The Internet of Things:
The Force Driving Down
the Cost of Business Today
Introduction

The Internet of Things (IoT) is technology that enables the connection of electronic devices to the Internet, allowing them to transmit and receive actionable information. These include computers and mobile devices like Smartphones, as well as a wide variety of traditionally unconnected devices, from temperature sensors to trackers for your fleet. IoT-enabled devices measure and share information about the environment they are in, “talking” to other machines and to people. They can also connect to other devices, receive software updates wirelessly, turn on and off remotely and use data to become smarter, all of which can help optimize processes and boost human productivity. The network of connected devices is supported by related technologies, such as networks, applications, cloud storage and data storage, all of which work together in service of IoT.

In recent years, IoT systems have gained acceptance in the marketplace due to their efficiency and cost-saving benefits. According to a 2017 survey by Forbes and Hitachi Vantara, 64% of senior executives around the world say IoT is important to their current business, and over 90% of senior executives believe IoT will be important to the future of their business.1 And the IoT has the potential for enormous growth: a predicted 20 billion devices will be connected by 2020, an increase over 8 billion in 2017.2 As companies large and small look to the future, they will find IoT to be the new standard.

From factories to health care facilities, IoT technology improves efficiency, supports smarter decision making, and reduces operational costs. It allows business decision makers to eliminate blind spots in their organizations, automate processes, enhance the customer experience and develop new revenue models for the future. All these benefits contribute to IoT’s overall cost saving and revenue generating potential. This paper examines how companies can rely on each one to drive down the cost of doing business.

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IoT is driving down the cost of doing business

• Eliminating blind spots
  Turning data into insights

• Automating business processes
  Streamlining for greater efficiency

• Enhancing the customer experience
  Delivering personalized service

• Developing new revenue models
  Innovating company-wide
Eliminating Blind Spots

In the digital age, data-driven organizations succeed. The more data gathered by a company, the more that company can translate those data into cost-saving insights. Today and in the future, the source of much of this valuable knowledge is and will be IoT. The more a business knows, the less it needs to guess.

Blind spots can be costly. IoT reduces them by gathering and transmitting important information on:

- **Manufacturing plants**
- **Supply**
- **Routing**

...and other key metrics that directly impact the bottom line.

The IoT offers real-time visibility into critical processes, often from remote locations. It enables business owners to track multiple processes at once and compare data from different locations. It allows companies to gather information from their own infrastructures, rather than from outside sources. And it helps identify cost-saving and efficiency opportunities by allowing managers to compare data from different areas of their companies and see where improvements could be made.

IoT-powered businesses also gain insight into supply and routing. Imagine a meat processing company that has paired remote temperature probes with vehicle tracking in its transportation fleet. After loading shipments of meat onto refrigerated trucks, the fleet manager can monitor the temperature of the entire supply, while simultaneously recording routing information and the total time between packing and delivery. Any deviation from the ideal packing temperature generates a real-time notification to the fleet manager, who can then alert the driver to reestablish a safe temperature and prevent contamination. The United Nations reports that food waste results in $936 billion in global losses annually.3

With IoT-enabled supply-chain technology like vehicle tracking and remote temperature monitoring, that number can be dramatically reduced.

The IoT supports timely, agile decision making in scenarios like the above. Other processes with potential blind spots than can be mitigated by the IoT include **package delivery routing**, **product warehousing**, **automated manufacturing** and **oil and gas production processes** – though there are many other areas of concern that IoT can augment as well. In each case, IoT technology makes it easier to identify problems as soon as they occur (or even before). It could even be possible to retain a shipment of food, agricultural or medical products that would have been compromised without the real-time data provided by the IoT.

IoT reduces blind spots in critical business processes:

- **Package delivery routing**
- **Product warehousing**
- **Supply chain management**
- **Automated manufacturing**
- **Oil and gas production**
Automating Processes
Even before the advent of smart technology, automation has helped businesses reduce labor costs and streamline processes. With the Internet of Things, automation has become more sophisticated, paving the way for more efficient workflows, shrinking the space for human error and continually lowering costs.

