

IoT: The Next Revolution

Adapting Business Strategies in a Dynamic New Environment

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We grow and thrive on change: individuals, nations and businesses all depend on periodic, drastic shifts to expand horizons and develop potential. Sure, change is uncomfortable, challenging, and often unwelcomed, but it is a primary driver of progress, innovation, and excellence. Think about the changes that came from the Industrial Revolution, the invention of the semiconductor, or the creation of the internet. Each has had a profound impact on the way the world works, and how businesses work within it. What could be the next revolutionary change to modern life and business? It's a hybrid between the digital and physical worlds called the Internet of Things.

What is the Internet of Things?

The Internet of Things (IoT) is a vast network of interconnected, data-producing devices—*things*—that are linked through the internet.¹ These devices contain sensors that enable them to transform information about their physical environment into data that can be transmitted, stored, interpreted, and acted upon.

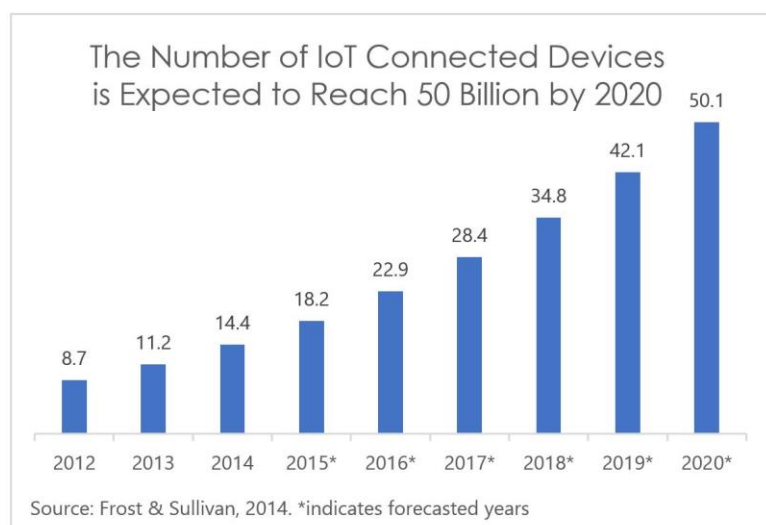
The “things” come in forms as wide-ranging as the products they evolved from—everything from smart watches that measure heart rate and activity levels, to automated machines on an

assembly line that dynamically adapt to real-time line conditions, to internet-connected thermostats that allow the user to control their home's climate from anywhere in the world.² As shown in the figure below, these “things” are becoming more and more prevalent in our modern world, with the number of connected devices projected to increase exponentially and exceed 50 billion by the year 2020.

As deployment of IoT devices accelerates, businesses of all industries will find themselves operating in a changing environment. What are some of those changes that will be driven by the implementation of this new technology?

Business Implications of the IoT

The Internet of Things is an abundant new resource for adding value. It will change the ways in which businesses develop and deliver products and services, interact with



customers, and streamline internal procedures.

Businesses function to deliver value to customers through products and services. Traditionally, management knows if and how their products or services are truly adding value by surveying customers or by conducting focus groups, both of which can be biased or incomplete sources of information.³ However, with the integration of IoT, management will be able to discover where and how their products are used and which customers use them, by analyzing real-time data transmitted by those very products.⁴ This data will provide management a window into the consumer's experience, opening the door to innovation targeted at purposeful product development. With such information, companies will be able to create and deliver products and services that meet the exact needs consumers have, free of potentially-biased findings from the older methods of data collection.

Even with targeted product development, occasional problems can occur. In the current system, a customer encountering a problematic product or service often calls the customer service department and angrily demands replacement or restitution. The Internet of Things offers a better solution in customer experience: products that continuously track critical metrics could instantly report malfunctions to the service department, where an employee could then contact the customer with a solution *before* that customer even recognized the problem.⁵ By tackling problems proactively, companies

using IoT could simultaneously improve customer satisfaction and product quality, greatly enhancing the overall customer experience.

Along with advancements in product development and servicing, the IoT will enable businesses to add value by streamlining internal procedures, as IoT adaptation will provide insights to generate efficiencies and cut costs.⁶ All businesses can capitalize on these benefits by implementing IoT capabilities into their processes; but industrial firms have been the first to reap these rewards. According to data from Gartner, by the end of 2016, 43% of businesses will use IoT technology, with the majority of those pertaining to the Utilities,

Oil and Gas, or Manufacturing sectors.⁷ These businesses can save time and money by continuously monitoring distribution channels, assembly line production

rates, raw materials flow, worker status, and equipment conditions; then using that data to highlight trends and predict outcomes.⁸ Management can then detect potential inefficiencies and can adaptively eliminate them through process optimization, increasing value through better use of scarce resources.

Adapting to the IoT

The Internet of Things brings with it a dynamic new environment that is saturated with data, and adapting to it will be key to a company's future success. A 2014 analysis by Goldman Sachs reported that "the Internet of Things will create new winners and leave in its wake a host of losers based on companies'

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abilities to adapt to a world where things are connected.”⁹ How should management implement IoT technology and change current business models to incorporate it?

Deployment of this technology presents a drastic change to the way most businesses currently operate. Business operations are often guided by a business model, which describes the firm’s value proposition and how that value is created and captured.¹⁰ Business models for traditional companies are static and backward-looking: the company identifies customer needs, develops a product to meet that need (value creation), then markets that product (value capture), and then begins the process once more.¹¹ A business model with this approach is, in effect, always one step behind, constantly trying to identify consumer needs and then reacting to those needs through product development. In contrast, an IoT-centered business model is dynamic and predictive—instead of looking backwards and developing solutions to past problems, an IoT-based business model addresses value creation in the present and uses real-time data to predict and respond to future needs. Additional value

can be created throughout the lifetime of the product through updates based on consumer usage patterns and needs.¹² Furthermore, instead of only capturing value at the point of sale, an IoT-based business model describes the ways in which products will continue to generate revenue through services that each product makes available.¹³ Finally, an IoT-centered business model differs from a traditional approach by emphasizing the synergies gained from collaboration between various partners and service providers resulting from the great interconnectedness of companies building IoT technologies into their products and services.¹⁴

In Conclusion

The Internet of Things is growing rapidly and will radically change how we work and live. It is a revolutionary set of technologies that is changing the way businesses operate, interact with customers, and deliver value. Company management can capitalize on this new tech revolution by creating business models structured around IoT-enabled processes and products, which will put them on the forefront of growth as IoT deployment becomes increasingly more ubiquitous. ■

Sources

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