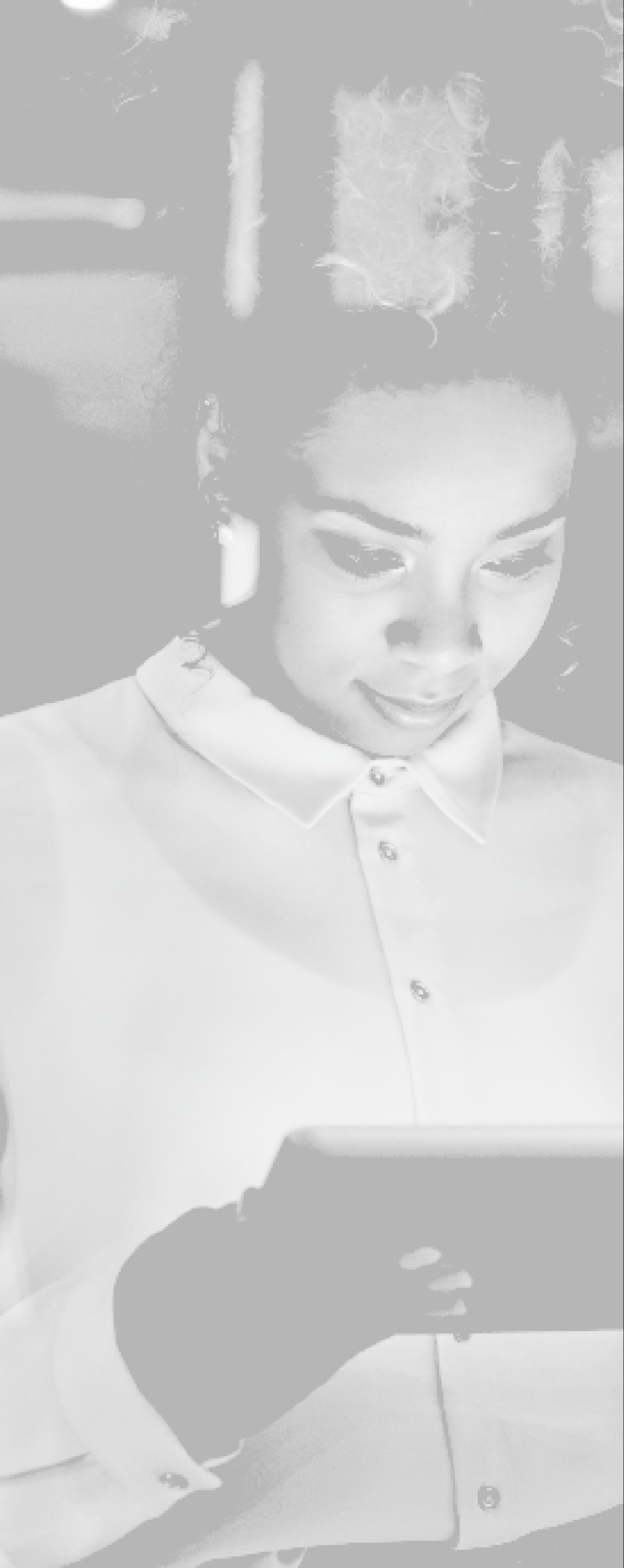


The background of the slide is a grayscale photograph of an industrial facility, likely a power plant or manufacturing plant. It shows large metal structures, pipes, and electrical equipment. A semi-transparent blue rectangular overlay covers the middle portion of the image, serving as a background for the title text.

HOW THE INTERNET OF THINGS **IS DRIVING** MARKET GROWTH



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The first industrial revolution was defined by mechanization, the second by mass production, and the third by automation enabled by electronics and information technology. Industry 4.0 is at the intersection of the physical, digital, and biological spheres. And according to the [World Economic Forum](#), ready or not, we have already entered the fourth industrial revolution.

As individuals and as companies, we're still adjusting to the impacts of the third industrial revolution. In fact, digital innovation is playing a huge role in disrupting our businesses and is still expected to do so for years to come. A recent [Forbes study](#) reported that half of executives expect their businesses to undergo a vast digital transformation in the next two years.

The fourth revolution will have an even larger transformational impact. Already, the Internet of Things (IoT) and artificial intelligence is all around us, from self-driving cars and drones to virtual assistants and software that translate or invest. The impacts to the labor market may be even more extreme, with some saying that jobs will be safer and more rewarding and others predicting that many people's jobs will be replaced by automation. When the future is ambiguous it's difficult to manage. Yet, companies must still prepare for what's coming.

IoT AS A COMPETITIVE ADVANTAGE

Businesses need to be technology-enabled to avoid becoming obsolete. Companies have the potential to significantly impact their market capitalization by leveraging the Internet of Things to increase revenue by offering new or improving products and services and decreasing the cost of products and services.

New technologies are changing consumer behaviors and leading companies are capitalizing on completely new business models to capture top line benefits. Companies are able to personalize and simplify purchasing experiences to drive customer loyalty and increase sales. Consider the technology innovations at Starbucks, who has been putting a heavy emphasis on smartphones and mobile technologies through [Mobile Order and Pay features](#) and delivery through Postmates. For top line

innovations, IoT investments drive a lot of data that allows companies like Starbucks to understand buying behaviors and combine that data with weather patterns, promotions, inventory, and local insights to improve the customer experience.

