

Chapter 2

The Future of Devices in Digital Businesses and Improving Productivity

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ABSTRACT

Connected devices are physical objects that can communicate with each other and other systems through the internet. They include everything from traditional computing hardware, such as a laptop or desktop, to common mobile devices, such as a smartphone or tablet, to a wide variety of physical devices and objects. The internet of things describes a network of physical objects—“things”—that are embedded with sensors, software, and other technologies to connect and exchange data with other devices and systems over the internet. Internet of things-connected devices create a world where data is exchanged between physical objects such as sensors, on-device software, and adjacent technologies with other systems and devices. The essential enabling technology is the communication between internet of things “things” that enables these exchanges.

1. INTRODUCTION

Physical things that can connect online to other systems and other connected devices are referred to as connected devices. They include anything from typical mobile devices like a smartphone or tablet to more and more actual physical objects (Caporuscio & e al., 2020). Connected devices also include traditional computing hardware like a laptop or desktop. Household appliances, heating and cooling units,

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automobiles, fitness trackers, environmental sensors, and other items are included in this expanding list. These gadgets, which frequently contain sensors, software, and processing chips, gather data and distribute it to other gadgets and systems (Cooke & Zubcsek, 2017). Remote monitoring and control are frequently used with connected devices. They use a variety of wired and wireless networks and protocols, including WiFi, NFC, 3G, and 4G networks, to connect to the internet and one another. When connected devices are properly managed, businesses may benefit greatly from better decision-making utilizing reliable and accurate data, increased cost and energy efficiency, as well as improved safety and security thanks to real-time tracking and monitoring (Goudarzi et al., 2022). Connected gadgets, for instance, present significant potential for new business models and revenue-generating opportunities as part of the IoT (Seydoux & et al., 2017).

A major movement, pattern or trend emerging in the macro environment; an emerging force likely to have a significant impact on the kinds of products and services is as a megatrend. Identifying megatrends helps an organization identify potential threats and opportunities. Because it can then take action to prepare for the potential threats. It can also make the most of the opportunities. So it is necessary to study the different aspects of connected devices as a megatrend.

2. DESIGN AND ENGINEERING OF INTERNET OF THINGS DEVICES

Is it reasonable to claim that the "Internet of Things (IoT)" has gained widespread acceptance at this point, given that practically everyone carries a connected gadget with them at all times? As new "smart" devices are created and people continue to use the internet to entertain themselves, socialize with one another, share information, keep track of things, and stay connected, there are currently about 21.5 billion internet-connected devices in use worldwide (Duraipandian & Vinothkanna, 2019). This number is expected to rise exponentially in the coming years. When a consumer buys a smart device, they anticipate that it will be simple to use and perform as advertised. Unfortunately, IoT devices are not always faultless, just like anything else. How frequently has your smartphone been unable to quickly couple with a system, hub, or application? Most likely more frequently than you would like (Chengoden et al., 2023).

Ideas for new and distinct sorts of linked devices are continuously conceived as the growing technologies that underpin the IoT continue their rapid progress. We all consider smartphones, laptops, and tablets to be "connected devices," but the IoT ecosystem encompasses far more than just items you can buy at your neighborhood Best Buy or Apple Store (Lan et al., 2019). Everything from vehicles, TVs, and

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