

## Emerging Technologies in Business

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### ABSTRACT

Emerging technologies continue to affect the way we live, work, and interact with one another. Business is affected by emerging technologies. In today's world, business operates in the era of data. With the increasingly massive amount of data generated daily by customers and the complexity of customers, businesses can no longer rely on traditional methods to thrive and maintain relevance within the fierce competition. Technology has been a major driver of change in business. Cloud computing, Internet of things, big data, artificial intelligence, and blockchain are the emerging technologies that may create winners and losers. This paper provides the emerging technologies in business, what they are, and what they offer for business.

**KEYWORDS:** *technologies, business, emerging technologies in business*

### INTRODUCTION

Modern societies are increasingly dependent on technology. Technology is everywhere. It surrounds every aspect of 21st century life. It is in the cell phones we use, the cars we drive, and even the food we eat. Technology has spanned the globe, connecting device, and people of all nations. It has become integrated into personal, professional, and social aspects of our lives. It represents a huge opportunity, but it has been largely overlooked.

New technologies continue to emerge at an unprecedented rate. Every company around the globe feels the impact of technology in business. New business technologies are meant to make it easier and simpler for one to do business. Many businesses have implemented technology to reduce business costs and improve the efficiency and effectiveness of production methods.

### WHAT ARE EMERGING TECHNOLOGIES?

Technology may be regarded as a collection of systems designed to perform some function. It can help alleviate some of the challenges facing business

today. It is affecting the way we live and act in the society, particularly in business. Emerging technology is a term generally used to describe a new technology. The term often refers to technologies that are currently developing, or that are expected to be available within the next five to ten years [1]. Any imminent, but not fully realized, technological innovations that will have some impact on the status quo.

Emerging technologies are worth investigating. They are responsible for developing new products or devices. Businesses often look to emerging technologies for new services or tools that will help them create a competitive business advantage.

### SOME EMERGING TECHNOLOGIES

Technology is one of the fastest-growing agents in the modern life. The emerging technologies have brought a significant transfer in information, technology, and development sectors. They play a unique role in the modernization of industries. The top emerging technologies include artificial intelligence, machine

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learning, robotics, Internet of things (IoT), big data, cloud computing, soft computing, business computing, 3D printing, wearables, 5G, and blockchain. We will just ten of these technologies [2-6].

**1. Artificial Intelligence:** Artificial intelligence (AI) is a field of computer science that is dedicated to developing software dealing with intelligent decisions, reasoning, and problem solving. Artificial Intelligence may be regarded as any software or hardware that depicts human intelligence and consequently has the ability to engage in a humanlike activity. AI tools can enhance decision-making abilities, allowing enterprises to perform increasingly complex tasks. They are versatile tools that enable people to rethink how we integrate information, analyze data, and use the resulting insights to improve decision making. Artificial intelligence is already part of our lives, slowly shaping our society and business. It is already widely used in business applications, including automation, customer relationship management, human risk management, underwriting, fraud detection, and talent development. Radical changes are needed with artificial intelligence (AI) to drive business growth and provide valuable insights on strategies. Artificial intelligence in business simply applies intelligent computer software with human-like capabilities to boost revenue, improve customer experience, increase productivity and efficiency, and drive business growth.

Almost all technologies in business rely somewhat on AI. Today, artificial intelligence is exploding.

**2. Robotics:** This is a technology field that uses electronic or mechanical technology to replace human labor. Robots are machines with enhanced sensing, control, and intelligence used to automate, augment, or assist human activities. They are currently used in manufacturing and production firms. They seek to expand to other business industries. Chatbots have empowered the banks and other financial institutions by simplifying the complex processes. We interact with Facebook Messenger bots all the time. Messenger bots are revolutionizing the small business world. Messenger bots can answer customers' questions, collect user's info, organize meetings, reduce overhead costs, and engage in other business tasks. Another popular use of emerging robotics in business is robot journalism or automated journalism. It lends a helping hand to journalists, content creators, and publishers. Automated journalism is also used to test headlines, source information, and identify trending stories. Figure 1 shows how robots are used in business [7].

**3. Internet of Things (IoT):** The Internet of Things (IoT) is a network of physical objects such as devices, vehicles, appliances, etc. The Internet of things (IoT) is turning our homes into smart hubs with voice supported technology. IoT devices can record and transfer data, keep an eye on key processes, improve efficiency, and eliminate the guesswork. The Internet of things is unlocking previously inaccessible sources of value for enterprises in areas such as new revenue streams, safety, and improved customer experience. The IoT market includes software, hardware, systems integration, and telecommunications services.

