



Digital Industrial Transformation Playbook

Business model innovation pillar



Introduction

In December 2016, GE Digital unveiled its playbook for digital industrial transformation. Based on our own transformation journey, the playbook helps other industrial companies leverage the tools, techniques, and technology GE used to transform into the world's leading digital industrial company.

Industrial companies are entering a new period of change marked by both opportunities and threats. Those who embrace digital transformation have an opportunity to drive a step-change in operational productivity. In addition, digitization enables industrial companies to develop operational agility. For industrials, business model innovation relies on operational agility. The stakes are immense.

McKinsey & Co. reported that the Industrial Internet of Things (IIoT) would create as much as \$7.5 trillion in value by 2025.

One thing is clear—the Industrial Internet is not optional, and it is as important to leadership and the future of industry as the adoption of electricity was in the last century. Early adopters are more likely to find lasting results. For those who lag behind, the future might not be as bright.



GE's capabilities and operating model for becoming a digital industrial

In 2010, GE made a strategic decision to move from a defensive market position—where we saw new IoT market entrants as threats to our service contracts—to a growth-oriented market position where we focused on providing a rising tide that lifted all ecosystem participants.

Our path to realizing our strategy is straightforward.

01 GE for GE

Use our new capabilities to drive internal productivity and cost improvements.

02 GE for customers

Leverage the insights and capabilities born out of our internal productivity work to offer a complete set of industrial applications.

