

BEYOND THE HYPE:

HOW EARLY IOT ADOPTERS ARE DRIVING REVENUE AND QUALITY

First-of-its-kind survey details how IoT trailblazers are reaping the rewards of smart, connected products.

Executive Summary

For years, industry experts have speculated about the potential impact of IoT-enabled products. *IndustryWeek* and *Machine Design* conducted a first-of-its-kind study focused on manufacturers with smart, connected products in the market. The goal of the survey was to understand how IoT has been a catalyst for new business models and how manufacturers are driving revenue through the use of smart, connected products.

One of the key findings was related to the use of sensor data to improve product design. “More than two out of five (companies) are feeding sensor data into design and product development; almost half of them are using IoT data to improve product quality,” says Matt LaWell, a staff writer for *IndustryWeek* who first presented the findings.

The payoff for early adopters is significant. Nearly one-fourth of IoT trailblazers say smart, connected products have driven incremental revenue at their companies. Also, slightly less than one-third of survey respondents say IoT has helped drive competitive differentiation at their company.

Over the next two years, more manufacturers expect IoT-focused strategies to differentiate their products through increased service levels and functionality, improved quality, and new sales models. In this report, we’ll take an in-depth look at the ways smart, connected products are transforming business strategies for manufacturers today and provide insights into what’s next on the product roadmap for these early adopters.

Predictive Maintenance: Raising the Bar on Service Expectations

IoT trailblazers are collecting performance data with their smart, connected products. This data helps identify problems and service equipment more efficiently (see **Figure 1**). In fact, 52% of early adopters say predictive maintenance is their company’s top priority when it comes to increasing the value of their IoT products.

Types of data collected with IoT products

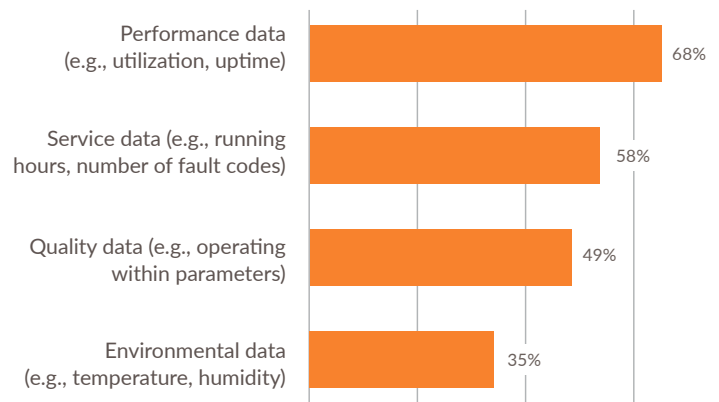


Figure 1

The ability to perform predictive maintenance has become a competitive differentiator. Oftentimes, when field technicians arrive on a job site, they don’t know what’s wrong. Typically, they arrive with a van full of parts and tools and then they begin the troubleshooting process. With IoT, remote monitoring via sensors provides data and alerts about the root cause. With these insights, technicians can ensure they have the right parts and tools to correct the problem when they arrive on the job site.

Early IoT adopters also are using real-time performance data to optimize service intervals. By monitoring variables, such as vibration data, energy usage or RPMs, manufacturers can now help identify customer patterns and build a service model around them. Some OEMs refer to this as service process optimization, which can help reduce maintenance and warranty costs.

Pitney Bowes Inc. used Electric Imp IoT secure connectivity platform to improve its service model for its mail insert machines. “In the past, what we had done was collect a lot of data on site, and every few months when a service person was out there, they would collect the data and bring it back,” says Rick Ryan, a senior research fellow at the company. “It was helpful, but we were finding that we were still replacing a lot of parts we didn’t need to replace.”

With IoT, in many cases, technicians can log into machines remotely from a web browser to monitor machine performance and take corrective actions, as needed. Predictive maintenance with IoT also enables manufacturers to eventually diagnose problems before something breaks, which directly increases uptime.

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IoT Data is the New Gold

Early adopters are finding innovative ways to monetize the data streaming from their smart, connected products. The study reveals manufacturers who have adopted IoT are leveraging the data to deliver more remote services, offer predictive maintenance, improve quality, improve customer service and enhance design capabilities (see Figure 2).

In what ways is your company currently using the data generated by its IoT products?

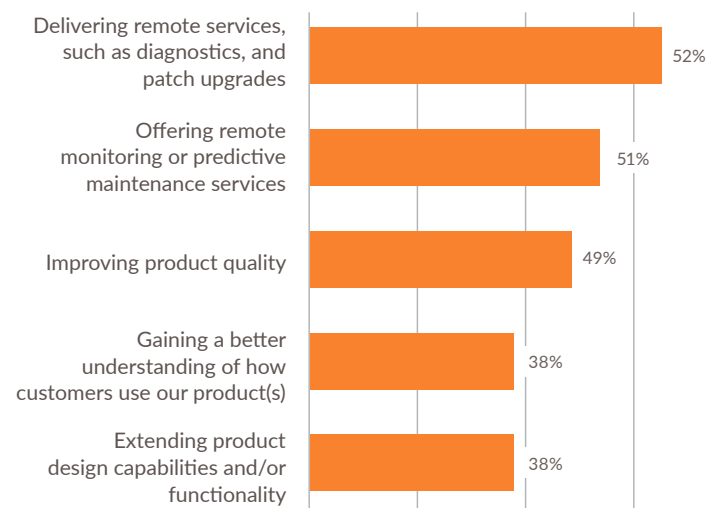


Figure 2

For example, some early adopters offer simple maintenance alerts for free and then sell power-consumption data as a premium service for energy-intensive industries.

