

Technology for Better Business in Society

Sachin Kumar^{1&2}, Krishna Prasad K.³ & P. S. Aithal⁴

¹ Dept. of Computer Engineering, Indira College of Engg. & Mgmt., Pune, Maharashtra, India,

ORCID-ID: 0000-0002-1136-8009; E-mail: sachinks.78@gmail.com

² Post-Doctoral Research Fellow, College of Computer Science and Information Science, Srinivas University, Mangalore, India,

³ College of Computer & Information Science, Srinivas University, Mangalore, India, ORCID-ID: 0000-0001-5282-9038; E-mail: karanikrishna@gmail.com

⁴ College of Business Management & Commerce, Srinivas University, Mangalore, India, OrcidID: 0000-0002-4691-8736; E-mail: psaithal@gmail.com

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² Post-Doctoral Research Fellow, College of Computer Science and Information Science, Srinivas University, Mangalore, India,

³ College of Computer & Information Science, Srinivas University, Mangalore, India,

ORCID-ID: 0000-0001-5282-9038; E-mail: karanikrishna@gmail.com

⁴ College of Business Management & Commerce, Srinivas University, Mangalore, India,

OrcidID: 0000-0002-4691-8736; E-mail: psaithal@gmail.com

ABSTRACT

Purpose: *Technology, in particular the interactions of Artificial intelligence (AI), big data, and the Internet of things (IoT), is accelerating its capacity to assist organisations in producing better results with less resources. The time it takes for a company to create a product and deliver it to a client can be sped up utilising technology while employing fewer humans. This section discusses concerns with needs-based, want-based, societal, and phantasmagorical desires. There is a bright future for technology to improve commerce in society. Here, difficulties faced by people are explored, and potential future developments are also looked at. Diverse technology generations as well as different business models and tactics have been addressed, as well as the impact of technology on society. Business and ICCT technology have been discussed, including the debate on nanotechnology and the technology adoption model.*

Design/Methodology/Approach: *Data have been taken independently and from research papers and primary and secondary sources.*

Findings/Result: *This is a paper for technology over business model for doing Better Business in Society.*

Originality/Value: *This paper provides an introductory discussion on the use of ICCT and Nanotechnology as general-purpose technology for Better Business in Society. A generic architecture is also available, which looks at Technology for Better Business in Society research proposals and is helpful for technical.*

Paper Type: *Exploratory research.*

Keywords: *Business Analytics (BA), ICCT underlying technologies, Industry Performance, Data Science, Big Data Analytics, Research gap in Business Analytics, ABCD Listing, Technology in business*

1. INTRODUCTION :

The culture of India has evolved and altered in numerous ways. As a result, a composite society has developed, one that must handle diverse socio-cultural issues as well as worries about people's security, especially those who are most at risk, such women, children, and the elderly. The potential of scholars to create order out of chaos, unite diverse groups for the benefit of all, and rekindle harmony among those with divergent opinions has been proved for millennia. Indian culture is a testament to the resilience that Indian society possesses and may rely on in the event of future catastrophes.

Business needs technology more and more these days. It becomes increasingly difficult to distinguish between the two as the economic world moves more and more in its favour. Since technology creates the conditions for innovation to flourish, it follows that for a company to remain viable, it must have access to technology. Since the dawn of human history, business has always existed. Even if it just started with the primitive barter system, business would not be the same without technological improvements. If technology were taken away from business, the bulk of company processes and transactions would entail the usage of technology in some way, causing all the main industries to

collapse catastrophically. Trade and commerce have increased dramatically as a result of the usage of technology in business. The advent of technology led to a revolution in business thoughts and models. This is due to the new and improved methods of conducting business made possible by technology. It offered an easier, more convenient, and quicker way to conduct business.

Accounting systems, management information systems, point-of-sale systems, and other easier or more difficult instruments are a few examples of technological acts in the business. Technology has even produced the calculator. It is truly inconceivable to consider going back to a time when everything was done manually because doing so would essentially require starting over from scratch. Technology is improving its capacity to enable companies to provide better results with less resources. Big data, the Internet of Things (IoT), and artificial intelligence (AI) combine to produce programmes that organisations may utilise to shorten the time between product idea and delivery to customers.

When this technology is appropriately integrated into routine company operations, it may enhance sales, expand the client base, and regulate operations more effectively. Selected evaluations of the literature on employee engagement were included in the approach for this study, employee engagement is discovered to be ongoing. If this don't, the rising dissatisfaction with a business's narrow perspective on its role in society may thwart a revolutionary technology or block a fresh, unorthodox rival. Information technology is having profound effects on a variety of social spheres, and it is influencing every step of the value chain of an electronic firm. A superior business model frequently outperforms a better technology, according to the additional explanation "the business model, not simply the technology". Critics assert that blockchain technology may wind up constraining rather than relieving society of expensive third parties and giving people more control over their private information. It suggests a larger definition of business and technology that also takes into account society. The three key components future of industries are business, society, and digital technology. They are the designers who have been given the mandate to create a better business. What might a better business look like? And how would one go about creating a better business? The Technology Acceptance Model serves as the research's theoretical foundation (TAM). TAM outlines the causal connections between perceived usefulness and perceived usability. The principles society held and lived by back in the industrial age still guide society now, despite the fact that technology has advanced faster than we can evaluate it [1-15].

2. OBJECTIVES OF THE PAPER :

- (1) To know the challenges and development for a human being in society on different parameters.
- (2) To develop the technology and its impact on society.
- (3) To analyse the ideal technology concept and characteristics in society.
- (4) To know the application of technology in the betterment of society.
- (5) To understand the concept of business for a sustainable society.
- (6) To develop the concept of ICCT underlying technologies and Nanotechnology.
- (7) To understand the concept of technology based on innovations in business in society.
- (8) To know about technology acceptance models in society for better business.
- (9) To understand about technology supported anticipated future breakthroughs.

3. CHALLENGES FOR HUMAN BEING IN SOCIETY :

3.1 Basic/Need based problems:

Traditional "necessities" lists include food (including water), clothes, and shelter. Numerous contemporary lists place a strong emphasis on meeting one's "basic requirements," which include not just food, water, clothes, and shelter but also sanitation, education, and healthcare.

(1) *Pure drinking water:*

Potable water is water that is suitable for use as drinking water, whereas drinking water is water used for food preparation. Various factors, including physical activity level, age, health problems, and environmental factors, influence the amount of drinking water needed to sustain optimum health.

(2) *Nutritious food:*

Nutritious food is essential for every living being. Nutrient-dense foods include lean meats, seafood, whole grains, dairy products, legumes, nuts, and seeds. Oats that have been rolled or steel-cut, pasta made from whole wheat, tortillas made with whole wheat, crackers, bread, and rolls made from whole grains (such as rye or wheat), Brown or wild rice, Barley, quinoa, buckwheat, whole maize, and cracked

wheat. It is the responsibility of civilian society to ensure that every human being gets essential nutritious food.

