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Digital transformation: a view across industries

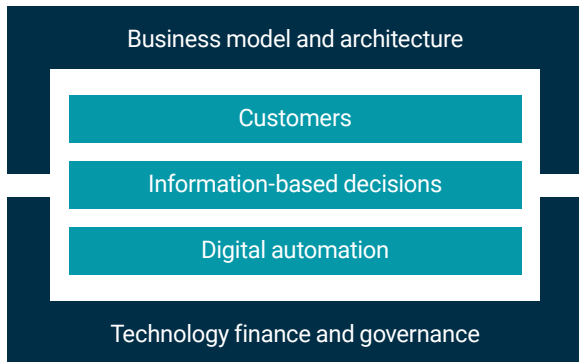


All industries can benefit from digital transformation when they put an effective framework into action. The fundamental practices for improving performance are the use of analytics and technologies to understand customers and provide a great omnichannel experience for them; the use of information-based decisions drawn from real-time sources; and the use of the best available technology to automate work functions to the highest possible degree.

However, it is very difficult to act on those practices without the right business model and the right enterprise architecture, supported by a corporate mindset focused on their financial requirements and backed by strong governance (figure 1).

Industries vary in their digital transformation maturity rates. Some have seen many comprehensive business transformations during our digital era, and others have experienced more piecemeal changes. Business-to-consumer industries in particular have experienced dramatic change in the ways they manage and interact with customers, but successful companies are also operating their businesses based on the use of critical information they have at their fingertips.

FIGURE 1: AN EFFECTIVE FRAMEWORK FOR DIGITAL TRANSFORMATION



Industries using business-to-business models are advancing rapidly in the area of automation, but the smartest ones recognize that customer analytics and digital transactions give them an edge. In addition, the same consumers who demand digital environments for their personal purchasing behaviors—usually younger people who’ve lived in a digital world their entire lives—are the same people who tend to expect to do business digitally regardless of the industry or the business function. The fact is that companies that have digitally transformed across industries are outperforming their competitors financially by as much as 26%.¹ The most successful have measurably integrated operations with digital decisionmaking capabilities and processes.

AUTOS AND AIRLINES: PROGRESS THROUGH PRODUCTION AND PRICING

The automotive and airlines industries paved the digital pathway by pioneering robotics and real-time pricing adaptation, which they continue to refine. The automotive industry completely transformed the manufacturing process by using robots to perform everything from welding to die casting and painting while working alongside human factory workers.

Ford now has 20,000 robots in operation globally,² and the industry has moved on to even more-innovative digital technologies. The current generation of connected vehicles uses telematics and information technology to digitize navigation, security, emergency alerts, multimedia, and service diagnostics.

The airline industry essentially mastered pricing around real-time knowledge of supply and demand well ahead of other industries. Computer programs constantly monitor flights, analyze booking patterns, and—in real time—change fares and number of seats available at each fare level. Few other industries can deploy that kind of capability to the same effect.

RETAIL, BANKING, AND MEDIA: CUSTOMERS SETTING THE PACE

Retailers are evolving from multichannel operations to an omnichannel environment based on deep understanding of each of their customers, and they’re essentially using their retail stores as warehouse operations accessible to consumers. Almost all retailers have seen their e-commerce businesses grow faster than physical store sales, but there’s now a big difference between simply having stores and a Web site and creating a great and consistent customer experience across multiple sales channels by way of a sophisticated omnichannel platform.

Higher-performing retailers often use digital capabilities to understand their customers better and provide great customer experiences. Acquiring those capabilities requires the collection of lots of information about each customer and systematic analysis of the information so that the sales force and customer service personnel who interact with the customers know how to treat each customer in order to keep their business. Those interactions also help maximize sales through upselling, cross-selling, and reinforcing customer loyalty. Industry leaders now offer omnichannel ways of doing business to fully integrate a customer’s experience. That integration is managed centrally to make sure customers get the same experience they get in a store that they get when transacting with retailers digitally. These retailers have operating backbones with consolidated back-of-house operations that seamlessly serve customers across all channels.

Media may be the best example of an industry that has essentially gone through complete digital disruption. Fully 97% of media companies acknowledge that digital has disrupted their industry, and 44% said they see themselves as leaders in that disruptive dynamic.³ Napster pioneered the changes and upended traditional music-purchasing patterns. Other media disrupters

¹ George Westerman and Andrew McAfee, “The Digital Advantage: How Digital Leaders Outperform Their Peers in Every Industry,” MIT Center for Digital Business, November 2012.

² Associated Press. Jobs that have been replaced by technology, January 25, 2013, retrieved from <http://www.boston.com/jobs/news/2013/01/24/bdcjobs-replaced-technologygallery/4yoj0dOxLa5KVwkb64krHM/story.html#slide-1>.

