



# Don't burn the ships: Sail for a new world of manufacturing performance

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While there's no going back to a predigital, pretechnology age, much of what manufacturers already know will still be of great value as they transform their performance.

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"Burn the ships!"

The leader most often credited with the infamous command is Hernan Cortes—who, in 1519, landed on the shores of Mexico in search of riches and scuttled his ships to eliminate any notion of retreat.

The phrase has now become commonplace in modern boardrooms, particularly in reference to digital and other technological changes in manufacturing. It seems to be driven by three assumptions:

- There is no going back.
- Conquer or be defeated: you and your team have no middle option.
- What got you *here* will not get you *there*.

Together they suggest that to take advantage of the digital revolution, companies must forget everything they

have learned about manufacturing in order to embrace the new world.

On balance, we disagree. In our view, manufacturers must instead reconcile a difficult duality: embrace the ongoing disruption, but continue to reinforce foundational insights about manufacturing performance that have proven successful for decades.

Before we explore whether the three assumptions underlying "burn the ships" apply to the digital revolution, let's first describe the New World of performance that digital manufacturing promises to deliver.

## The new world of manufacturing performance

It's 2030 and you are visiting a newly built manufacturing plant. By this point, "lights-out" plants—with no direct human labor—

are now the norm rather than a visionary goal, accounting for six in ten of all factories. Instead, off the factory floor, skilled operators work hand-in-hand with advanced robots capable of learning, training them, and solving improvement opportunities on the shop floor. Efficient, flexible additive-manufacturing capabilities have finally fulfilled their promise of making highly customizable products both inexpensive and readily available.

In the 40 percent of plants still requiring direct labor, operators with digital skills perform only value-adding tasks and actively manage their own work. Many companies have adopted augmented reality in their assembly areas and are performing all hazardous tasks remotely and virtually. Production performance information is available in real-time, triggering frontline decision making and rapid escalation of problems. Digital sensors detect leading indicators of equipment breakdowns and preemptively signal preventive actions.

The plant manager is not on site but is fully engaged: she checks her metrics from a remote location, and, if the analytical forecast anticipates major changes in demand, she “talks” to the machinery to make changes to the production plan. The manager oversees a network of plants but spends very little time reacting to problems. Her job is less stressful than it used to be overseeing just one plant: robust, stable processes and learning machines leave fewer decisions for her to make, and the remaining ones truly require her knowledge and experience.

Is this new world a point of no return or the beginning of a journey? To find the answer, let’s test the assumptions inherent in the phrase “burn the ships.” The new assumptions that emerge will allow us to set a course that is appropriate for manufacturers across industries.

## Assumption 1: There is no going back

### New assumption: There really is no going back—but choose the new direction wisely

Manufacturers are under significant pressure to embrace the latest technologies, completely transform the entire organization through lean, apply advanced analytics, and the list goes on. But this frenetic activity often comes at a cost: too little of it ends up creating real value. As a result, the company ends up losing long-term competitive advantage rather than strengthening it.

There’s little question that sectors that have embraced digital have achieved a competitive advantage over those that have not. As shown in Exhibit 1, firms that invested in digitization as early as 1997 have subsequently expanded their use of digital by 400 percent, whereas the rest of the US economy experienced relatively modest growth in digitization. This competitive advantage can be measured overall and in terms of assets, usage, and labor. The advantage was already evident a decade ago and has increased considerably in recent years.

