

The great re-make: Manufacturing for modern times

Erin Blackwell, Tony Gambell, Varun Marya, and Christoph Schmitz

A little more than 80 years ago, Charlie Chaplin's classic movie *Modern Times* was released. The scene in which he tries to keep up with the assembly line with his arms flailing as he twists wrenches in each hand, is one of the best-known in film, and it's still what many people (at least those who haven't worked in factories) think of when they think of manufacturing.

But those who know factories know how much they have changed since then: think of the differences between the factory of 2017 and 1937. Or 1977. Or even 2007. Think of the advances in automation, robotics, sensors, the Internet of Things, analytics, big data, artificial intelligence, and design methodologies. How much more will manufacturing change by 2027? By 2037?

How do manufacturing organizations keep up with this pace of change—and what will you, as a manufacturing leader, need to do to change with it?

We believe we have entered a new era of manufacturing for modern times, where it's at least as hard for organizations to

keep up as it was for Charlie Chaplin. Today's modern times have brought unprecedented demands, and not only for the perennial goal of more product for less money. They have increased customer and regulatory scrutiny, in the name of frictionless convenience and flawless quality. They have enabled advances in the availability, storage, and use of data in manufacturing. They have exacerbated product and demand complexity. And as a result, they have compelled managers toward ever-greater productivity improvements, whether through operational or structural transformations.

As a result, we believe we are also on the cusp of a great re-make in manufacturing. We expect some companies and even whole industries to accelerate toward this future, largely based on two factors: first, the level and speed at which modern times require change and second, the degree to which new digital advances will unlock opportunities.

In the end, however, we believe that successful manufacturing companies will

both embrace new advances, while staying true to enduring beliefs: that the foundational elements of manufacturing performance that were true in the industrial revolution, that were true for Henry Ford in the early 1900s, and that were true for Toyota in the 1980s remain true for all manufacturers today.

With that in mind, we expect you'll find some topics in this compendium that are intriguing, some that are challenging, and others that provide further support to your current practices and capabilities, with material that is relevant from the C-suite to the front line. We hope that you and your colleagues find this compendium a valuable resource as you aspire to a new era in manufacturing leadership.

We present this compendium of all new articles organized around three themes relevant to manufacturing companies today:

Modern times

In this first section, we explore the changing landscape of manufacturing across sectors. Over the next decade or so, global consumption is forecast to increase by about \$23 trillion, and the consuming class by about 1.8 billion people.


Consequently, the need to understand demand—and how, where, and when to produce—has become even more critical. As digital capabilities become more attainable and understandable, the adoption of these technologies will drive levels of competitiveness and enable faster and more agile production systems. However, the basics of operational excellence will remain the foundation of an organization's transformation and journey into the future.

Modern vision

For organizations to remain competitive, they must think about the value chain from beginning to end, through all aspects of production. In this next section, we dive deep into specific topics that we think are important for companies to consider. Some are technical concepts, such as advanced manufacturing, network optimization, and advanced analytics, while others focus on crucial mind-sets and behaviors, such as leadership and the workforce of the future.

Modern practices

With all of the concepts and theory for leaders to think about, it is often daunting to think about the actions necessary to make change happen. Trying



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to make everything happen at once can often lead to failure, while going too slow wastes an impossible-to-replace competitive advantage. In this section, we address some of the tactical steps needed to steer an organization on the right path forward.

If you are a COO or other member of the C-suite, we hope you will pay special attention to the section on where manufacturing is going, to help you think about your strategic imperative and the future of your business.

We hope the perspectives in this book prove to be both intriguing and instructional. Our aspirations are to help executive teams navigate the continually changing landscape of manufacturing more confidently and help them prepare for future disruption.

Get ready for **the great re-make.**

Get ready for **manufacturing in modern times.** We look forward to continued discussion on the topics most relevant to manufacturing today.

Best regards,
Erin Blackwell, Tony Gambell, Varun Marya, and
Christoph Schmitz on behalf of McKinsey's Global
Manufacturing Practice.