Access to data also increases the opportunity to offer alternative purchasing options, such performance-based pricing models (see Figure 2). One major manufacturer of processing machines sells its equipment based on the amount of material processed. The company also can upgrade the software on the equipment to process more material if the customer's volume increases.

Some early adopters are now selling the software and charging a recurring fee to use it. In this scenario, the customer benefits by receiving the most up-to-date version, including additional pay-on-demand features.

The software industry has used this model for years. Often, they provide a piece of software and the ability purchase upgrades later as an ongoing service. In manufacturing, this creates a separate revenue stream and differentiates manufacturers from their competitors.

The study also shows how IoT has been a catalyst for embracing new business models, with predictive maintenance ranking first among survey respondents followed by the ability to offer performance-based pricing. (see Figure 3)

Which, if any, of the following business models has your company embraced as a result of its IoT strategy?

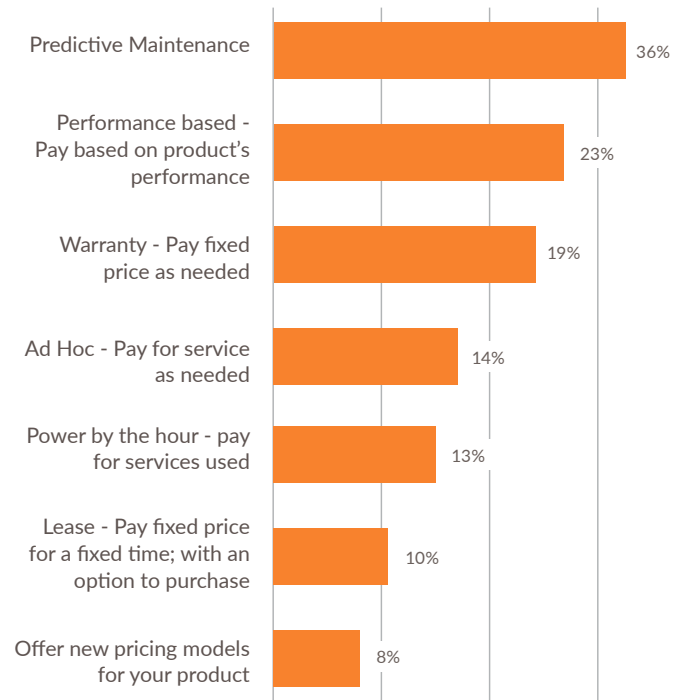


Figure 3

IoT Disrupts Design

Smart, connected products also deliver data about customer behaviors. Once you gain insight into service patterns, you can start to look at the data coming out of the machine to make the next generation of this product better. Nearly 40% of survey respondents say they're using IoT to gain a better understanding of how customers use their products (see Figure 4).

In addition, nearly half of manufacturers say they use IoT product data to improve product quality, while 38% say they're using data from IoT to extend product design capabilities and/or functionality.

One major equipment manufacturer is using IoT to enable “micro-segmentation” of its customer base. The company monitors usage patterns in different regions to determine whether climate or topology requires different machines.

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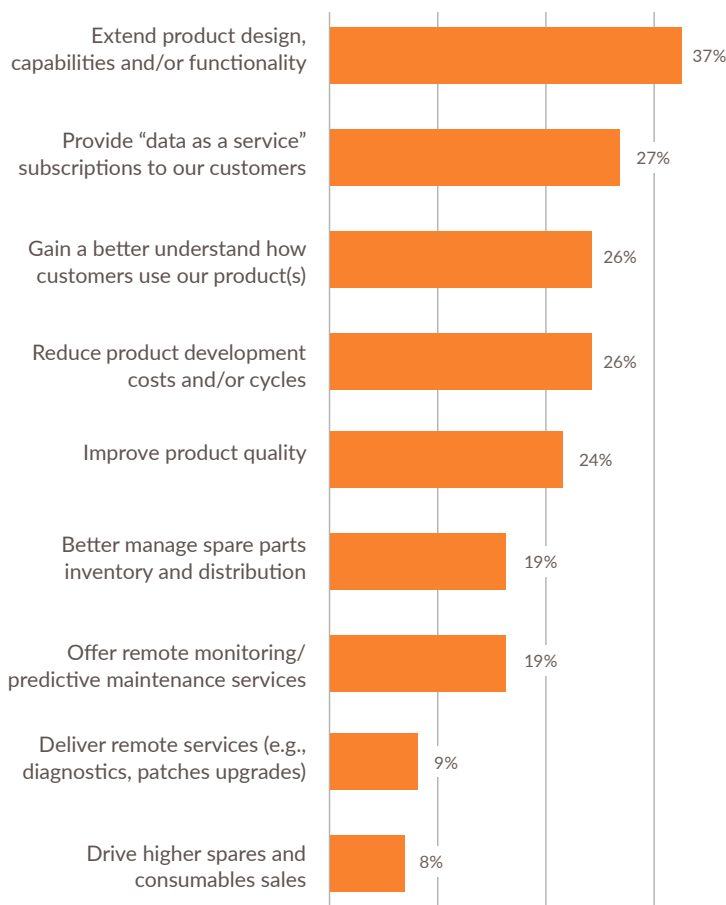