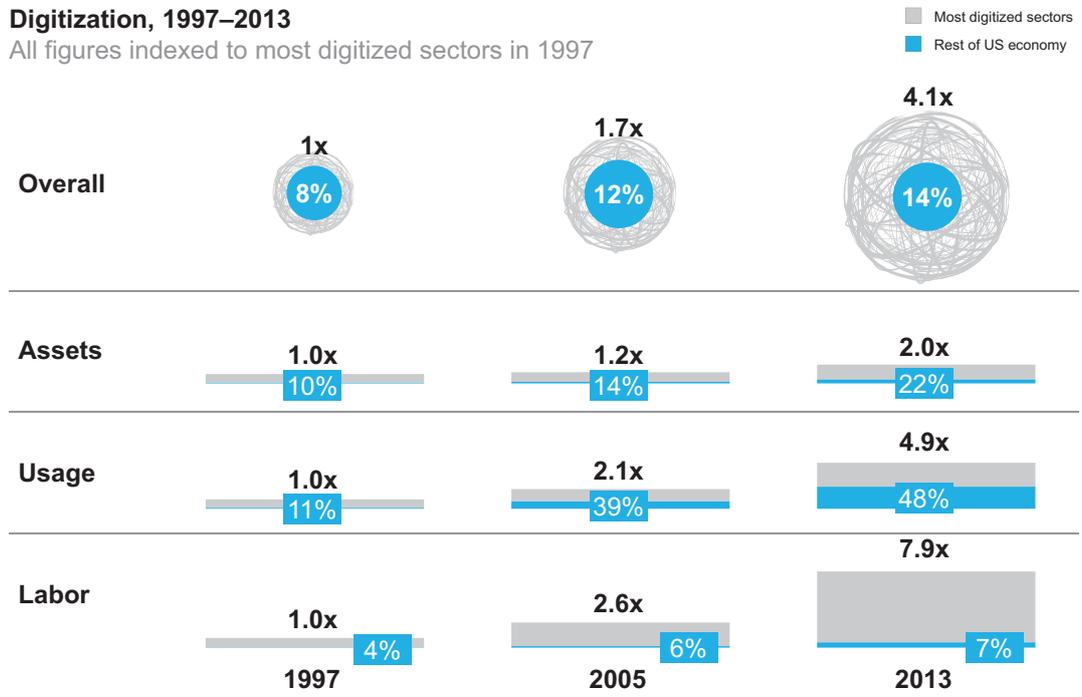
But it raises a crucial question: Digitization of what? Throughout industries, companies are demonstrating the value of getting digital right by making thoughtful choices about where they invest, looking outside their organizations to understand the latest trends:

- **Using analytics to accelerate time to market.** A healthcare company used an enterprise-analytics platform to improve clinical-trial-site selection and predict the time required to complete trials. To get beyond the usual improvement levers, it identified and examined a set of counterintuitive factors

**Exhibit 1. The most digitized sectors maintain a considerable lead in digitization.**

**Digitization, 1997–2013**

All figures indexed to most digitized sectors in 1997



that impact how its products are brought to market. One key insight was the significance of trial-site allocation. To ensure fewer resources are expended on specific trials, the company optimized its geographically dispersed sites. A centrally governed process of data entry facilitated the approach, identifying opportunities to consolidate sites. The impact was significant: the company reduced both cost and time to market by more than ten percent.

- **Printing a car.** An automotive company partnered with a full ecosystem of Internet of Things specialists to design and manufacture a 3-D-printed car. Using the company’s open-innovation platform, the design process required only two months to develop a prototype. Approximately 75 percent of the car was printed, including nearly all of the body panels and the chassis.

- **Offering digital solutions.** An equipment manufacturer has transitioned from selling products to offering digital solutions that help its customers increase productivity, performance, and profits. To make the transition, the company adopted a new business model of embedding software- and data-driven digital services in the core of its business.
- **Enabling autonomous freight handling.** A logistics company has created the world’s first fully automated terminal for handling freight. The automated system utilizes remotely controlled cranes to transfer freight between vehicles. Labor productivity at the site has increased by more than 80 percent.
- While there are many sources of value, successful companies pursue a focused portfolio of initiatives to optimize return on

investment (Exhibit 2). And they must continue to conduct research and benchmarking to determine which technologies are applicable and best suited to their situation.

**Assumption 2:  
Conquer or be defeated—you and your team have no middle option**

New assumption: To conquer, you must embrace new tools and accelerate digital adoption