(3) Renewable Energy:

The energy is derived from resources that can be regenerated naturally over time and are thus considered to be renewable. It includes energy sources including sunshine, wind, water currents, and geothermal heat. Despite the fact that the majority of renewable energy sources are sustainable, some are not. Civilian society can progress only if it generates green energy for its entire requirement.

(4) Shelter for everyone:

It promotes health and disease prevention as well as security, personal safety, and weather protection. People may live with dignity and the chance to conduct regular lives when they have access to adequate housing. To increase resilience and reduce vulnerability, shelter is crucial.

3.2 Advanced/ Want based problems:

(1) Transportation:

The transportation problem is a special kind of linear programming problem where the goal is to reduce the cost of transporting a given good from a number of sources or origins (such as a factory or manufacturing facility) to a number of destinations (e.g. warehouse, store).

(2) Personal Problem:

Personal problems that impact a specific person might be categorized as personal concerns in practice. Family, finances, addiction, handicap, or health are just a few examples of typical personal concerns.

(3) Family crisis Problem:

Family issues, such as an inquiry into child abuse, domestic violence, an unwanted pregnancy, the abandonment of one or both parents, a family member who is chronically ill, and a lack of social support, can lead to stress and crises.

3.3 Social Problems:

Most sectors are now using data and analytics to complete previously believed unfeasible tasks due to the magnitude, discrepancy, and unequal distribution of information. It has become an integral aspect of most firms' overall operations [16-20].

(1) Child labor:

The government has taken a lot of initiatives to stop child labor, but it continues in some parts of India. In our country, about 10 million youngsters work in labor-intensive areas. Poverty and a failing educational system force the youngster into child labor. In many situations, parents also compel their children to work to support their families financially. It's also a child's only means of survival if they are homeless or abandoned.

(2) Malnutrition:

India has dropped to 99th out of 119 nations in the Global Hunger Index (GHI) 2022, falling behind Pakistan, Bangladesh, and Nepal. In India, more than 33 lakh children are malnourished, with Maharashtra, Bihar, and Gujarat accounting for more than half of the severely malnourished. Stunting and wasting affect more than a third of infants under five, while anemia affects 40% of children aged one to four.

(3) Illiteracy:

Indian Languages Being Ignored: In many circumstances, regular education is not available in Indian languages. Students from impoverished, rural, and tribal backgrounds will gain confidence from the new Education Policy's emphasis on the mother language as the teaching medium. Financial constraints: Children are entitled to free education until they reach the age of fourteen, after which they are no longer covered by the Right to Education Act (RTE).

(4) Gender bias against girl child:

The fall in fertility in India has exacerbated a historically high preference for boys over daughters, increasing the female-male sex ratio at birth.

(5) Child Abuse:

There are many examples of child abuse like injury, sexual abuse, sexual exploitation, negligent care, or mistreatment of a child. Child abuse is reported in cities and rural areas, in wealthy and poor homes, and on the streets and schools.

(6) Child trafficking:

It is a crime where girls and boys are exploited for various reasons, including forced labor and sex. It has a history of being linked to illicit activities and corruption. Children are frequently victims of human trafficking for commercial sexual exploitation or delivery, such as domestic service, industrial work, agricultural work, or mining.

(7) Juvenile Delinquency:

The offenses committed by juveniles are referred to as juvenile delinquency. According to experts, teenagers commit crimes without being aware of the consequences of their activities. They know very little about the world and are unaware of the results of their actions.

(8) Unemployment:

Unemployment is enormous, and the informal economy is a wreck. The worldwide slump of the previous two or three years, exacerbated by the epidemic, has compounded the unemployment situation. In India, the gig economy is still in its early stages but developing steadily. Because the gig economy has yet to be defined as a way of life, these employees are not protected by health, ESI, PF, or any other program.

(9) Secularism:

Secularism is the result of the state's interaction with religion. As the cradle of various faiths, India guarantees that all religions have equal societal involvement and acknowledgment. In promoting confidence and preserving religious institutions, the state must remain impartial. Secularism also emphasizes the importance of minorities' religions.

(10) Poverty:

Poverty takes many forms. Poverty is a situation or circumstance in which a person does not have enough money to live. India is ranked 66th out of 109 nations in the Global MPI 2021 report. Health, education, and level of life are all equally weighted.

(11) Digital Divide:

For quite some time, the digital divide has been an issue. During the pre- and post-pandemic stages, the digital gap has been a significant concern.

(12) Pollution:

Environmental pollution, which is causing catastrophic and irreversible damage to India's society, is one of the country's most pressing issues. In megacities, corruption has become a significant issue. Rapid urbanization has also contributed to increased resource demand, resulting in environmental deterioration.

(13) Corruption:

In other words, corruption causes increased discontent and misery among the populace, which makes them more likely to tolerate (or even demand) harsh and illiberal methods. It also raises inequality and reduces democratic responsiveness.

3.4 Dreamy desire-based problem:

Relationships, sex, job, and health are some of the emotional concerns we have throughout the day that are reflected in our dreams. Sometimes, symbolism for things from the real world appears in dreams. This idea concurs with Freud's assertion that objectives include symbols but no "latent" (unconscious) meaning.

(1) Flying like a bird:

Flying like a bird in dreams denotes a free spirit, optimism, and a fresh start. It may be delighted and elated because of some new prospects that are heading the way. It also denotes inborn power and resilience. They are now infinite since they have eliminated every negativity from life.

(2) Inter-planet travel:

It is the simplest way to move a spacecraft between planets. In a nutshell, a spacecraft is placed into an asymmetric orbit around the Sun.

(3) Life span expansion of Human Beings:

Since this is the simplest route to move in as the life span expands of any human being's life on the earth.

(4) Artificial food:

Generally speaking, when an ingredient or dish is referred to as "artificial," it is referring to a creation made to mimic something natural. A synthetic raspberry flavour, for instance, was created by culinary

experts to replicate the flavour of genuine raspberries. It is produced using materials that have been chemically transformed into edible items. Proteins, carbs, lipids, vitamins, trace elements, cells, and even air are used in laboratories by scientists to manufacture food.

4. DEVELOPMENT OF SOCIETY :

Investing in early learning initiatives can help our people achieve tremendous success. Assuring that children get off to a good start in school will go a long way toward securing their future success. Low-cost, high-quality child care is also necessary for civilization to flourish. When parents believe their children are well-cared for, they can be more productive at work. Employers who have vital employees are more likely to thrive in business. When businesses succeed, so does a community's economic position. Long-term economic benefits may result from today's investment in high-quality childcare services.

Furthermore, a safe and affordable location is essential for people's self-sufficiency. It serves as the family's heart, offering a secure place to raise children, create social relationships, and care for elderly parents. It is impossible to contribute to society without a pleasant living environment. It can help people out of poverty by investing in them. To improve our most valuable resource: our people, it must look outside the government for solutions [21].