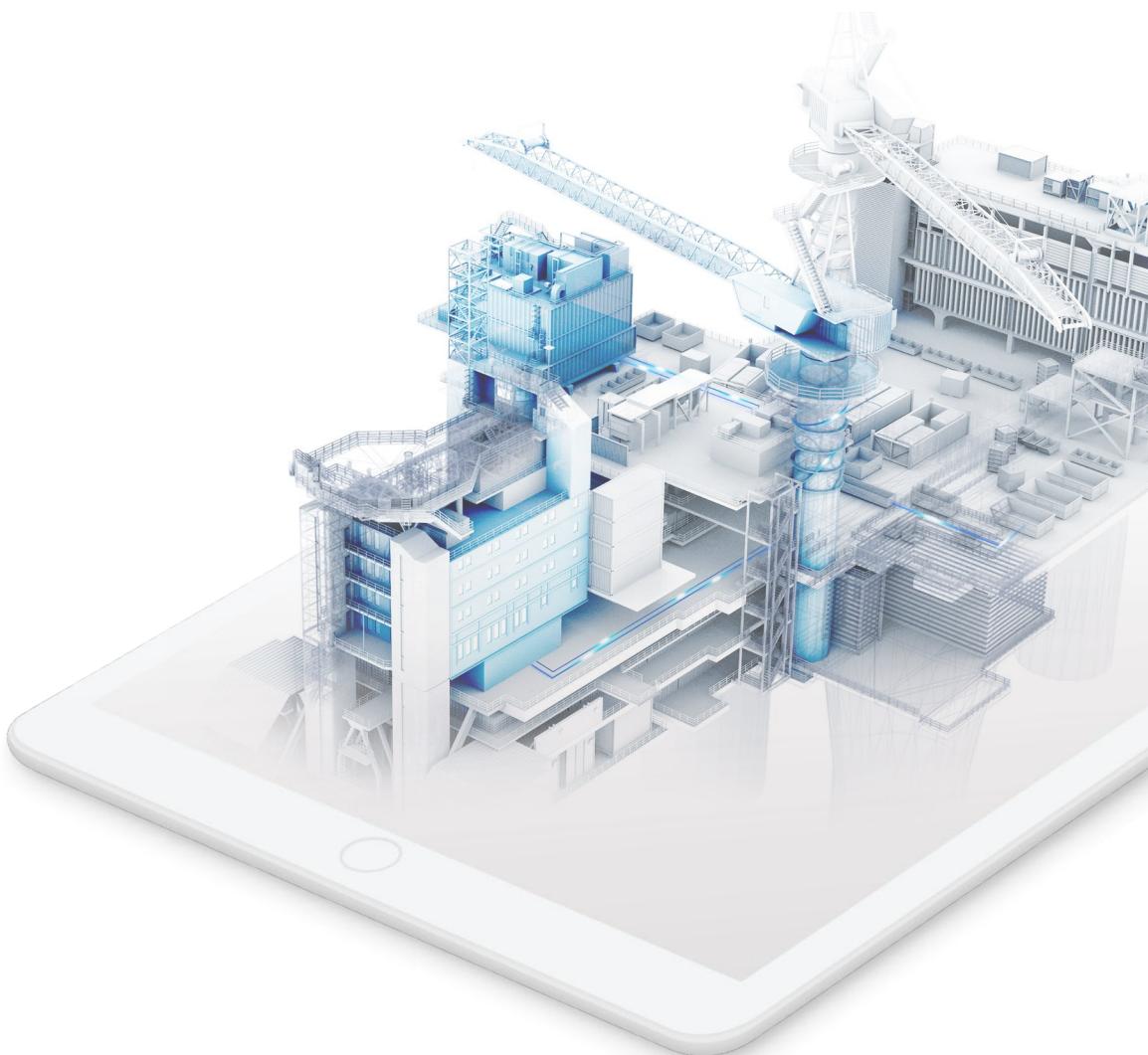
03 GE for the world

Make our Predix platform available to everyone for co-creation and innovation across virtually all industrial categories.

Transformation in any company is complex, and GE is no different. It requires change across people, processes, and technology. In order to accomplish transformation at scale, we broke the challenge down into five key focus areas for digital industrial transformation:

- 1. We created a new business unit called GE Digital** as the organizational mechanism to drive change, providing us with the operating model and organizational capabilities to become a digital industrial.
- 2. We built Predix** the platform for the Industrial Internet to enable GE and our customers to start at the innovation layer rather than reinventing the IIoT wheel.
- 3. We created an open-innovation partner ecosystem** that our customers leverage across industrial markets and industrial outcomes.
- 4. We systemically drove culture change.** We needed to develop the necessary processes for rapid decision-making, iterative improvement loops, and an ongoing people management process to ensure that the culture doesn't reject the transformation.
- 5. We rethought how all of these factors may impact our customers' business models.** And we created a Digital Transformation Blueprint service to help customers leverage business model innovation within their own markets.

While all these initiatives play a critical role in the implementation of digital transformation across an enterprise, it's important to consider your goals for growth and business model change. In this white paper, we will discuss how you can transform your business model and internal operations in order to deliver new forms of value through digitization.



What is business model innovation?

Business models describe how a company creates and captures value. For industrials, business model innovation often means transforming a product or service into an outcome delivered as a service. The migration to “X-as-a-Service” will not be profitable without world-class productivity enhancements to drive margins and exceptional operational agility to respond to new market dynamics. By internally transforming your business model and powering it with IIoT solutions, you will be able to maximize ROI and boost operational efficiency. But, in order to successfully change your business model, your organization must first:

- Drive internal improvements that self-fund the next step in your transformation journey
- Build the operational agility needed to innovate at the business model level
- Enlist internal champions early and build the momentum needed to drive more radical transformation

At GE, we've witnessed business model transformations first-hand within our own company. If you looked at GE Power a decade ago, you will find an organization that sold gas turbines and other power generation hardware. Fast forward to today's digital industrial age and the business model for GE Power has vastly changed. Now, GE Power is more than just power generation, providing additional services and capabilities such as improving the uptime of our turbines.