**4. Big Data:** The amount of data that will be created over the next three years will be more than the data created over the past 30 years. Data is growing exponentially. This exponential growth of data complicates certain aspects of IT applications. Business has always desired to derive insights from big data in order to make better, smarter, data-driven decisions. Big data refers to data that are generated at high volume, high velocity, high variety, high veracity, and high value. It has fundamentally changed the way business companies operate, make decisions, and compete. It can create value for businesses. Many companies want to extract more value from their data so they can improve products and make better business decisions. Collectively, market demands are pushing organizations to handle even more extensive data sets and to achieve even faster query and analytics responses. Organizations will need a hiring strategy for talent who can support the overall data strategy.

**5. Cloud Computing:** Whenever we use the Internet, we are using cloud services. The cloud is available 24/7. Small businesses are gradually switching their systems and data management to the cloud. Common examples are Gmail and Dropbox, which are accessible anytime, anywhere, on nearly any device. Cloud computing continues to deliver lower costs and high-performance technology engagement through on-demand software and technology solutions.

**6. Business Intelligence:** The main objective of business intelligence is to enable business managers to have easy access to data, be able to conduct analysis, allow them to convert data into useful knowledge, and then make faster, better decisions. An effective use of business intelligence will result in time savings, cost rationalization, and management efficiency. Business intelligence is increasingly becoming necessary for business leaders to visualize, analyze, and prepare their strategic planning. In recent years, several organizations have implemented business intelligence and analytics for big data

solutions. The organizations are governed by information, knowledge, intelligence, and wisdom.

### 7. Virtual Reality and Augmented Reality:

Immersive technologies include augmented and virtual reality. A virtual environment lets customers develop strong connections with a product or service. We should thank the gaming industry for the development of virtual reality headsets and augmented reality applications. The key aim of AR and VR is the customer's desire to be entertained. From improved customer experiences to staff training, the use of AR and VR is almost unlimited. Immersive technology, whether VR or AR, is disruptive and will completely change how we communicate internally with home working or externally in how we communicate to customers. Visualization technology makes data more meaningful to businesses by allowing for more profound ways of presenting data. For example, AR-enabled smart glasses help warehouse workers fulfill orders with precision. Figure 2 shows how virtual reality is used in business [8].

**8. Wearable Technology:** This is changing the way consumers access content. It has been predicted that more than 20 percent of Americans will be using a wearable in 2022. This provides a large market for solutions that work across smart watches and smartphones. The Apple Watch makes getting the latest news as easy as telling the time. From clothing to contact lenses, wearable journalism is ideal for quick updates until viewers have the time to get the full story.

**9. 5G Networks:** This new model of network speed is the newcomer coming after the 4G. 5G networks may ultimately be 100 times faster than 4G network. 5G, the next-generation cellular network, promises so much: increased mobile bandwidth and speed, which will accelerate driverless cars. Remote offices become more dependable under the 5G paradigm. 5G has ultra-connectivity enabled by high data bandwidth, low latency, and high density of devices. It will exponentially increase data storage and processing directly using edge computing.

**10. 3D Printing:** This is known as additive manufacturing. It means that whatever type of product is needed can be easily produced on an ad-hoc basis, with no need to stick to a precast design. It creates three-dimensional objects based on digital models by layering or "printing" successive layers of materials. It has the potential to turn every business and living room into a factory.

Other emerging technologies in business include drones, server less computing, quantum computing, biometrics, blockchain, and natural language processing. These emerging technologies demonstrate the advances that are radically changing every industry. Figure 3 illustrates some of these emerging technologies in business [6].

### BENEFITS

The emerging technologies have a decisive role to play in an organization's innovations, customer experience, and overall success. Their role in creating business value for insurers is vital. Today, the influence of emerging technologies is greater than ever before. They are changing how we gather and deliver content. They can help organizations scale on demand, improve resiliency, minimize infrastructure investments, deploy solutions rapidly and securely, create powerful transformations to drive revenue, outshine the competition, execute better decision making, and extract value from algorithms. They allow us to be content creators and publishers. It has never been easier to create videos, spread news via social media, and grow our own customers. As content creators, we can go beyond the usual suspects of Facebook, Twitter, and Instagram to get consumer perspectives.

### CHALLENGES

There is so many emerging technologies that it can be overwhelming dealing with them. Focusing on the technologies which will affect your business can be daunting. The inclusion of emerging technologies to improve processes requires a steep learning curve. Emerging technology can enable business goals only if properly implemented. Businesses may not be able to use technology to replace or enhance every aspect of business operations. Certain business functions require the use of human labor or intelligence. Although emerging technologies generate new opportunities, it creates new legal challenges, particularly related to copyrights, trademarks, patents, royalties, and licensing. Embracing the new technologies to step ahead of the competition is a challenge for small business owners. For most business owners, running a business, finding new customers, solving the cash flow conundrum, and juggling time demands are regular challenges. Navigating these technological shifts is challenging for business leaders. There are concerns about the cost of investing in new technologies.