5. TECHNOLOGY AND ITS IMPACT ON SOCIETY :

Though technology is transforming our world, it is neither good nor harmful in and of itself. It has an impact on people's lives and alters how they learn, think, and communicate. It has a significant impact on society, and today it is difficult to picture living without it. Technology and society are intertwined, interdependent, and mutually influential. Technology has an impact on society, with the capacity to either advance or regress in both positive and negative ways. Technology has an impact on our culture that can be both positive and negative. Since technological systems like cell phones, computers, TVs, etc. are created by humans and reflect the very core of a population's desires and lifestyle, human societies and technology have become intricately interwoven. Technology does enhance human lifestyles, but it also poses serious problems for coming generations. People use technology excessively these days, which results in a decrease in physical activity, which has a negative impact on health. Furthermore, a great deal of cybercrimes occur every day as a result of the excessive use of technology. These crimes involve the theft of a victim's identity or personal information, such as their Unique ID number, PAN number, debit card, etc., and the unauthorised use of that information to commit a crime or commit fraud.

5.1 Generations of Technology:

There have been several technological generations throughout history as a result of human ingenuity beginning around 4,000 BC. The first time the twelve technological generations up to the twenty-first century are mentioned, their qualities and matching traits are taken into account. The tools and weapons that make up the first generation of technology, known as mechanized technology, were constructed from several metals that were created between 4,000 and 2,800 BC, including bronze and copper. The Knowledge age is another name for the first generation of technology, which also involves printing information by creating letters. The steam engine technology from the second generation is also what gave rise to the industrial period in the 18th century. The third generation of technology, known as electrical technology, was widely adopted in the 19th century and concerned the production and use of power. In the 20th century, long-distance commuting and transportation problems were solved by the fourth generation of technology, known as the car. In the 20th century, the fifth generation of technology—airplane and space technology—became practical for both domestic and international travel and transportation. The telephone technology utilized for long-distance communication in the 20th century is referred to as sixth-generation technology. In the latter half of the 20th century, video communication was conducted on a global scale using television technology, which is part of the seventh generation. In the latter half of the 20th century, the average person started to employ the eighth generation of technology known as computers for data processing. In the final quarter of the 20th century, the interconnection of several networks and organizations for e-business led to the rise of internet technology, which is regarded as ninth-generation technology and is now widely used for online information exchange and access. The focus of the tenth generation of technology, dubbed Mobile

Communication & Biotechnology, is on gene therapy, bio-engineering, and ubiquitous communication, all of which were created in the latter half of the 20th century. The eleventh and twelfth-generation technologies, which are a part of the Information Communication and Computation (ICCT) (21st century) underlying Technologies, are focused on total automation [2], ubiquitous computing & communication [3], and optimal solutions for wholesome food, clean drinking water, renewable energy, and nanomedicine & therapy [23–25].

- (1) First Generation contains Mechanization Technology and has different characteristics like Tools, Weapons, & Printing. It was born in 4,000-2,800 BC and it is known as the knowledge Era.
- (2) Second Generation contains Steam Engine Technology and have characterized as Industrial Revolution in the 18th Century and it is known as the Industrial era.
- (3) Third Generation is Electricity Technology and contains Power generation & Usage and was born in the 19th Century.
- (4) Fourth Generation is Automobile Technology which has Long distance commuting & Transportation and was developed in the 20th Century.
- (5) Fifth Generation is Airplane & Space Technology and has International Travel & Transportation which was developed in the 20th Century.
- (6) Sixth Generation is Telephone Technology and Distance communication also was born in the 20th Century.
- (7) Seventh Generation contains Television Technology and Video communication and was born in the 20th Century.
- (8) Eight Generation contains Computer Technology and Data Processing and was born in the 20th Century.
- (9) Ninth Generation contains Internet Technology and have Data & Information Communication, E-business, and was born in the 20th Century.
- (10) Tenth Generation contains Mobile Communication & Biotechnology and has the features like Ubiquitous communication & Bioengineering, Gene Therapy and born in the 20th Century.
- (11) Eleventh Generation contains Information Communication & Computation (ICCT) underlying Technologies and characteristics like Ubiquitous computing & Communication, and Total Automation and was born in the 21st Century.
- (12) Twelfth Generation contains Nanotechnology and features Solutions to nutritious food, drinking water, renewable energy, Nanomedicine & Therapy was born in the 21st Century [13-23].

5.2 General Purpose technologies (GPT):

GPT refers to a new manufacturing or creative method that is significant enough to have a long-term influence on society. Until the twentieth century, the two most essential GPTs were probably electricity and information technology (IT). A GPT might be a firm, a product, a process, or a piece of technology. Several "General Purpose Technologies," such as engines, motors, etc., appear to have spurred periods of technological discovery and progress. GPTs are distinguished by their widespread use across various sectors, inherent technical advancement potential, and novel complementarities across multiple applications, all of which contribute to increasing operational scale.

However, it argues that in the absence of military acquisition, commercial technology advancement in sectors like aircraft, computers, and the Internet would have progressed more slowly. Nuclear power is an example of a GPT that would not have developed without military and defense-related purchases.

- (1) GPT is a single, well-known generic technology.
- (2) While GPT initially has a lot of room for improvement, it eventually becomes widely used across the economy.
- (3) GPT can be utilized to resolve problems or provide comfort.
- (4) To widen its base across various businesses, GPT produces many spillover effects.

General-purpose technology can transform the global economy by increasing productivity in all businesses and industry sectors. These changes are far more than a discovery or a simple technological improvement. On the other hand, such technologies typically need a complete redesign of infrastructure, business strategies, and cultural norms.

5.3 Technology in Industries:

In society, a group of businesses that predominantly engage in linked business activities is referred to as an industry. An industry is made up of all organizations that participate in profitable activities like the production of goods and services or producing them. The industrial and service sectors are home to a number of enterprises, all of which employ the proper technology. Industries are categorized into distinct generations, such as industry 1.0, industry 2.0, industry 3.0, etc., depending on the sort of general-purpose technology utilized. For mechanical activities, Industry 1.0 relied on water- and steam-based power systems. For the creation of items with mass production features, Industry 2.0 utilized electricity and assembly lines. Production processes were automated in Industry 3.0 using computer and communication technologies. Industry 4.0 uses the internet of things (IoT) and 3D printing technologies to mass-customize production processes, and Industry 5.0 is anticipated to use underlying ICCT technologies, such as artificial intelligence, virtual reality, and nanotechnology for mass automation and 3D production using Nanotechnology and ICCT controlled Super Intelligent Machine systems.

(1) Industry 1.0 contains Mechanization – Energy-based and technology used Water & Steam Power Systems.

(2) Industry 2.0 contains Mass Production – Knowledge-based technology used in Electricity and assembly lines.

(3) Industry 3.0 contains Automation Processes – Skill-based and technology used Computer and Communication technology.

(4) Industry 4.0 contains Mass Customization – Experience-based and technology-used Internet of Things (IoT) and 3D printing.

(5) Industry 5.0 contains Mass Automation and 3D production using Nanotechnology and ICCT controlled Super Intelligent Machine systems – Intelligence based and technology used ICCT underlying technologies including Artificial intelligence & Virtual reality and Nanotechnology [24-25].