Automated processes supported by the IoT are especially useful in manufacturing, a major growth area and current leading sector in IoT adoption. Within manufacturing, the top application areas for IoT include industrial asset management, inventory and warehouse management and supply chain management. Each of these segments can benefit from a level of automation that would not be possible without IoT technology.

For instance, an industrial asset in a factory powered by the IoT can send maintenance alerts before it breaks down, allowing managers to maintain equipment without losing productivity from an out-of-order part. When machines can diagnose and send reports about themselves, business owners can budget for repairs and upgrades far in advance, rather than relying on a reactive “fix it when it breaks” model. This also lowers costs, as replacing components in a rush or crisis situation can be significantly more expensive than doing so in advance.

Enhancing the customer experience
Smart technology allows businesses to better understand customer needs and usage patterns. As IoT devices record data on when and how consumers interact with them on the back end, organizations can adapt to user needs and serve the customer base more efficiently in the future. Recognizing usage patterns allows businesses to refine customer service responses, identify needed improvements and develop more personalization for the end user.
Enhancing the customer experience (continued)

In fact, improving customer experiences is currently the top application for IoT-generated data in the enterprise. In a 2017 survey conducted by Zebra Technologies, 70% of business leaders reported that enhancing the customer experience is the biggest driver of IoT investment today. These types of applications are a natural fit for IoT. Gathering data, comparing data, recognizing patterns and optimizing processes are all part of improving customer experiences, and all are enabled or enhanced by IoT technology.

To perform intelligent analysis on customer experiences, IoT relies on other technologies as well. Within their infrastructures, business owners currently depend most on real-time analytics and cloud-based systems to support IoT deployment. In order to derive maximum value from IoT while reducing operational costs, business leaders must balance IoT integration with the expansion and maintenance of these support systems.

In the future, an IoT-powered customer service interaction around a connected device, such as a Smartphone or sensor based equipment, might look like this:

1. Automated screening triggered by customer usage patterns
2. Initial automated response phase based on IoT diagnostic
3. Focused dialogue with an employee
4. Wireless reconfiguration or upgrades for the customer
5. Final data gathering and optimization

This type of process reduces personnel costs and empowers customer service employees to have more focused, meaningful interactions with customers whose issues have already been diagnosed. It allows businesses to see and respond to customer device or software issues remotely. And it gathers knowledge that can be applied to future interactions.
Developing New Revenue Models

The IoT empowers businesses to be more nimble as they plan for the future. With it, they can test bold new approaches to production, product development and service. By making full use of emerging technology enabled by the IoT, businesses can drive innovation in their industries. They can create new approaches at every level in their organizations, using information supplied by their connected technology. And they can optimize new products and services more efficiently and with more knowledge than before.

IoT-powered businesses are prepared for the future

- Testing new approaches
- Developing new products
- Optimizing existing products and services
- Using IoT data within the organization
- Driving innovation in their industries

The competitive differentiation offered by the IoT will be immense. It will deliver cost savings, revenue and benefits to leading industrial sectors. For instance, IoT usage in manufacturing jumped 84% between 2016 and 2017, making manufacturing the top sector for this technology. Altogether, business-facing IoT solutions are projected to generate $300 billion in new revenue by 2020.

Leading sectors for IoT technology

1. Manufacturing
2. Transportation & logistics
3. Utilities

These figures suggest that business leaders who embrace IoT will be able to forecast significant earnings as a direct result of this technology. Even today, 53% of business leaders expect that data generated from their IoT solutions will increase revenue within the next year.
Conclusion

The Internet of Things is one of the fastest-growing components of the digital enterprise. As business leaders look to the future, they should recognize the present applications and future potential of IoT-powered solutions. Today and for decades to come, IoT will allow organizations to eliminate blind spots, automate processes, enhance customer experiences and develop new revenue models – all of which will reduce overall costs and improve the bottom line. As IoT becomes standard across leading industries, it will improve and deepen businesses’ relationship to valuable, revenue-driving technology.

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