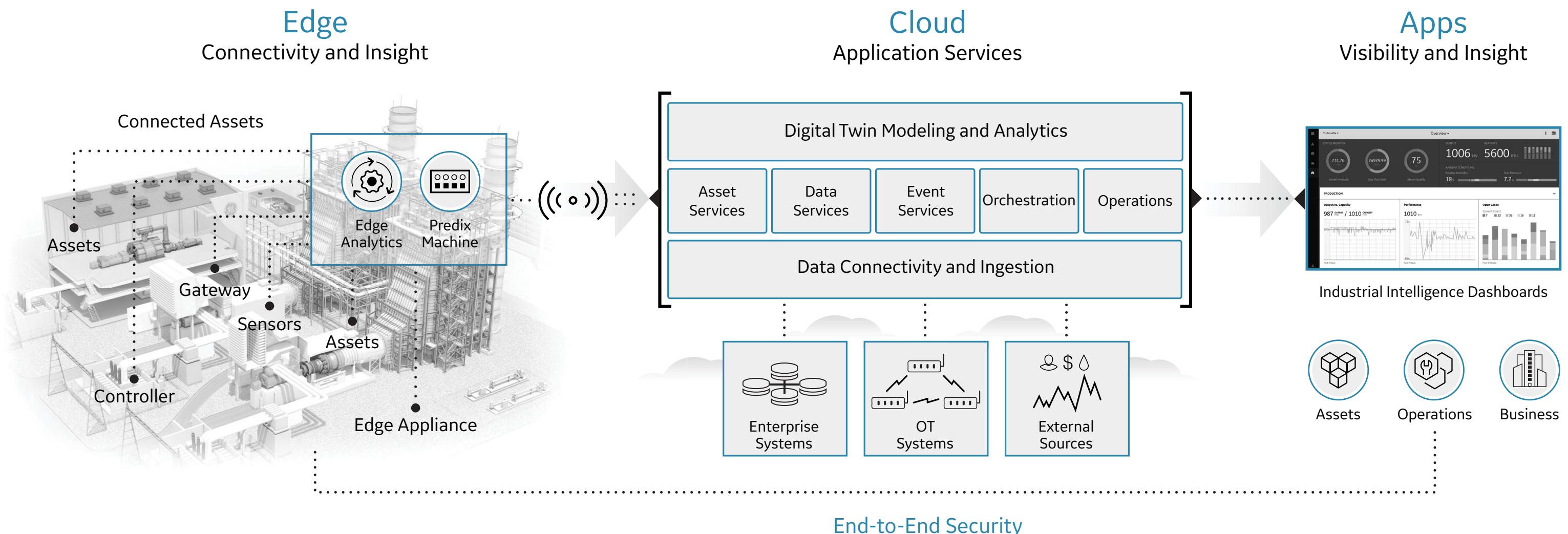
Build vs. buy

One of the first decisions a company must face in its digital transformation journey is whether to build its own solution from scratch or to engage an outside partner. We call this “build vs. buy.” Companies who decide to build its own industrial-strength, enterprise-grade digital industrial solutions face a massive ramp-up just to get to the starting line.

They must build new departments; recruit and retain the right talent; align network capabilities and operations; consider the impact on commercial operations; develop new billing and financial strategies; and more—all before the first application goes to market.

So, the gap between investment and the first return on investment is much greater than with a pre-existing solution. GE's Predix affords companies the luxury of starting at the innovation level rather than at the ground floor. This means that process improvements are identified quicker, value-add applications go to market faster, and revenue begins flowing sooner.

PREDIX



A real-world business model transformation:



Pitney Bowes—which provides global e-commerce solutions, shipping and mailing products, location intelligence, customer engagement, and customer information management solutions—has become a pioneer in the digital industrial age. The company has been closely working with GE Digital over the last two years on its digital transformation to become a global, cloud-enabled, cross border e-commerce company.

More specifically, Pitney Bowes was also looking to accelerate its long-time goal of driving innovation within its big industrial mail equipment. One of the main challenges that the company was facing was with its large-scale mail inserter machines. Anytime one of its customers experienced an issue with a mail inserter machine, a Pitney Bowes technician would show up on-site to repair it. This wasn't cost effective for Pitney Bowes and didn't deliver added value to the customer—a lose-lose situation.



Pitney Bowes knew that it needed to transform its service models in order to:



Improve service value for its clients



Increase revenue



Gain savings in field support



Innovate faster

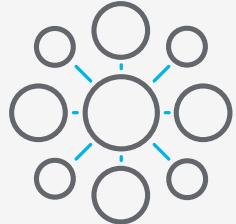
By partnering with GE Digital, Pitney Bowes was able to achieve:



Increased client satisfaction



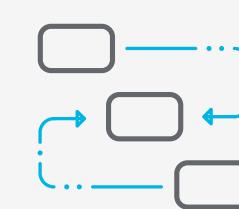
Identified up to 35 hours of potential additional runtime per month



Accelerated time-to-market



Optimized operations



Reduced time for troubleshooting from days to hours



Improved cyber security



Launched Clarity app within 12 months

With these specific goals in mind, Pitney Bowes assessed its existing organizational structure and realized that its focus was not in the right place. The company decided that its existing business model didn't work if it wanted to continue to be a leading digital industrial organization. Pitney Bowes knew that it needed to transform its business model internally to maximize the success of its new IIoT solutions and sustain business results.