6. IDEAL TECHNOLOGY CONCEPT & CHARACTERISTICS :

There are several ways in which technology has impacted society and its surroundings. Technology has aided the creation of a leisure class in many countries while also assisting in the development of more developed economies (particularly the modern global economy). To enhance the functionality and quality of such realistic systems or devices, the concepts of an ideal engine, switch, and semiconductor devices such as ideal diodes and transistors have been created and used as benchmarks. It has been discovered that researchers have consistently enhanced the traits and qualities of real-world gadgets and systems to enhance their performances. Therefore, a device's or system's ideal qualities may be utilized to update or improve them so that they attain 100% efficiency. One can determine the potential alterations to a practical device or system to achieve the goal of creating such an ideal device by comparing the properties/characteristics of the two with their ideal equivalent. Through the development of a model and the identification of key traits, we have produced the idea of ideal technology in this work. Four categories—input conditions, output conditions, system conditions, and ambient conditions/social expectations—are used to classify these qualities. These qualities are further examined, debated, and contrasted with current technology. It is clear from the debate that nanotechnology discoveries and advancements can help us achieve many of the qualities of the perfect technology [27-28].

The development of increasingly developed economies, particularly the current global economy, has been aided by technology, which has had a wide range of effects on society and its surroundings. Many of the technologies that science has given to society—such as those in the fields of aircraft, automobiles, biotechnology, computers, telecommunications, the internet, renewable energy, atomic and nuclear physics, nanotechnology, space exploration, etc.—have altered people's way of life and improved their level of comfort. They must be concerned about the sustainability of the surrounding environment in order to maintain this level of comfort for the population. In this essay, we make a suggestion on how to make technologies more environmentally friendly by including green components, preventing environmental deterioration, and transforming them into green technologies to preserve a healthy environment for future generations. The study also analyses the advantages and disadvantages of green technology in the 21st century in relation to agriculture, drinkable water, renewable energy, buildings, airplanes, and space exploration [28-29].

It discusses opportunities and challenges for green technology in the twenty-first century, the concept of the ideal water purifier system to produce potable water and its opportunities for realization using nanotechnology, and nanotechnology innovations and business environments for the automotive sector and the renewable energy sector.

Technology has had a variety of consequences on society and the environment. In many civilizations, technology has fostered the development of more sophisticated economies and the expansion of the leisure class. Ideal engines, switches, and semiconductor devices, including ideal diodes, transistors, and others, have been created and utilized as standards to improve the quality and performance of real-world devices and systems. Researchers have realized that they may improve their performance by constantly improving the characteristics/properties of genuine devices/systems. Consequently, the outstanding features are used to update or improve its properties to reach 100% efficiency. It is possible to discover what adjustments could be made to a practical device/system to meet the aim of an ideal device by comparing its properties/characteristics to those of its perfect equivalent. In this work, we developed a model and identified its important attributes to investigate the concept of Ideal technology. The four categories in which these qualities are categorized are input conditions, output conditions, system conditions, and ambient circumstances/social expectations. These characteristics are investigated more deeply, explored, and compared to contemporary technologies. According to the discussion, nanotechnology discoveries and improvements might help accomplish many attributes of perfect technology [30-31, 55].

Many technological processes result in unwelcome by-products that harm the environment and deplete natural resources. New technical implementations influence a society's culture and values, as well as the potential to create new ethical concerns. For example, the word "efficiency and effectiveness" has become widespread in the context of human production, a term that was formerly only used for machines [32].

It is common practice in society to compare existing systems to a hypothetical, predicted system of the same type called the "Ideal system" to improve them. The word "perfect system" refers to a system with ideal characteristics, which means it is faultless. Researchers noticed that by thinking about hypothetical devices or systems, they could improve the attributes/properties of real devices/systems, enhancing their performance. As a result, an ideal technology model is necessary to plan the increase of any practical technology's performance. The perfect business model is a system, including input, output, environmental/market conditions, and system requirements. A realistic online business model is identified and explored to accomplish the ideal business model [33]. Similarly, perfect technology is described as technology that meets all of a person's basic needs while also delivering a luxurious and enjoyable living without negatively hurting society or the environment.

7. APPLICATION OF TECHNOLOGY :

(1) Food :

Innovations in agriculture using nanotechnology are anticipated to enhance agricultural output while resolving issues in the food industry. Since the previous four years, the world's grain crop hasn't been able to keep up with the rising demand for food and proper nourishment. 9.4 hectares of forest are lost each year, which contributes to the global destruction of biodiversity. Our planet no longer has a quarter of its coral reefs and half of its forests. By the year 2050, it is anticipated that the present global population of 6.4 billion would have increased to 8.9 billion. The poorest nations are expected to account for 98% of this growth. By 2030, it is expected that there will be 5 billion people living in cities, which would put enormous pressure on food production and delivery. Precision farming utilizing nanosensors, nano pesticides, and low-cost decentralized water purification will be the means through which nanotechnology will offer solutions. Plant gene therapy will be a more sophisticated nanotechnology solution, producing pest-resistant, high-yield crops that use less water.

(2) Drinking Water:

Using clean, potable water for human use as well as for agricultural and industrial purposes might be made more efficient, affordable, and ecologically friendly thanks to nanotechnology. The world's problem with drinking water is predicted to be solved by nanotechnology advancements in low-cost water treatment. The most valuable natural resource on the planet is water. Most of it is seawater. Two-thirds of the world's freshwater supply, which is just 3% of the total, is frozen in glaciers, ice caps, and icebergs. Human consumption can be had with the remaining 1%. Currently, 2.4 billion people lack

access to sanitary facilities and 1.1 billion lack access to safe water. Around 3.4 million people, largely children, are thought to have died in 1998 from illnesses associated with water, which account for 80% of diseases in underdeveloped countries. The need for fresh water is growing. 70% of the water in the world is being used for agriculture. The water demand will grow by 60% by 2030 to feed an additional 2 billion people. By 2050, about two-thirds of the global population will be drought-affected, based on current consumption, population, and development trends. By enabling decentralized, low-cost water purification, detecting toxins at the molecular level, and creating far superior filtration systems, nanotechnology will help overcome this problem [34].

(3) Renewable Energy :

The whole human energy need for meeting necessities and leading a comfortable existence has been met through nanotechnology advancements in renewable energy. It's extremely difficult to strike a balance between the energy needs of humanity and the costs to the environment. By 2025, the world's energy demand is expected to increase by 50%, with fossil fuels accounting for the majority of this increase. More than 1.6 billion people worldwide do not have access to electricity at this time, and 2.4 billion rely on plant life, vegetation, or agricultural waste for their source of heat. By 2025, our use of fossil fuels may have doubled due to our increasing energy demand. The Earth's glaciers are melting, atmospheric CO₂ levels have nearly quadrupled, and three of the last five years have had the highest temperatures ever recorded since records began in 1861. The hottest year on record was 1998, followed by 2001 and 2004 [35]. Through more energy-efficient lighting, fuel cells, hydrogen storage, solar cells, locally distributed power generation, and decentralized generation and storage by rethinking the power grid, nanotechnology will assist to meet our demand for energy solutions.

