



Predicting the future of digitalization

Looking beyond mere productivity gains and toward new results-based business models

Manufacturers in all segments, from food and beverage to industrial machinery and equipment, know that digitalization is coming and they need to adapt or risk obsolescence. They all want to find an easy way to do that. But there's no easy method for achieving digitalization, also known as digital transformation or Industry 4.0. Research shows manufacturers are ready to move forward, but with small steps in carefully controlled pilot projects. While this a move in the right direction, manufacturers should also recognize that short-term initiatives will not offer the massive gains of an enterprise-wide re-vamp of processes. The true potential of digitalization will come from new revenue streams and outcome based selling. That type of strategy must start at the top, and start now.

From hype to readiness: Manufacturers are ready to move into action

Manufacturers are ready to adopt digitalization strategies, research shows. They just aren't sure how—or why. Despite the extensive media hype and discussion among industry pundits, many manufacturers still lack clarity around possible revenue models and return on investment (ROI) that can be expected from adopting disruptive digital technologies.

That's understandable. New technologies have hit manufacturers in wave after wave. The speed of change has reached unprecedented levels. With manufacturers still recovering from the recent recession, they must now rebuild their foundational systems, while also preparing for digital future.

But manufacturers have reached a critical moment for making decisions. **Consulting firm LEK**, says, "IoT and connected products coupled with data analytics threaten to disrupt established market relationships, introduce new competitive dimensions, and challenge existing business models. Yet the potential opportunities are enormous. Although the destination is becoming clearer, the journey to commercial transformation is proving to be challenging for many industrial companies."

Manufacturers seem to know that they are not as prepared as they should be. **Deloitte reports** that nearly 90% of respondents to a recent survey conducted by *MIT Sloan Management Review* anticipate that their industries will be disrupted by digital trends to a great or moderate extent, but only 44% say their organizations are adequately preparing for the disruptions to come.

Predictions for the coming year suggest that manufacturers are ready to act, at least in small steps, rather than giant leaps of faith. As more pilot projects produce successful results, more manufacturers will likely rush into deployment. There will be no stopping the momentum.

The big goal

Projections about the impact of digitalization are huge. The **World Economic Forum** conducted a "value at stake" analysis which suggests that the combined value—to society and industry—of digital transformation across industries exceeds \$100 trillion over the next 10 years. WEF stresses that value doesn't come from profit for stakeholders alone, but will also be measured by social and wellness improvements. WEF explains it by saying:

"Digital transformation provides industry with unparalleled opportunities for value creation. It used to take Fortune 500 companies an average of 20 years to reach a billion-dollar valuation; today's digital startups are getting there in four. Digital technologies are creating new profit pools by transforming customer expectations and how companies can address them. At the same time, digitalization could produce benefits for society that equal, or even surpass, the value created for industry—the mass adoption of autonomous vehicles and usage-based car insurance, for instance, could save up to 1 million lives by 2025."

Baby steps

Early adopters ready to take action in the coming year will find few best practice models and proven tactics to use as starting points. Any major digital transformation initiative launched in the next year or two might amount to a leap of faith, but forward-thinking executives know that the leap is inevitable. Making bold decisions and embracing risk are common characteristics of those companies who already classify themselves as digitally mature.

Deloitte says nearly 80% of digitally mature companies take active steps to encourage a corporate culture of risk taking, innovation, collaboration, and change acceptance.

Some risk-adverse manufacturers may prefer to sit on the sidelines, while others might opt for a pilot program with carefully controlled parameters and short-term objectives. Manufacturers who are early adopters of digitalization already tend to apply new concepts to existing problems, such as improving shop floor scheduling, workforce productivity, and preventive maintenance for shop assets with the help of smart sensors and automation. These are areas in which the problems are well-defined and the solutions are relatively easy to grasp and implement.

But those projects may not usher in the same kind of high impact results as an enterprise-wide transformation could bring. And manufacturers must be careful to keep one eye on long-term, comprehensive goals, while they test out theories on short term, isolated applications. In fact, manufacturers may be missing the true potential of digitalization if they only focus on short term goals such as increased productivity.

Boston Consulting Group (BCG) recently conducted a survey of manufacturers about adoption of Industry 4.0 technology, the umbrella term which typically includes Internet of Things, data science, mobility, digital commerce, and cloud deployment. Nearly 90% of manufacturers surveyed say they consider adopting Industry 4.0 technologies as a way to improve productivity. But only 28% see it as a way to generate increased revenue, and a mere 13% consider digitalization as a path to a new revenue model.