Ultimately, companies will be able to aggregate more information about people than ever before, particularly with the rise of cloud and big data. This aggregated data can create personalized experiences for customers creating a huge appeal and opportunity for companies willing to invest.

This opportunity for companies to gain competitive advantage from IoT is not limited to B2C companies. The Industrial Internet of Things (IIoT) can create an integrated network of “smart” devices which fosters improved data insights, opportunities for predictive analytics, and increased efficiency. At GE Digital, General Electric is reimagining how industrial companies operate plants and deliver products – using data as the fuel and advanced analytics to grow. These advancements can change the industrial manufacturing landscape.

EFFICIENCIES IN SUPPLY CHAIN AND QUALITY

To illustrate some of the benefits of IoT, consider the competitive advantages that a smart warehouse can offer distributors. From forklifts to conveyor belts, there are several pieces of equipment required to operate an efficient and effective warehouse. Most, if not all of this equipment can be augmented with IoT. Imagine the entire pick, pack and ship process connected with internet-enabled technologies. Connected shelves enabled with sensors and integrated with devices within warehouses and corporate offices will allow distributors to more closely monitor inventory levels from procurement to distribution. Sensors implemented within conveyor systems provide real-time updates on the movement of goods or issues within the machinery itself. Together, these technologies can provide instant transparency to warehouse inventory leading to significantly reduced stock outs and increased inventory turns.

For any industry, the ability to connect data points, maximize equipment efficiency, and extract performance insights are well-documented advantages of implementing the Internet of Things into the supply chain, beyond distribution. One of the most popular and debated solutions has been the incorporation of IoT into the supply chain for purposes related to speed has become especially enticing and beneficial for quality managers. Utilizing IoT can provide quality with the necessary data and documentation to identify root causes and execute corrective and/or preventive actions in a timely manner.

Leveraging IoT solutions can elevate the perception of quality as a more strategic business function as opposed

to being perceived as a reactive function or cost-center. Instead of putting out fires as they occur, quality managers can use IoT and predictive analytics to develop preventive measures for problems that could happen in the future. For example, some companies have employed predictive analytics to reduce cost per unit, increase productivity, and avoid purchasing additional manufacturing capacity. By improving foresight, companies can more accurately predict and prevent product shortages as well as help position the supply chain to facilitate innovation and adapt to evolving trends in personalized goods. In this way, implementing IoT can boost a company’s ability to improve outcomes for customers.

PRACTICAL APPLICATION OF IoT IN TRANSPORTATION

Additionally, internet-enabled technologies provide significant benefits to managing the transportation of goods. To be an industrial leader, firms must deliver high-quality products on time and in compliance with all applicable regulations. For example, agricultural and food distributors are required to transport certain products at regulated temperatures to ensure their goods do not expire upon delivery. These distributors are not only required by their clients to provide the timely delivery of their product, but are also required to comply with all government regulations regarding the transportation of food.

Without continuous, and potentially timely, checks from a driver in route, a distributor is unaware of their food quality and integrity of the goods within each truck, until they arrive at their destination. Did the cooling system break down? Was the back door left slightly ajar? Imagine sensors within each truck immediately alerting the driver, dispatcher and corporate office when the temperature changes. At all times, each truck can be monitored to ensure the integrity of their food and avoid costly surprises upon delivery. Moreover, installing smart devices elsewhere within these trucks can provide distributors with significant competitive advantages beyond the oversight of goods, including: improving customer service by providing clients with up-to-date information on the movement of goods and estimated delivery times, in addition to mitigating the risk of costly transportation issues by immediately identifying them as they arise and providing alternate solutions.

RISKS OF IoT

While IoT solutions modernize organization’s capabilities, they also have their own associated risks. Overwhelming influxes of data require complex infrastructure and platforms to help manage and make decisions. As connected systems extract data at higher volumes,

leadership must develop new ways to store, interact with, and interpret the data. After all, the ultimate value of data collection is the insights it generates.

The key to incorporating IoT is moderation. Leaders must identify specific areas of improvement and assess whether corresponding IoT solutions align with their businesses. Sometimes, selecting an IoT strategy without caution can result in massive volumes of perplexing data and increased inefficiency.

With regards to transparency, incorporating IoT solutions is a two-sided coin. Connecting a network of smart devices increases accessibility but also heightens the threat of cybersecurity. For some companies, protecting records and product information is of utmost importance. As the rate of cyber breaches continues to climb, network security and the protection of cloud-based storage systems will become additional areas for leading companies to address.

WHAT SUCCESSFUL COMPANIES HAVE IN COMMON

Companies who are successful adapting to an IoT world aren't those who just identify trends, but focus their capabilities to act on them. Successful companies have the following three commonalities:

1. They recognize the distinctive capabilities in their organization and understand that these capabilities are more than functional responsibilities. Companies that identify and understand their distinctive capabilities can react quickly to changing dynamics and can prepare for changes and uncertainty related to technology advancements.
2. Approach IoT with a cross-functional mindset to ensure differentiation. Best-in-class solutions reside across business units, disciplines, and technology. It is paramount that companies develop the ability to successfully manage these projects.
3. Prepare for the journey with a structured approach.

Many companies are getting practical with their approach to IoT initiatives by rolling up their sleeves and aligning distinctive capabilities across their organizational design, talent, incentives, to create sustainable change. The companies that get it right have the potential to significantly impact their market capitalization by leveraging the Internet of Things to increase revenue by offering new or improving products and services and decreasing the cost of products and services.

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