(4) Clothing :

Currently, there are clothes on the market that use nanotechnology. With nanosized fibers or particles, composite fabrics may be made without significantly increasing their weight, thickness, or stiffness, which could have happened with earlier methods. It encourages the development of textiles that do not wrinkle, bleed, or harbor germs. Products that have been coated with nanocoatings or made using nanotechnology include antimicrobial socks, underwear, and athletic equipment; wind- and water-resistant jackets; wrinkle- and stain-resistant suits and casual wear; and swimwear that block UVA and UVB radiation. The benefits of nanotech textiles are resistance to water and stains and protection against heat or cold. Similar to the lotus plant's characteristic, dirt washes off in the rain. decreases smelly smells [34-36].

(5) Shelter :

Through the creation of energy-efficient, very strong, incredibly durable, and incredibly light construction materials, nanotechnology presents intriguing new options for the construction industry. Nanotechnology and science, which were preceded by the IT and software revolution, are anticipated to usher in a new paradigm change in all areas of technology, including infrastructure and building. Briefly stated, nanotechnology is now recognized as a ground-breaking technology that can assist in meeting critical demands for energy, the environment, health, housing, and agriculture in poor nations. By 2015, it is predicted that products with a global market value of \$1 trillion would use nanotechnology in significant functional components. With a budgeted commitment of Rs. 1000 crore, the Government of India has started several significant research endeavors as part of an ambitious mission-mode program that was undertaken to meet this objective. A new area of study is cement nano-modification. The prospect of creating new cement additives, including revolutionary super-plasticizers and nanoparticles, exists thanks to the synthesis and assembly of materials at the nanometer scale. To manage the characteristics, functionality, and durability of concrete, it is now feasible to modify the basic structure of cement phases. Additionally, nano-modification offers vital data for more precise concrete service life prediction as well as insights for further enhancing it. The medical sector may be where nanotechnology's effects are most noticeable. Patients will consume fluids that have nanorobots in them that are engineered to destroy and rebuild the molecular structure of viruses and cancer cells. Nanorobots may potentially be able to reverse or greatly slow down the aging process, leading to a considerable rise in life expectancy. Nanosurgeons might function at a level a thousand times more exact than the sharpest scalpel because of the programming of nanorobots to carry out delicate procedures. A nanorobot might do surgery with no visible scars since it operates on such a small scale. Nanorobots may alter your physical appearance as well. They might be trained to do cosmetic surgery

by rearranging the atoms in a person's body to modify his ears, nose, eye color, or any other physical trait he wishes to change.

(6) Human health :

The study of human health is a significant topic of nanotechnology. Longer lifespans are the norm for people. Men and women in earlier ages anticipated living to be 48 and 51 years old, respectively. However, with the development of anti-aging technologies, the present life expectancy is between 74 and 80 years, and it might be much longer in the future. Additionally, in the previous 20 years, 30 new highly contagious illnesses have been identified. HIV/AIDS, Ebola, and the avian flu are among the illnesses that cause 30% of all fatalities globally. The most research serious concern, HIV/AIDS, has resulted in 22 million deaths and 42 million infections. Worldwide infections reached 5 million in 2003. Research by the UN found that as AIDS spreads quickly throughout Asia and Eastern Europe, it is becoming a more global problem. A total of 1.5 million Americans are diagnosed with cancer each year, and over 500,000 individuals die from it. In 2020, there may be 15 million additional instances of cancer, up by 50%, with the aging global population being the main cause. The medical industry is benefiting greatly from recent advances in nanotechnology. Faster medication development, innovative drug delivery systems, and low-cost, quick diagnostics are just a few of the nanotechnology applications that will be used in this field. The repair of DNA and cellular damage as well as the personalization of pharmacological therapy are some longer-term and even more potent outcomes of nanotechnology. Longer-term uses of cutting-edge nanotechnology for health and lifespan are examined in the Expert Opinion articles listed below [37].

(7) Environment & Climate :

Natural resources are in high demand, and there is a growing need for human habitat, all the while our water and soil are becoming more and more hazardous. 7 million hectares of forest are lost each year, destroying biodiversity all over the planet. We have lost 25% of the coral reefs and 50% of the world's forests. Increasing dangers, particularly to the seas, are contributing to a yearly decline in biodiversity. The ozone layer is still being damaged, despite a slowdown in the rate of damage. Many people think that the phenomenon known as "global warming," which is thought to be caused by man-made greenhouse gases, is causing changes to the planet's climate. Because developing nations prioritize economic growth over resolving this issue, proposals to do so would be costly and unlikely to be adopted. Through the use of nanosensors for precise pollution monitoring, lighter, more energy-efficient materials, and the coating of surfaces with nanoscale materials, nanotechnology will help solve problems by eliminating the need for harsh cleaning agents. A more sophisticated approach to nanotechnology will be to employ efficient nanosystems to create our goods with molecular-level accuracy, producing almost no chemical waste.

(8) Sustainable transportation, & information communication technology for everybody:

The development of lighter, more efficient materials for automobile and airplane systems will be made possible by the use of nanotechnology, which will serve as a crucial enabling platform technology. Effective and non-platinum-based catalytic converters, and high-performance tires for autos. fuel and power sources that are new and more effective, etc. Currently, there are a lot of individuals who don't have widespread access to communications, information, fundamental technology services, and technological resources. Education, democratization, and economic progress are all hampered by this lack of access in intractable ways. The usage of nanotechnology applications will significantly lower the cost and improve the performance of memory, screens, processors, solar-powered components, and embedded intelligence systems. Additionally, it will make networks capable of self-configuring. These advancements would provide a pervasive computing environment that would encourage increased international communication, cross-cultural understanding, and collaboration [38–39].

(9) Nano-factories :

Nanofactories, which produce objects on an atomic and molecular scale, is becoming a reality and one day may be used to create a variety of products, including pharmaceuticals, semiconductor chips, and even cell-sized robots that patrol the human body. The first stage would be to create assemblers, which are nanoscale devices that can be programmed to manipulate atoms and molecules as needed. It would take billions of concurrently operating assemblers to make molecular manufacturing a reality. Assemblers are thought to be able to reproduce themselves first before creating new assemblers. Up until there are enough assemblers to manufacture items, each generation would add another, leading to exponential expansion. Even if trillions of assemblers and replicators filled an area smaller than a cubic

millimeter, they could still be too tiny for humans to see with our naked eyes. Together, replicators and assemblers might build goods automatically, eventually displace all current labor-intensive techniques, and develop a three-dimensional printing technique for materials and objects. This might significantly lower production costs, resulting in more numerous, less expensive, and robust consumer items. We will eventually be able to recreate everything thanks to 3D printers, including food, water, and diamonds. Machines that create food to feed the poor might end famine [39–40].