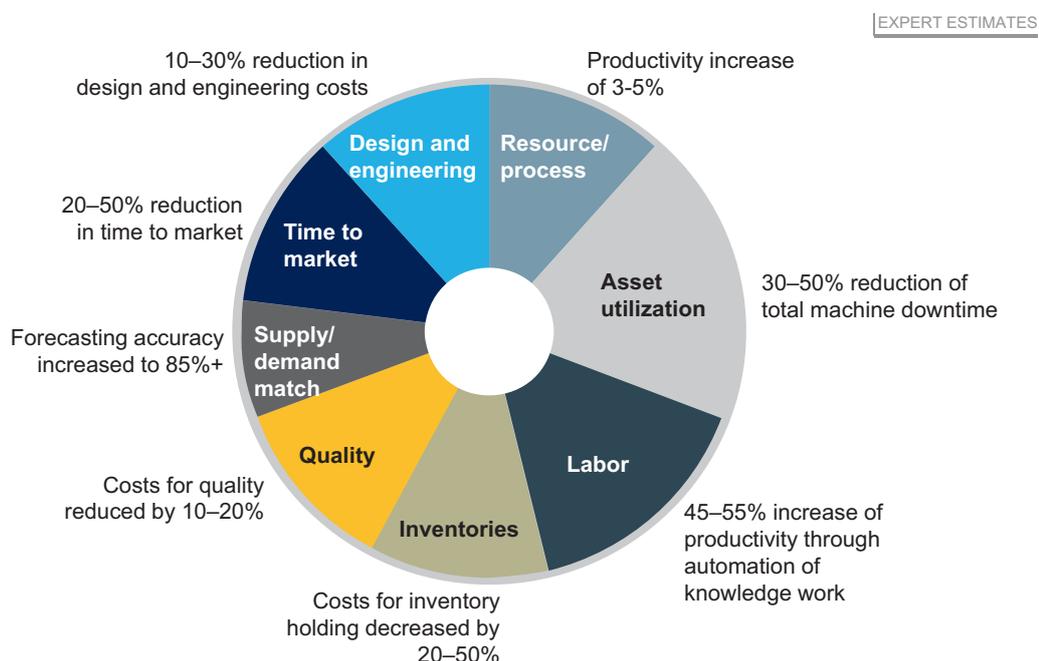
To capture the competitive advantages of digital manufacturing and advanced technologies, manufacturers must move now, before the tipping point arrives (Exhibit 3). Throughout industries, innovative start-ups have created disruptive business models, which early adopters have eagerly embraced. Recognizing the need to transform, advanced incumbents adapt the new models to their established businesses. Once mainstream customers adopt the new models, the industry reaches the tipping point: advanced incumbents and established start-ups constitute the industry’s new normal. The laggard incumbents die.

There are notable examples of incumbents that failed to adapt: Blockbuster did not move fast enough to offer movies streamed via the internet, Kodak was too slow in transitioning to digital photography, Borders did not offer online sales, and Palm lagged in changing its technology.

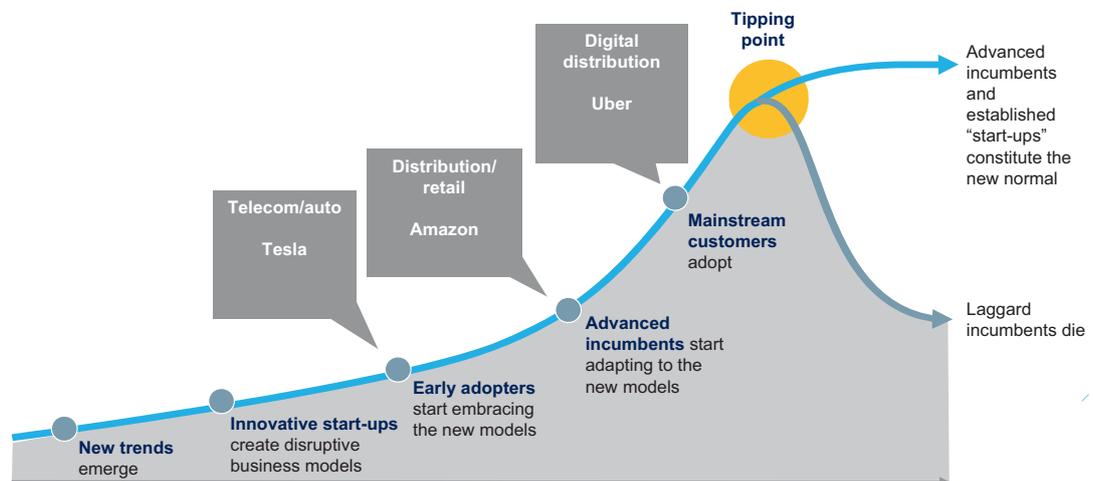
To accelerate to the tipping point, companies must achieve excellence in the following three topics:

- **People and capabilities.** To keep pace with disruptions, companies need to develop more complex skill profiles that merge functional, technical, and leadership competencies. The right capabilities are essential for accelerating the pace of change and building a problem-solving mind-set. However, people remain the foundation of success, including senior leaders with the ability to set a vision for the future. In some cases, recruiting expertise from outside the company is necessary to ensure that the right people are in place.
- **Mind-sets.** Experimentation must be in the organization’s DNA and be backed by the structure and discipline to generate

**Exhibit 2. A focused portfolio of initiatives helps optimize return on investment from disparate sources of value.**



**Exhibit 3. Manufacturing companies must move now, before the tipping point arrives.**



measurable progress. Organizations that are wired to say “why not” and pursue opportunities proactively (versus staying the course) will accelerate change. They will move faster to an objective, fact-based point of view by reducing the lag time between the arrival of something new and an appreciation of what it means for the organization. Although it is not literally the case that the company must conquer to stay in business, all employees should feel a sense of urgency.

- Tools.** A transformation is more than just the tools. But introducing tools, such as advanced analytics, benchmarking, and diagnostic surveys, to name a few, can significantly accelerate your assessment of operational improvement opportunities and, ultimately, the speed and accuracy of day-to-day operations.

**Assumption 3:  
What got you here will not get you there**

New assumption: Don't burn the ships.  
What got you here will still get you there

Even as more disruptions and new technologies descend on manufacturing plants, the underlining sources of value remain unchanged. Digital simply

unlocks ways to accelerate the rate of improvement, and new process technologies are replacing old ones and promoting new degrees of freedom. It can be tempting to go after the shiny object of digital or advanced analytics or the quick wins, but companies that truly understand where opportunities exist and the potential price and time to implement change are much more likely to succeed.

Companies should first carefully consider whether digital initiatives are aligned with their operations objectives. For example, one global manufacturer found that implementing a digital production-tracking system actually encouraged supervisors and managers to become disengaged from the shop floor. Instead of going to the floor to solve problems, supervisors and managers remained in their offices and discussed problems in meetings.

The following imperatives that lead to high performance in execution today will lead to even higher performance in the new world of digital and advanced technologies.

- Set high aspirations.** Define aggressive cascading targets and end dates. Digital investments should deliver measurable returns as other business investments do.

- **Put the customer or client first.** Strive for long-term competitive advantage while relentlessly focusing on customer value. As lean principles prescribe, always focus on what the customer or client wants and will pay for. Any investment in digital should be viewed as value adding from the eye of the customer.
- **Relentlessly eliminate waste.** Waste is one of the three evils that all transformation programs address (in addition to variability and inflexibility). Although it is impossible to fully eliminate waste from a production system, strive to reduce the use of any resource that does not add value. Seek out digital solutions to automate mindless tasks and release mental capacity for more value-adding activities.
- **Respect people.** People make change happen, which makes it imperative to know, understand, and foster a thriving culture. We have seen countless instances in which the idea of change is exciting, but people at either the leadership or frontline levels are not ready to implement the changes. Whether through training or recruiting, leaders must be onboard to create the vision and have the required integrity, courage, and agility. As with any change, the organization must be agile to support disruptive change and continuously adopt new and better technologies.

### The journey has only just begun

Let's review how the journey to the new world of digital and advanced technologies changes the assumptions underlying "burn the ships":

- **Assumption 1.** "There is no going back" becomes "There is no going back, but standing still is also not an option."

Leading companies are investing heavily in digital manufacturing and advanced technologies

- **Assumption 2.** "Conquer or be defeated: Your team has no middle option" becomes "To conquer, you must embrace new tools and accelerate digital adoption." Technology is becoming more available and easier to understand. Leading companies are investing in and creating tools to help with both day-to-day activities and the development of future processes.
- **Assumption 3.** "What got you here will not get you there" becomes "Don't burn the ships. What got you here will still get you there." Leading companies know that digital tools and approaches can be helpful, but only if they continuously pursue operational excellence at the foundational levels of manufacturing performance.

In the past, leaders exclaimed "burn the ships" to announce the end of their journey. But for the global manufacturing sector, the journey to the digital future has only just begun. Today, your company has reached a unique stage within its journey. The capabilities and culture that brought you to this point will remain the fundamental enablers of the journey that lies ahead. To reach the new world and thrive in its as-yet-unexplored environment, you must apply these fundamental enablers while actively embracing digital and advanced technologies. Leaders should exhort their organizations to onboard new tools and methods and set a course for the new world!

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