In order to better implement these new technologies across the enterprise, the company underwent an internal reorganization and created an IoT service group to closely align the desired outcomes. With its new organizational structure in place, the IoT service group focused on leveraging data insights to proactively maintain systems at customer sites to avoid machine failure.

Pitney Bowes also leveraged Predix to gain more insights into how its mail inserters operate at the machine level. By adding sensors to its equipment and capturing sensor data from the connected systems, Pitney Bowes was able to co-develop an app, Clarity, with GE Digital. Clarity is an innovative Industrial Internet application that turns real-time operational data into actionable insight to optimize performance. With Clarity, Pitney Bowes can make better-informed decisions on when equipment needs to be serviced—gaining additional machine runtime for its clients and saving on emergency on-site repair visits.

This approach had an immediate effect. For one, the company identified a potential of 35 hours of additional runtime per month which could result in thousands of dollars of added revenue. Without the right data and the power to analyze it, those hours would've remained buried.

With real-time machine data driving decisions, Pitney Bowes was also able to streamline operations and reduce time-to-market for new products. Troubleshooting and maintenance time were cut from days to hours and diagnostics have become infinitely more accurate. Because Predix allows development to begin at the innovation layer, Pitney Bowes was able to launch and monetize its first app within 12 months, increasing client satisfaction and service contract retention. And by using new analytics that analyze the historical data already collected in Predix, Pitney Bowes is also adding two new applications—an operator productivity app and a dynamic job scheduling app—to further increase revenues and client satisfaction.

Since many of Pitney Bowes' customers operate in extremely sensitive and highly regulated industries such as healthcare and the financial sector, cyber security is a constant consideration. Predix addresses this with a sophisticated suite of embedded compliance and audit processes, layered with a variety of advanced security controls.

Digital Transformation Blueprint

For many companies, getting started is the hardest part. At GE Digital, we make the first steps easier with Digital Transformation Blueprint services. The process starts by interviewing key stakeholders to get an understanding of your desired business outcomes, KPIs, company culture, leadership structure, and overall vision.

With this information in place, our digital transformation experts deliver the following.

- **Readiness Assessment**

An evaluation of your data health, operations, and readiness for change

- **Competitive Benchmarking**

An assessment of how your cost, reliability, and availability metrics compare to your competition

- **Digital Transformation Blueprint**

A customized adoption roadmap designed specifically to achieve your business goals

- **ROI Planning**

A clear value plan with the ability to track investment progress

Your Digital Transformation Blueprint provides a clear and actionable path forward based on your specific needs, goals, capabilities, and cultural tolerance for change.



Your next step

Digital industrial transformation is a process, with significant rewards for those who stay the course, and significant risks for those who execute poorly. GE has been on this journey for the better part of 10 years, and we have learned a lot in the process. We've seen what works, and perhaps even more critical, we've seen what doesn't. A holistic approach is vital to ensuring transformation is a long-term endeavor that delivers sustained results.

You need to take stock of the direction you want to go, the capabilities you'll need to get there, and the short-, mid-, and long-term steps needed to make the vision a reality are absolutely essential.

At GE Digital, we have some exciting ways we can help you along your digital industrial journey. From services to help you map out a digital industrial blueprint, to our GE Digital Foundries around the globe, designed to bring teams together to define outcomes using capabilities such as design thinking, data science, and a team of engineers and GE domain experts. We look forward to assisting you throughout your digital industrial transformation!

Download the entire GE Digital Industrial Transformation Playbook

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About GE

GE (NYSE: GE) is the world's Digital Industrial Company, transforming industry with software-defined machines and solutions that are connected, responsive, and predictive. GE is organized around a global exchange of knowledge, the "GE Store," through which each business shares and accesses the same technology, markets, structure, and intellect. Each invention further fuels innovation and application across our industrial sectors. With people, services, technology, and scale, GE delivers better outcomes for customers by speaking the language of industry.

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