Figure 4

The product-development potential behind smart, connected products has gained the attention of design engineers. In fact, when asked which internal groups are the strongest champions of IoT, 62% of respondents said “engineering” (see Figure 5).

As more manufacturers build smart, connected strategies, expect to see companies create IoT-specific job titles, such as vice president of IoT services and chief digital officer.

“Every manufacturing leader I’ve talked to over the last few years, when I ask them who gets the IoT conversation going, I almost always hear ‘engineers,’” LaWell says. “So maybe this can be a reminder to leverage the expertise, which that group has. I don’t think engineers are necessarily overlooked, but they could probably be a bigger part of the process than they are.”

Which internal groups at your company are the strongest champions of IoT?

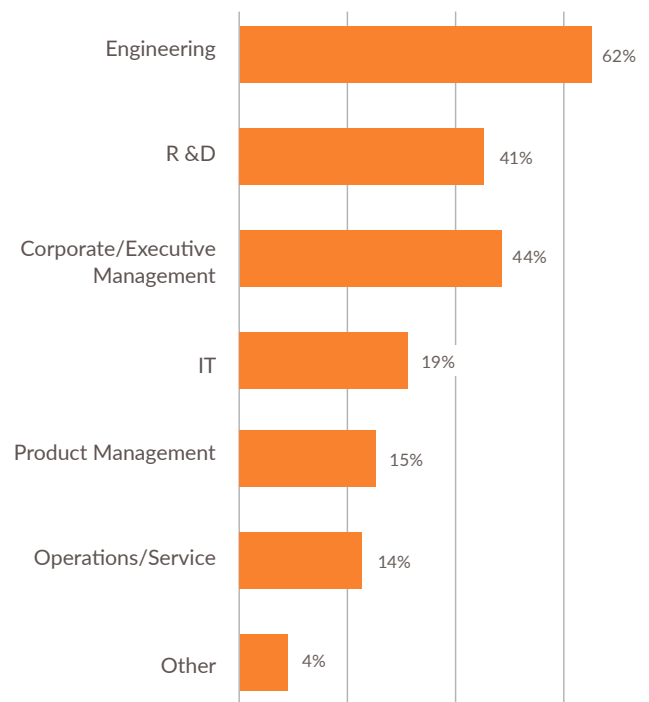


Figure 5

Early Adopters Are Rewarded

IoT is a key trend revolutionizing product design, service and quality. The survey indicates that a growing number of IoT trailblazers understand the value of smart, connected products and many have already reaped benefits.

For example, 24% of IoT trailblazers say smart, connected products have driven incremental revenue at their companies. Also, slightly less than one-third of survey respondents say IoT has helped drive competitive differentiation at their company.

IoT Trailblazers: What's Next on the Two-Year IoT Roadmap

The power of smart, connected products already is having a major impact on early adopters' near-term business strategies. By 2018, an increasing number of IoT trailblazers will weave smart, connected strategies into their product-development and sales models. Within the next two years, 31% of early adopters say they plan to use IoT data to extend product design capabilities or functionality. In addition, 25% say they expect to provide data-as-a-service subscriptions to customers, 22% say they want to gain a better understanding of how customers use their products, and 24% say they want to improve product quality.

The trends suggest that IoT trailblazers in manufacturing expect smart, connected products to have a significant impact on future revenue growth. It's an unprecedented time during which exact insights about product performance and service patterns are available in near real time via IoT.

The survey also indicates that manufacturers should at least take exploratory steps to understand the market potential of smart, connected products to keep pace with risk competitors.

Methodology

Between July 14 and July 28, 2017, Informa Research emailed invitations to participate in an online survey to a net 78,551 subscribers of Machine Design and *IndustryWeek*. By July 23, 2017, Informa Research had received 895 completed surveys. Of those, 143 reported their companies manufacture smart, connected (IoT) devices. The report was based on those 143 respondents.

About Electric Imp

Electric Imp enables manufacturers and enterprises to innovate and transform their products and services through the power of secure IoT. Over a 100 customer worldwide with million IoT devices deployed across 105 countries have been built with our highly secure Platform as a Service (PaaS). Our unique enterprise-to-cloud solution is purpose-built for the IoT with fully integrated OS, security, hardware, APIs and cloud services, empowering commercial and industrial customers to quickly develop, scale and securely connect products and services to millions of users. Electric Imp, founded in 2011, is located in Los Altos, California and Cambridge, England. For more information, visit <https://electricimp.com>.