(10) Space-travel :

Our excessive desire for diverse resources and raw materials is the cause of the problems that mankind is currently facing on Earth. The cost of extracting them is a significant obstacle, even though many of these minerals can be found in space. The costs involved as well as concerns over performance, dependability, and safety are deterrents to space development. There are four reasons why space exploration and colonization are important, according to the National Space Society. These factors—survival, expansion, affluence, and curiosity—indicate that we as a species need greater space. We will be able to monitor the condition of our planet through space research, find resources, and use it as creative outlets. Humans will be able to function in space more safely thanks to nanotechnology. Propulsion fuels, coatings, structural materials, intelligent clothing, electronics, and life support settings are examples of applications where nanotechnology will influence space exploration. In comparison to what is now accessible, they will be more effective, stronger, self-healing, and lighter.

(11) Extended life span :

Nanotechnology may help us live longer in two different ways. One way is by assisting in the eradication of fatal diseases like cancer, and the other is by healing cellular damage to our bodies, which is a little version of finding eternal youth. The notion of cellular healing of our bodies is the most intriguing option. Our cells should be able to heal themselves thanks to emerging nanorobot construction methods. For instance, substances in our bodies or radiation harm DNA in our cells as we age. Our cells could operate normally if nanorobots could repair the DNA that has been damaged. Our cells' capacity to fix damaged DNA and other parts might potentially rejuvenate our bodies, going beyond simply keeping us healthy. In some non-dividing cell types, such as those in the brain, heart, liver, kidneys, and eyes, there is a compound called lipofuscin that may be removed to increase the lifetime of humans. Mostly found in lysosomes, lipofuscin is a metabolic byproduct (the garbage disposal organelles within cells). It is believed that when lipofuscin builds up to certain levels, it starts to have a deleterious influence on cell function, which finally appears in a variety of age-related illnesses. According to Aubrey de Grey et al., soil bacterial enzymes may be able to break down lipofuscin. According to some theories, with the right rejuvenating treatments, people may live for up to 1,000 years. By fixing damaged cells and organs inside our bodies, tiny machines will be able to completely eradicate sickness in 30 to 40 years. We will also employ nanotechnology to support our memories and personalities. And in 35 to 40 years, we will essentially live forever [41].

(12) Manipulate matter's essential essence:

Ideal technology preserves the underlying properties of everything while manipulating its basic aspects. In the ultimate technology, gravity, electromagnetism, strong force, and weak force are all interconnected. The four fundamental forces of the cosmos may be used by users of an ideal technology to achieve practically any desired outcome. The user is then able to transmute elements, change space-time, and rearrange matter to create new combinations. As a result, ideal technology helps in modifying matter's fundamental nature to provide answers to both simple and complex problems facing humans.

(13) Cost-effective and resource-self-sufficient:

Any technology should be accessible to anybody with the necessary resources and be resource independent, simple, pervasive, and affordable. One such technology is appropriate, a movement in philosophy (and its manifestations). The term "appropriate technology" varies depending on the field and application, but it is generally accepted to include locally controlled, labor-intensive, small-scale, decentralized, energy-efficient, and environmentally sound technical choices [42].

(14) Ubiquitous :

Being everywhere at once or being present everywhere is what it means to be ubiquitous, as opposed to the idea of technology being present but unnoticeable. Another name for this technology is pervasive computing, sometimes known as "things that think." With the use of such technology, people would be able to live mobile lives and yet have access to the information and resources they need to address problems whenever they choose, without being bound by the availability of any one technical tool.

Turning virtual reality on its head is the central idea of ubiquitous technology [42–45]. The common user is sucked into a technical system and thrust into an unmediated space. On the other hand, systems can now exist and work in settings where people are present because of this technology. As a consequence, customers may access products and services at any time, from any place, for any time.

(15) Everyone can afford it:

Everyone should be able to benefit from clever, user-friendly technology. Innovative technologies like smartphones and tablets are becoming more widely available as new versions are produced at cheaper rates. Healthcare services have become more affordable, for instance, thanks to technology. Because it utilizes fundamental components of nature and adapts them to human requirements at a reasonable cost, flawless technology can thus be used by anybody.

(16) Address fundamental requirements:

Food, water, energy, health care, housing, safety, and the reduction of poverty all depend on science and technology. Technology is created by a "scientific establishment," which consists of a collection of institutions, individuals, and resources engaged in the active pursuit of new knowledge by a set of "internal" standards and procedures. Humans' demand for basic comfort is a major, humiliating problem in the twenty-first century. In contrast to the shining scientific achievements in basic and biological research, there is a frightening image of unmet necessities causing major health consequences. People in undeveloped and poorer nations currently have a low quality of life because of (1) food shortages and malnutrition. 2. contaminated water (3) An inadequate or nonexistent sanitation system. (4) A lack of or insufficient access to healthcare. (5) Not enough space or crowded. (6) Ineffective and basic instruction. (7) The absence of or inadequacy of social security. Poor and emerging nations are particularly affected by these issues. Lack of advancement in science, society, and technology is the main cause of the disparity in living circumstances and quality of life. To satisfy basic needs including food, clean water, renewable energy, clothing, shelter, and health, ideal technology should be able to do so.

(17) Make yourself comfortable:

People now have new chances thanks to technological breakthroughs to live healthier, safer, more comprehensible, independent, pleasant, and more comfortable lives. For instance, modern technologies provide us with long-term, energy-efficient solutions to improve our environment as well as tools to enable seniors to maintain their independence for longer. We now have new means of communication and entertainment thanks to modern technologies. A few examples of online communities and commerce, 3D television, and sustainable energy technologies like hydrogen and biomass include smartphones, ambient intelligence, and intelligent homes. In the historical narratives of engineers, comfort is frequently thought to be a uniquely human state or quality, with each advancement bringing civilization closer to obtaining ideal interior conditions. Social historians treat social success and comfort differently, viewing them as malleable concepts. By meeting their wants, the components of advanced technology provide customers with a comfortable living.

(18) Equality :

Everyone now has an equal chance to recognize and take advantage of opportunities throughout the world thanks to technology. Therefore, ideal technology should provide equal possibilities and comparable solutions to all users, regardless of gender, religion, background, education, economic status, or location of birth.

(19) Automation :

Automatic control, commonly referred to as automation, is the use of various control systems to operate. The perfect technology automates all business processes in all kinds of organizations to produce the required results based on programming.

(20) Immortality :

Being able to live forever is immortality. Medical procedures and engineering may or may not be able to overcome the basic limitations of biological life. For instance, natural selection has created the possibility of physical immortality in living things like jellyfish. Some scientists believe that human immortality can be attained in the first few decades of the twenty-first century, but others believe that life extension is a more pressing goal, with immortality awaiting further technological advancements in the foreseeable future. The recently developed technologies aid in With the help of recently discovered technology, humans might become eternal biologically. Regenerative medicine, which is a novel area of study, was introduced by an early report on the separation of these cells. The whole human body may

possibly be brought back to youth with this method. Therefore, immortality is the ultimate goal of flawless technology, which may result in a sickness that never dies or a greater life expectancy for people.

