



A Review on the Emerging Technologies for Business Innovation and Sustainability in Digital World

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Abstract

The world has witnessed the power of Technology since the last two decades. It has revolutionized the ways of doing any business. It is the technology through which the businesses could sustain in the volatility uncertainty complexity and ambiguity (VUCA) world. The businesses have to adopt high-end technology to stay competitive and innovative by creating a sense of difference and providing value added services from time to time. The emerging technologies have proved their contribution through optimum utilization of resources, automation, outsourcing, quality control, integration, saving time, money and labour for various stakeholders of the organization. The various International organizations such as IBM, Harvard Business Review, Gartner, KPMG and others have indicated that the year 2022 will be dominated by emerging technologies such as Artificial intelligence, Internet of Things (IoT), 5G Technology, Quantum computing, Social commerce etc. The present study identifies their role for business innovation in bridging the existing demand supply gap in the Indian market place in 2022. In addition, they are analyzed from sustainable development of people, planet and profits in the long term. The impact of these technologies can be studied from an organizational effectiveness perspective.

Keywords: Technology, Innovation, Business Growth, Social Commerce. Sustainable Development



1. Introduction:

The world has witnessed the power of Technology since the last two decades. It has revolutionized the ways of doing any business. It is the technology through which the businesses could sustain in the volatility uncertainty complexity and ambiguity (VUCA) world (Bjorkdahl, 2020). The businesses have to adopt high-end technology to stay competitive and innovative by creating a sense of difference and providing value added services from time to time. The emerging technologies have proved their contribution through optimum utilization of resources, automation, outsourcing, quality control, integration, saving time, money and labour for various stakeholders of the organization (Benjamin & Potts, 2018). The various International organizations such as IBM, Harvard Business Review, Gartner, KPMG and others have indicated that the year 2022 will be dominated by emerging technologies such as Artificial intelligence, Internet of Things (IoT), 5G Technology, Quantum computing, Social commerce etc. The present study identifies their role for business innovation in bridging the existing demand supply gap in the Indian market place in 2022. In addition, they are analyzed from sustainable development of people, planet and profits in the long term. The impact of these technologies can be studied from an organizational effectiveness perspective (Hai, Van & Thi Tuyet, 2021).

2. Background of Study

It is observed that there is a close relationship between the high-end technology adoption and sustainable business growth. It is because technology enable the users to think out-of-the-box and overcome the various challenges. The role of technology in business caused a tremendous growth in trade and commerce. Business concepts and models were revolutionized as a result of the introduction of technology. This is because technology gave a new and better approach on how to go about with business. It provided a faster, more convenient, and more efficient way of performing business transactions. With the automated processes that technology can provide, productivity reaches a higher level. This is due to the minimal resources consumed in processing business activities, allowing room for better products produced and faster services delivered to more clients and customers. The various technologies contribute in marketing, branding, promotion, production, processing, quality control, communication, logistics and supply chain



areas. Depending on the sector, budget of firm, company philosophy, nature of business etc. the various technologies can be used. The present study considers Artificial Intelligence (AI), Machine Learning (ML) and Internet of Things (IoT) are the latest technology for business innovation.

3. Scope and Significance of Study

Technology, specifically the interrelationships of Artificial intelligence (AI), big data, and the Internet of things (IoT), is accelerating its ability to help businesses do more with less and provide better results. Businesses can use technology to decrease time from product idea to product creation and product creation to customer delivery, while using fewer workers. Costs can be cut as automation and robots replace humans who need wages and benefits (Mas-Tur, Kraus, Brandtner, Ewert, Kürsten, 2020). Although this will create more products and services at lower prices, it may also decrease the number of consumers for those products and services. There has been significant research in those jobs and activities that can be automated now and in the near future. With jobs disappearing, a new economy is growing that turns employees into contract workers who work from gig to gig in solitude.

The recent developments in frontier technologies, including artificial intelligence, robotics and biotechnology, have shown tremendous potential for sustainable development. Yet, they also risk increasing inequalities by exacerbating and creating new digital divides between the technology haves and have-nots. The COVID-19 pandemic has further exposed this dichotomy. Technology has been a critical tool for addressing the spread of the disease, but not everyone has equal access to the benefits (Hinings, Gegenhuber, Greenwood, 2018).