³ Econsultancy, “Impact of Digital Transformation in the Media and Entertainment Sector,” November 2014, accessed February 24, 2016, <https://econsultancy.com/reports/impactof-digital-transformation-in-the-media-and-entertainment-sector/>.



that have revolutionized the industry are Apple's iTunes, streaming music pioneer Pandora, and Netflix. Similar disruptions mark the digital transformation of the travel industry, wherein online leaders such as Priceline, Orbitz, and Kayak offer consumers almost everything they need to make travel arrangements through the Internet. Travel agents who used to command that information and provide it for customers have largely been replaced by digital travel scheduling.

Consumer banking's move to a digital footing has been more challenging—largely a result of earlier investments in systems created for a *productcentric* environment, though the industry has now moved to a *customercentric* environment. Another factor is the challenge raised by bank regulators' demands for extraordinary amounts of information, especially about customers. Industry newcomers may have an easier time serving as disruptors because they do not carry the same legacy challenges that burden longtime industry players.

Consumer products will likely see dramatic changes caused by increased adoption of the Internet of Things, which could potentially bury aspects of the traditional retail model. Think about common products consumers use in their day-to-day lives and how many of those people would prefer not having to go to a store to purchase them. For example, a bottle of shampoo could arrive at your doorstep when you're just about to run out of it. Would you prefer that over having to go to the store to get more? Through the Internet of Things, those capabilities now exist—and they could further affect some of the traditional retailers.

PHARMACIES, INSURANCE, AND HEALTHCARE: DIGITAL RECORDS AND REFILLS

Similar concepts can apply to the pharmaceutical industry, especially in the cases of pharmacies and the distribution of medicine. Would you prefer to have your medicine personally delivered to you rather than your having to go to a pharmacy to stand in line and pick it up? There have been some advances with regard to texting patients when they need refills and automated refilling, but there's room for more-advanced, digitally informed and executed delivery programs. Regulatory challenges still represent an issue, but they'll likely be accommodated.

In a related vein, healthcare, in some respects, continues to hold on to outdated practices, but digital transformation is responsible for dramatic changes to other aspects of the industry. As patients, we've all experienced being handed the dreaded clipboard full of paper forms to fill out with a pen, and a peek into the doctor's back-office area reveals shelves of folders filled with those paper records. But the gradual adoption of electronic health records is starting to have an impact. The transformation is of course far from complete, even though 72% of office-based physicians reported using some form of electronic-health-record system in 2012, up from about 35% in 2007.⁴ Many digital opportunities exist in healthcare, and progress is being made in several areas, which may result in groundbreaking changes.

⁴ Use and Characteristics of Electronic Health Record Systems Among Office-based Physician Practices: United States, 2001–2013," National Center for Health Statistics, January 2014, <http://www.cdc.gov/nchs/data/databriefs/db143.pdf>.

Greater numbers of patients now actually wear digital tools that track their vital signs, and others can request medicines through mobile devices. Electronic notifications for appointments and prescriptions have slashed the countless hours of waiting times at pharmacies and medical offices. Digital engagement between doctors and patients continues to build in such areas as in-home monitoring and virtual consultations, as has progress in providing real-time access to medical records. Significant advancements are also occurring in digital diagnoses, research, and caregiving.

The direct-distribution concept making inroads in the pharmacy industry also applies to the digital transformation of the insurance industry. Why use a broker when plentiful online options offer faster service and immediate price comparisons? Common insurance products can be obtained online through instant quotes that encompass various plan choices and options. Although it may take time for other areas of the insurance industry to go completely digital, traditional providers will have to offer those options to stay competitive. Insurers are under the same kinds of pressure experienced by retailers and banks. Some are addressing the pressure well, but some are not. Progressive has emerged as an insurance industry leader—on the strength of its methods of digital interaction with customers, who can get quotes, buy insurance, and make claims right from a phone.

Standardization and automation opportunities are digitally transforming insurers' back offices and reducing costs. Digital technologies are accelerating and in many cases improving both the underwriting and claims-processing functions. Allstate's successful

use of digital automation has reduced the average number of days it takes to pay simple claims from 40 days to 1 day.⁵ Moreover, the industry is beginning to realize that machine intelligence will also lead to more-efficient performance by actuarial functions.

The utilities industry, too, is harnessing digital methods to reduce operating costs. The results are most evident in asset management, field operations, and consumer interaction. Sensors and robust analytics help evaluate utility-producing assets and help reduce labor costs. Similarly, digital meter reading has sharply cut human meter-reading labor costs. Digital capabilities are reducing the time for responses to consumer requests and helping automate other services, thereby improving customer satisfaction while lowering costs.