8. BUSINESS FOR SUSTAINABLE SOCIETY :

The significance of the business sector's involvement in attaining a sustainable society and its obligation to make environmentally sensitive decisions is more acknowledged these days. Having a clear and powerful president's vision and setting quantifiable long-term environmental targets is critical for commercial organizations to make environmentally responsible decisions and actions. The significance of the business sector's involvement in attaining a sustainable society and its obligation to make ecologically sensitive decisions is more acknowledged these days. They are admitting that the private sector is not only a source of environmental problems but can also be a source of solutions.

Several fantastic companies are well-known for their exceptional environmental conservation and load reduction contributions. For commercial organizations to adopt ecologically responsible decisions and activities, having a clear and forceful vision of the president and defining quantifiable long-term objectives is crucial.

8.1 Various Business Models & Strategies:

As our business model explanation and example demonstrate, they all have the same essential components. You can't make any money without them. You must include manufacturing costs and other aspects to see the whole picture. What goes into developing a corporate strategy? Here are the ten elements to remember:

Business Models:

(1) Subscription-based business model

In essence, a consumer makes a monthly (or other predetermined length) recurrent payment for access to a service or product, as we indicated about Netflix. You may either pay to use an app or have a company give you its products in the mail.

(2) Model of bundling

This business approach allows companies to increase sales volumes and market more difficult-to-sell products or services. On the other hand, smaller product pricing typically results in lower profit margins.

(3) The freemium business model

However, the company restricts or prohibits using numerous critical tasks that customers will likely want to use more frequently over time. To access such essential services, users must first purchase a subscription.

(4) Model of razor blades

Razor blades are more costly than razors. Companies give less expensive razors in the hopes that you will buy more expensive accessories in the future, such as razor blades. As a result, the "razor blades model" is the name given to this type.

(5) Service-to-product model

Customers can purchase a result from enterprises that use this business model rather than the equipment that produces it.

(6) Leasing model

A corporation acquires a product from a seller under the leasing business model. That firm lets another company utilize its developed product for a monthly charge. Large-ticket commodities such as manufacturing and medical equipment benefit the most from leasing arrangements.

(7) Franchise model

The franchise model is possibly the most well-known of all the numerous company models; after all, we all see and maybe visit franchise firms regularly. In exchange, the franchisee gives the franchisor a portion of the profits.

(8) Distribution model

Distributors are in charge of getting manufacturing items to market. For example, Hershey's makes and packages its chocolate, while distributors are the intermediaries that move and sell the items from the plant to the merchant.

(9) Manufacturer model

The manufacturer model is when a manufacturer changes raw resources into a product. Companies like Dell Computers and Hewlett-Packard, who construct computers using parts made by others, would still be called manufacturers.

(10) Retailer model

In the supply chain, a store is a final connection. These companies buy products from wholesalers and then resell them to clients at a profit. Retailers may specialize in a specific area, such as kitchenware, or provide a diverse selection of goods.

Business Strategies :

The generic strategies used in business management by commercial organizations are (1) Black ocean strategy or survival strategy [46-51], (2) Green ocean strategy or sustainability strategy [52-53], (3) Blue ocean strategy or monopoly strategy [54-56], (4) Red ocean strategy or competitive strategy [57-61], (5) White ocean or mixed strategy [62-68], and (6) Alternative or strategy [69-70]. Use of innovative technology (both general purpose and special purpose) will help business organizations to solve problems and to improve their efficiency and effectiveness, marching towards excellency [71].

8.2 Ideal Business Concept & Characteristics:

Depending on how well they increase sales and benefit stakeholders, ideal business traits may be articulated. Following is a visual representation of the qualities listed in the ideal business model [14].

A. Input Conditions:

(1) Minimal labor requirements

Any firm will employ a low-cost approach as one of its tactics. The demand for labor is reduced through the automation of numerous operations, which lowers operating costs. Additionally, automation raises output and, most of the time reduces waste. The personnel department of any firm has difficulty maintaining positive labor relations and increasing productivity. Businesses invest a significant portion of their profits or expenses in the welfare of their employees. The ideal business only needs a small amount of labor, which means that the cost of keeping employees and providing for their welfare is kept to a minimum. Thus, the firm will perform better with fewer employees. A better company plan always makes advantage of greater technologies to save labor costs.

(2) Low overhead expenditure:

Many traditional business firms encounter difficulties as a result of the significant investments needed to choose an appropriate location to capitalize on location advantage, continuously gather the necessary resources, maintain skilled employees, maintain suitable inventory, obtain legal counsel to maintain government, environmental, international business, and proper industrial relations regulations, as well as advertising costs in various media and transportation and distribution costs. Being a cost leader and developing a price strategy is hindered by these investments, interest, and maintenance costs. On the other side, the ideal company model will include practical characteristics like minimal operating costs. A pricey location is not necessary. It doesn't require lots of power, a lot of advertising, a lot of legal counsel, expensive workers, or a lot of stock.

(3) No major investments in the form of Capital:

Obtaining monetary resources is one of the challenges faced while beginning a business. This includes the expense of building a facility for production or service as well as the expense of acquiring the necessary resources for operating a firm. A firm requires a sizable capital expenditure since the cost of land, buildings, machinery, and skilled labor has increased. Such an investment is a significant financial burden for new competitors, and the expense associated with it rises the point at which a profit may be realized before a loss. The characteristics of the ideal corporation should prevent significant financial outlays or significant capital expenditures on inventory or equipment. This means that it doesn't need a lot of money.

B. Output Conditions

(1) Demand is always higher than supply:

One of the issues facing today's business managers is generating demand for their goods and services by developing an effective marketing strategy and differentiating their goods and services to offer

endless value. A company can experience sustained business and profit for a long period if the demand for its product is equal to or greater than its supply capacity. The company has to increase productivity by close to 100% if it wants to keep supply close to or equal to demand. The ideal company model has goods and services designed so that there is always more demand than there is supply and that manufacturing is always 100% efficient.

(2) Sustainability for long time:

A company will last for a long time if it has products or services and a business plan that allows it to meet demand on a worldwide scale, produce goods or services with close to 100% efficiency, use fewer resources than necessary to run its operations, and provide unmatched value to consumers. Therefore, by the concept, a good business model will be long-lasting.

C. Market Conditions:

(1) Unlimited global market:

Globally compliant goods and services generate demand from all corners of the globe. A company can generate demand for its goods/services on a worldwide scale based on either license/patent protection or via the use of the blue ocean strategy. Using the right business model and strategy, a company may offer its goods and services all over the world. The employment of appropriate technology, physical or intangible goods or services, as well as perishable or non-perishable resources, is another requirement for a company to actualize an infinite global market. Consequently, the ideal business should serve a limitless worldwide market and offer its goods/services to the entire world rather than just a certain area.

(2) Inelastic demand for products/services:

A product or service designed with certain appealing aspects for both sexes, for all age groups, from young children to the elderly, will have an inelastic demand in the worldwide market. Only when a business strategy can bring down manufacturing costs, advertising expenses, and distribution costs to a minimal level near \$0 will it be able to maintain inelastic demand for the product or service. Inelastic demand is produced by a good or service that has a killer feature that appeals to all global client segments and makes them want to buy it no matter what the cost.