4. Objectives of Study:

The present study has the following objectives:

- To examine the present scenario of business world in 2022
- To identify the emerging tools, trends and technologies for business innovation
- To analyze the influence of the emerging technologies on the corporate firms



5. Problem Statement

The world economy has witnessed a series of challenges since last three years. The COVID-19 pandemic outbreak, global market dynamics, rising inflation, shortage of labour, hyper competition, shrinking profit margins, lack of innovation, changing customer expectations are some of the challenges. Naturally, the present study seeks the answers to the question: How emerging technologies can help in business innovation and sustainable growth?

6. Review of Literature

Innovation is defined as an organization's overall capability to introduce new products to the market through a combination of strategic orientation and innovative behavior. However, innovation is a consequence of innovation. Therefore, it can be defined as the generation and implementation of new ideas, processes, products/services, and successful implementation of creative ideas. It is also known that highly innovative firms can develop creative solutions that undermine those of their competitors (López-Rubio, Roig-Tierno & Mas-Verdú, 2021).

United Nation (2021) published an exclusive report pertaining the scope and application of technology to catch the digital waves emphasizing the innovation with equality. It is observed that the world is reaching the end of the deployment phase of the "Age of ICT" and starting the installation phase of a new paradigm, involving frontier technologies and sometimes called 'Industry 4.0.' The deployment of ICT resulted in an enormous concentration of wealth in the ownership of the major digital platforms. How will Industry 4.0 affect inequalities between countries? Much will depend on whether countries are catching up, forging ahead, or falling behind – which in turn will depend on their national policies and on their involvement in international trade.

Like customers are the king of the market, emerging technologies are the tools for strategic management (Schilling, 2005). Knowledge derived from employees, customers, suppliers, and other business agents may result in process innovations that increase output and reduce variations. Moreover, a higher level of relational capital, better planning, problem-solving, and



troubleshooting most likely increase production and service delivery efficiencies and reduce organizational costs.

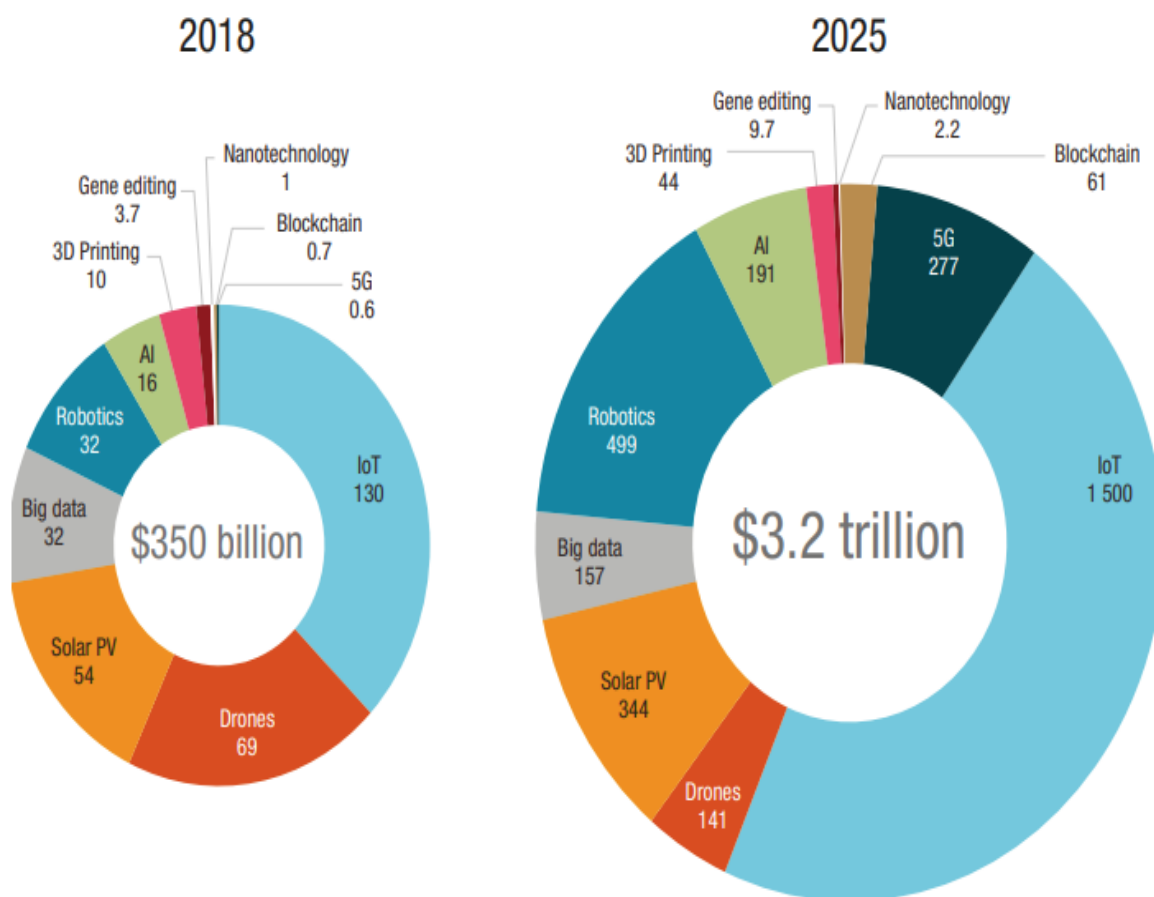
The various government and international studies have indicated the growing potential of use of emerging technologies in the business world. However, loss of jobs, limited funding, rising number of players, hyper competition, e-waste, lack of technical expertise, digital infrastructure, COVID-19 restrictions, government reforms and shrinking profits have found to be the major challenges. In other words, there would be a talent war between man and machine. All the firms including the micro, small, medium enterprises to big corporations cannot afford to miss this new wave of technological change. The success in the twenty-first century will require a balanced approach – building a robust industrial base and promoting frontier technologies that can help deliver the 2030 Agenda and its global vision of people-centred, inclusive, and sustainable societies.