### CONCLUSION

Emerging technologies hold the answers to fundamental challenges and ambitious objectives of organizations. They can help organizations scale on demand, improve resiliency, minimize infrastructure



investments, and deploy solutions rapidly and securely. They can give companies unprecedented capabilities and competitive advantage. They will define our professional lives too. However, with the torrent of technology breakthroughs, it is difficult to make sense of individual technologies.

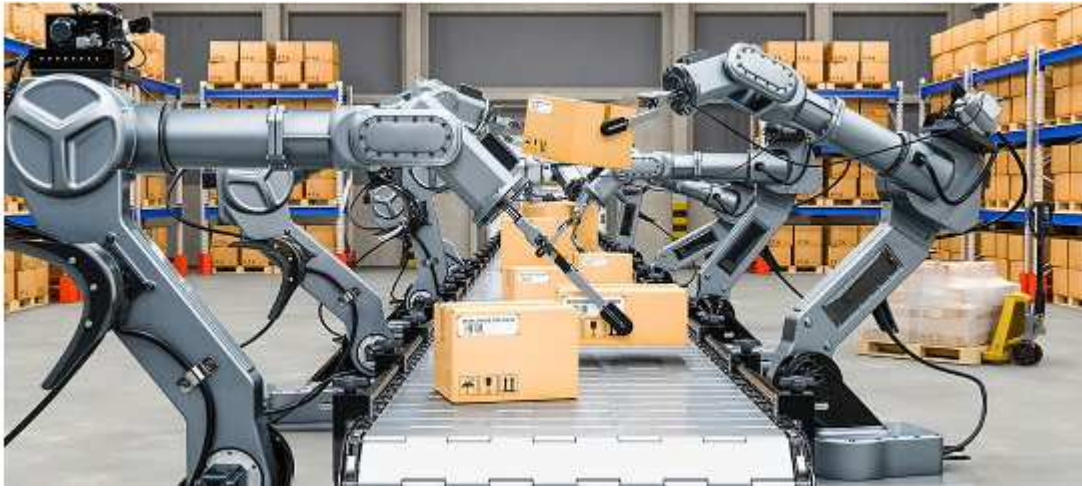
Companies should strive to stay up to date by investing in emerging technologies right now. We should bear in mind that different technologies will impact different sectors.

Companies, small, medium or large, must embrace emerging technologies. Emerging technology strategy needs to be a core part of every company's corporate strategy. Corporate leaders should be prepared for technological upheavals in the years ahead. In order to succeed at integrating technology across different functions, business leaders must help employees manage the required changes. For more information about emerging technologies in business, one should consult the books in [9-15] and the following related journal devoted:

*Journal of Technology Management & Innovation*

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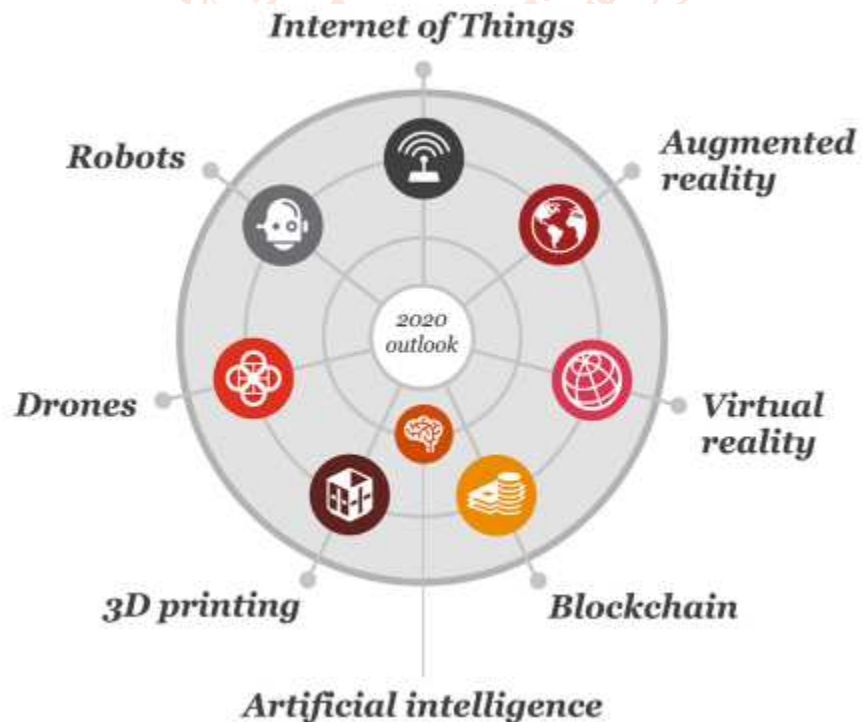
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**Figure 1 Robots are used in business [7].**



**Figure 2 How virtual reality is used in business [8].**



**Figure 3 Some of the emerging technologies in business [6]**