the continuous-improvement school-of-thought, which emphasizes ongoing tracking, monitoring, improving, and evaluating results in an endless loop. While these changes tend to be incremental, they still involve a steady ebb and flow of process change. This forces personnel to cope with updates to procedures and changes to systems in a steady, predictable flow, while allowing time to digest the change. With this method, changes tend to be nonthreatening and absorbed by the workforce with minimal disruption.

How do you start?

Manufacturers need to face innovation head-on. While executives acknowledge that innovation is critical to success, many seem to have unclear strategies about how to build an innovative enterprise and support the organization with the tools they need.

To begin with, a forward-thinking workforce sets a good foundation. There are also the seven steps above that manufacturers can use as a blueprint for boosting their innovation capabilities. A company culture that emphasizes innovation must start it at the top—plus have the IT solutions needed to support communication, collaboration, and predicting outcomes. Only manufacturers who embrace innovation can turn emerging opportunities into a true competitive advantage.

Learn more about software solutions to help build an innovative environment >

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