Singh and Hess (2017) examined that the new technologies are revolutionizing the world of work, how organizations function, change and evolve and the nature of leadership, managerial roles and professional careers. They have become integral elements of business, industry and commerce throughout the world, driving the growth of the two most powerful forces in the global economy—cyberspace and computing power. However, while these are creating formidable new challenges for all organizations, they are merely the gentle precursors to even more powerful and radical technologies (cyber, nano, bio, molecular and quantum) whose potential impact few business leaders or academics truly understand

7. Discussion and Analysis

After the unexpected entry of COVID-19 global pandemic, the most of the firms in the world have opted for going digital wherein technologies were preferred. However, the finance and manufacturing sectors were early adopters of AI, IoT, big data and Blockchain. Finance companies have used these technologies, for example, for credit decisions, risk management, fraud prevention, trading, personalized banking and process automation. The manufacturing

sector has used these technologies for predictive maintenance, quality control and human-robot combined working activities. The field of education also sought the help from emerging technologies wherein student networking from distant places, e-learning, data generation, reports, evaluation could take place (Bjorkdahl, 2020). The developing, developed countries could make the most of it during this stage.



Source: UNCTAD based on data estimates from Froese (2018), MarketsandMarkets (2018), Sawant and Kakade (2018), Business Wire (2019), Chaudhary et al. (2019), GlobeNewswire (2019), MarketsandMarkets (2019), MarketWatch (2019a), MarketWatch (2019b), Raza (2019), Tewari and Baul (2019), Wagner (2019), Mordor Intelligence (2020).

Figure 1: The Emerging Technologies- Market Size

The term ‘frontier technologies’ has gained the momentum in the present digital era. The above figure 1 indicates how the emerging technology trend is becoming popular year on year basis. Internet of Things is likely to expand from \$130 Billion in 2018 and estimated to reach \$1500

Billion in 2025. The robotics, artificial intelligence and 5G would become detrimental to compete and sustain in the business world for the firm. In addition, drone technology would play a crucial role in logistics, supply chain management influencing the overall production, quality control and delivery of products to the customers.

In order to optimize the organizational performance, the top management need to integrate the business, technology and innovation strategies together in a systematic and scientific manner(Goffin& Mitchel, 2010). The top-down and bottom-up approaches can be applied in this regard. The below figure shows the close relationship and influence of these strategies on each other.