Numerous obstacles were cited by companies as they struggle to put disruptive technologies in place. Over 40% said changing the company culture and way of thinking about technology was the biggest hurdle to implementation. Lack of interconnected departments (20%), changing business models (15%), and the challenge of hiring a right-skilled workforce (13%) were also cited as challenges in the BCG survey.

Lack of a comprehensive view and enterprise-wide strategy will likely produce limited results, far below the potential, experts warn. “The real value (of digitalization) is achieved when manufacturers maximize the impact of these advances by combining them in a comprehensive program,” says Justin Rose, a BCG partner and a coauthor of the survey report. Unfortunately, one-third of those surveyed admit that the lack of a clear strategy has been an obstacle.

“Manufacturers recognize the potential of the digital technologies known collectively as Industry 4.0 to create value, but they are largely approaching the opportunity in piecemeal fashion and may miss out on the significant business benefits these technologies offer,” says an **Industry Week** article about the survey.

Despite these challenges, manufacturers must make progress in moving toward digitalization in order to remain competitive. Authors of the BCG report say, “Bold ambitions and speed are essential. A cross-functional innovation team should conduct experiments, iterate fast and rapidly scale up new solutions. Battle-tested program-management techniques can keep the large-scale, multiyear effort on track.”

Bigger leaps yield bigger gains

In the coming year industrial organizations will continue to take a hard look at their role in the total value chain, whether they operate in a business to consumer (B2C) or business-to-business (B2B) business model. Manufacturers will zero in on those activities with the greatest potential for creating value, efficiency, customer loyalty, or revenue.

Consulting firm LEK says, “This strategic focus is fundamentally changing the nature of what companies do, and whom they do it for. Industrial manufacturers, for example, are expanding their business models both upstream and downstream to tap into more lucrative profit pools. In many cases, manufacturers are also creating portals and opportunities of engagement, such as product personalization, to get closer to the consumer. Industrial distributors, in turn, are seeking strategic partners to enhance their digital capabilities (e.g., ecommerce, data analytics) to counter threats of disintermediation and margin erosion.”

LEK projects that manufacturers will also shift from selling products to selling outcomes. Outcome-based business model means that the manufacturer provides the desired end result or service, without necessarily selling a physical product. For example, instead of selling HVAC or refrigeration equipment to a commercial developer, the manufacturer might sell conditioned air, or refrigerated space for a restaurant. The manufacturer provides the equipment, but still owns it, maintains and manages it, replacing or repairing as needed to provide the optimal end results.

Monetizing data

This type of business model also generates data which can be monetized. Returning to the HVAC example, the equipment manufacturer will collect considerable amounts of data generated from sensors embedded in the equipment. This data can be used to create benchmark guidelines, projections on equipment lifespan, and trends in energy spikes. This type of data can be packaged and sold to a range of interested parties. This is data already collected and aggregated. Turning it into revenue is a logical, profitable step—but one that not all manufacturers are embracing yet.

LEK says, “Shifting to an organizational focus on customer outcomes is not easy. It often involves training personnel in customer processes and may require significant organizational change to deliver on the promise of improved customer outcomes.” The LEK report goes on to describe the type of top-down commitment and investment that will be required, saying, “Adaptation will require fundamental changes in how industrial manufacturers are organized, how they develop new capabilities, and how they approach partnering. Above all, such transformation will require a great deal of leadership and change management.”



All about timing and action

While projections on rate of adoption and advice on how to begin may differ, there is one mandate that seems to be universally prescribed by industry experts: Do *something*, and do it soon. At the very least, this is the time for evaluating your options and making plans. Today's unprecedented rate of change can cause even global enterprises to topple after a missed step or a revolutionary start-up changes the market. Thoughts of Kodak®, Blackberry®, Blockbuster®, and Borders® Bookshop, all victims of changing markets, should be sufficient reminder that a company needs to adapt or risk demise.

Even if a massive undertaking is not possible now, a pilot project is a good way to at least start thinking about digitalization and examining how it can be leveraged.

Manufacturers should also keep in mind that investing in technology is not the only step. Leadership and an engaged workforce are also critical elements. Those are areas which can be addressed, even if capital is restricted. Accenture summed it up well, saying, "Winners in the digital age do much more than tick off a checklist of technology capabilities. They know their success hinges on people. The ability to understand changing customer needs and behaviors is, of course, vital. But the real deciding factor in the era of intelligence will be a company's ability to evolve its corporate culture to not only take advantage of emerging technologies, but also, critically, embrace the new business strategies that those technologies drive."

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