HARNESSING GREATER DIGITAL POTENTIAL IN MANUFACTURING

Digital transformation in manufacturing has evolved as well, from improved automation in production management to greater transparency in the supply chain (figure 2). The digital age has spurred a reconsideration of manufacturing and operations, but many companies have yet to redesign their manufacturing processes and train their workforces to operate in the digital world.

Communication devices and real-time information transmission are changing many aspects of manufacturing. The Internet of Things has begun eliminating manufacturing delays, bringing transparency to the supply chain, streamlining research and development, and facilitating real-time decision making about what to produce and how to produce it.

FIGURE 2: DIGITAL TRANSFORMATION HIGHLIGHTS IN MANUFACTURING

Sales and operations planning	Research and product development	Manufacturing automation and quality	Manufacturing support and services	Supply chain transparency and predictability
Integrated demand and capacity matching to aid strategies that most profitably manufacture and most profitably prioritize production.	Linking of sales and operations planning to research and development decisions and using digital design to eliminate costly overuse of paper-based design.	Real-time integration across a network of machines and advanced analytics to enhance and control quality.	Applied analytics for forecasting spares and maintenance needs, and systems integration to optimize inventory.	Networked supply chain with status visibility and timing of parts delivery linked to instant production changes.

⁵ John Huetter, "Update: New FastMobile Allstate payments would apply to shops too," Repairer Driven News, January 28, 2015, <http://www.repairerdrivennews.com/2015/01/28/allstate-new-customer-claim-payments-faster-than-checks-ef/>.

Manufacturers are enhancing their sales and operations planning through digitization by developing detailed sales forecasts that then get matched to detailed production capabilities and capacities so that the manufacturers can best produce what they're selling. In addition to knowing how to produce items most profitably, manufacturers can set priorities when forecasts and capabilities are misaligned, thereby improving financial results. They can ramp up production when sales demand is projected to exceed manufacturing capabilities, and they can downsize production efforts and costs when projections indicate that manufacturing capacities will exceed demand.

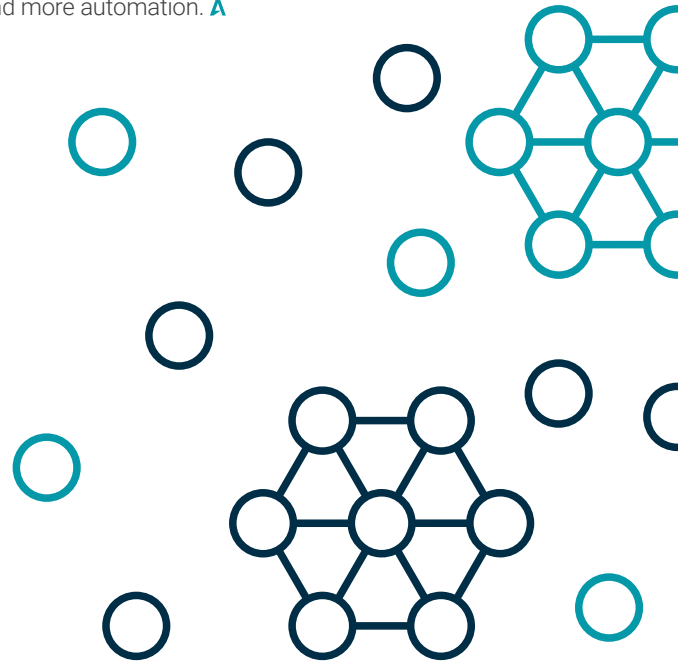
Robust, digitally informed, demand-to-capacity- matching results can also be linked to research and development (R&D) decisions. As demand exceeds capacity, R&D management can know where to invest in more capacity. When capacity exceeds demand, R&D can assist with streamlining the overcapacities to be more cost-effective and minimize inventory investments.

The aerospace industry stands to benefit significantly from supply chain transparency and predictability. Manufacturing delays caused by the supply chain remain a major industry concern. Many parts go into the making of an aircraft, and they come from thousands of suppliers. When parts are not delivered as expected, costly production problems and delays ensue. A comprehensive supplier network that gives

the real-time shipping status of parts would arrange production adjustments when delivery times change and could solve many of the problems caused by unexpected shipping delays.

CONCLUSION

Digital transformation is happening in every industry, but to accommodate it, industries are taking different paths at different speeds. All of them will inevitably get to the same point upon a complete transformation. And each industry will digitally understand and digitally interact with customers, will operate their businesses based on real-time information, and will continue to improve job functions with more and more automation. **A**



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