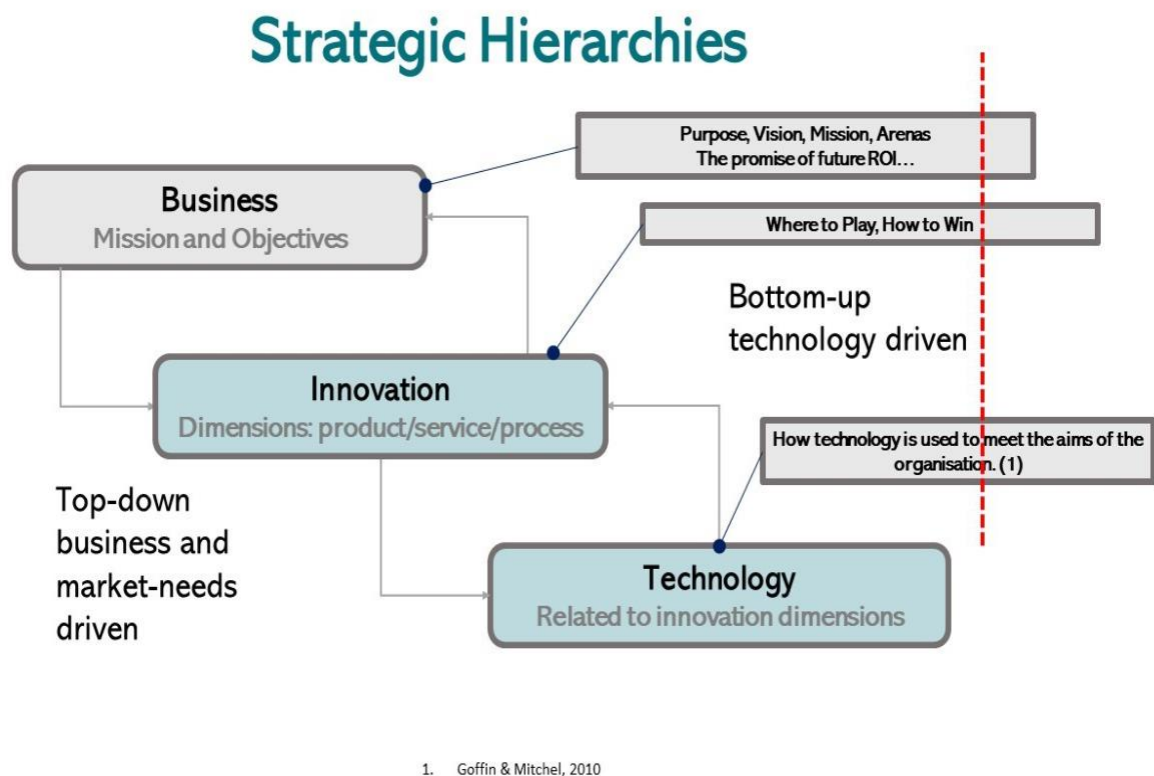


Figure 2: Role of Business, Innovation, Technology in Strategic Management

A technology and innovation strategy that is well-aligned to corporate and product goals gives leaders the ability to make sharper, more informed decisions and to better account for crucial



investment choices. There should be the right balance and weightage given to these three elements in strategic planning and business policies of the firms for sustainable growth.

8. Findings of Study:

- Innovations are the source of new value that a customer or user will appreciate and are usually products, services, processes or some other value-adding solution.
- Technologies are the enablers; the science, engineering, capabilities, know-how that allow the innovation to work and deliver its value.
- The emerging technologies used for business innovation are: artificial intelligence, internet of things, robotics, big data and 5G network.
- Technology enables the users to convert the innovative ideas into concrete reality.
- The emerging technologies lead to automation, database management, transparency, accountability and cost-effectiveness.

9. Conclusion:

All of the above discussion shows that technology has a pivotal role in the survival and growth of any organization. It is sensitized even more in the context of COVID-19 wherein volatile, uncertain market conditions are experienced. The emerging technologies such as AI, ML, IoT, 5G can contribute in minimizing the challenges and maximizing the opportunities. They serve as an invisible hand. However, it requires budget, expertise, vision and creative pool of talent. The employees and employer together can create future prospects through innovative technologies for the organization.

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