(3) Business protection through copyright or patent:

In a perfect business model, a company's goods or services are developed in a way that prevents them from becoming outdated as a result of things like technological advancements, the creation of greater goods, or the copying of similar goods or services by rival companies. Through some secured protection for its distinctive products/services, the company should experience long-term sustainable advantage and profit without any risk. Therefore, the ideal company strategy promotes a good or service that is difficult to duplicate. This indicates that the good or service is unique or, at the very least, that it is something that can be protected by a patent or copyright.

D. System Requirements:

(1) Free from government regulations or restrictions:

For a business model to be successful, the location of the firm, the clients' nation of origin, investments in resources, technology, inventory, and transportation, as well as marketing variables like dealer networks and specialized markets, should be removed. The Ideal Business employs its goods and services in a manner that leaves its business model mostly unaffected by any form of rules or limitations imposed by the government.

(2) Portability of business to anywhere:

An effective company plan should include elements that make it location-independent. No matter where it is conducted—physically, geographically, politically, economically, or technologically—the business should have the same degree of difficulty and performance in terms of productivity, efficiency, and effectiveness, and subsequently income and profit. The ideal business should have a uniform degree of difficulty everywhere and be completely portable or readily movable based on the owner's interests from one site to another. This implies that a person can relocate both himself and their business to whatever location they want.

(3) Satisfies owner's intellectual needs:

Any company strategy should include key components that are complicated enough for only clever individuals to be able to overcome and succeed. Due to the complexity and high intelligence

requirements for building characteristics of such models, nobody, regardless of intellectual capacity or level of intelligence, can get all the attributes of the perfect business. Being the company's owner, he should come up with and put into practice ideas that will help him achieve the desired business qualities. There is nothing like being enthralled by what one is doing to satisfy one's intellectual demands, which is what an ideal business model should do.

(4) Enough free time to its owner & employees

Automation at every level is one of the traits of the ideal company model. The procedures and components of the business should be planned so that the time of the owner, managers, and employees, as well as other necessary resources, is spent to the least possible amount. The quality of the business's operations is maintained by this type of automation, which also reduces the owner and staff's labour-intensive tasks without compromising the standard of the delivered goods or the level of customer service. So, the ideal business model gives its owner and staff considerable free time. In other words, it doesn't demand his effort and focus for 12, 16, or 18 hours per day.

(5) Income is not limited by personal output (Leverage):

The personal output (also known as leverage) of a company's people resources determines its productivity and, ultimately, its profitability. Organizations strive to increase their production and, consequently, their profit via training and improving staff morale. The ideal business model should include elements like a high degree of automation and product/service duplication to satisfy worldwide demand without the need for extra resources. Since none of the fundamental aspects of a business, such as manufacturing, distribution, marketing, and customer service, should be constrained by individual performance or organizational leverage, income is unrelated to individual results. No matter how many consumers it has, the business must be able to offer the same sort and degree of service to each one. A business plan that does not limit income by individual production is thus the ideal business model (Leverage). As easy as one customer may be acquired, ten thousand can be acquired in the Ideal Business.

(6) No liability after sales:

The provision of post-sale assistance is one of the issues facing commercial enterprises. The difficulty of after-sales should be minimized by companies while designing and developing their goods and services. Companies may reduce their time and expense in providing after-sales assistance based on the chosen product or service, its characteristics, and the business strategy. Since it is ideal, the ideal business model will have no after-sale obligation.

(7) No fear on seasonality, perishability and price drop:

Many traditional company enterprises are struggling with issues including seasonal and non-seasonal business changes, perishable goods across time and distance, unanticipated price drops brought on by competition, or a decline in demand, etc. A perfect company model avoids issues like seasonality, perishability, and price decline by carefully selecting its products and services [81-82].

9. ICCT UNDERLYING TECHNOLOGIES :

All three GPT traits are present in information, communication, and computation technology (ICCT). The list of ICCT underlying technologies, their features, and importance in various future applications are depicted in table 1. ICCT's pervasiveness characteristics have grown and spread its roots throughout all businesses and industrial sectors in the twenty-first century [44-45, 72-73].

Table 1: Features and importance of ICCT underlying technologies

S. No.	ICCT Underlying Technology	Features	Importance
1	Artificial Intelligence and Robotics	Connecting brains and computers would create the ideal artificial brain. Artificial intelligence is employed in a variety of service industries, including tourism, telecommunications, citizen services, banking for loan decisions, retail, and others.	Doing better in terms of thought and behaviour than people.

2	Big Data and Business Intelligence (Business Analytics)	There are several industries that use supply chain management, including banking, tourism, health, finance & insurance, and fashion. A perfect business prediction.	Combining market trends, consumer preferences, hidden patterns, and undiscovered connections to create meaningful data that will aid businesses in making more informed decisions.
3	Blockchain distributed ledger technology.	Government, healthcare, retail, travel & hospitality, and consumer packaged goods are among the industries where blockchain technology is being used. Financial Services: A variety of innovative uses for blockchain technology are already being made in the financial services sector.	For transactions that include several steps, the blockchain makes it easier to verify and track them. It has the ability to safeguard transactions, lower compliance expenses, and quicken data transfer procedures. The use of blockchain technology can facilitate contract administration and product audits.
4	Cloud Computing	Financial, educational, security, brokerage, healthcare, gaming, supply chain, and telecommunications businesses are just a few that offer financial services. highest-performing computer.	Using any location's most economical and effective computer infrastructure.
5	Forensic Technology & Cyber Security	Just a handful of the crimes that may be investigated using digital evidence include data theft, network breaches, and unauthorised internet transactions. By tracking down information related to a system or network penetration, businesses may find and punish cyber criminals.	Law enforcement and criminal investigations both use forensics. Sometimes, like in hacking and denial-of-service (DOS) attacks, the computer system itself turns into the crime scene. On the computer system, the crime's evidence will be kept.
6	Digital Technology for Marketing and Business	Companies that use digital marketing and customer relationship management include hotels, travel agencies, and healthcare providers. The ideal co-operation in business.	Using digital and internet technology, mobile commerce and e-marketing are possible.
7	3D Printing is a technology that allows to create three-dimensional objects	Ideal Component and Device Manufacturing, Forestry, and Health Sciences.	constructing three-dimensional structures using computer files. This is made possible by additive manufacturing processes, which use less material than conventional ones.
8	The Internet of Things (IoT) is a type of technology that allows to connect various	Services can innovate thanks to the Internet of Things. Among the services offered by smart cities include tourism, healthcare, telecommunications, logistics, transportation, and retail.	Equipment may be remotely operated thanks to the integration and linking of the physical and digital worlds.

	devices to the internet	Connectivity and control work well together.	
9	Data Storage Technology	Any area of the service sector where a significant amount of company data and information must be quickly kept and accessible. This storage method is excellent.	If the correct technology is applied, a large amount of data may be stored in a tiny area.
10	Quantum Computing technology	Future retail, supply chain and logistics, telecommunications, and information security industries, to mention a few, will depend heavily on high-speed computers based on optical technology. The best possible computers.	data processing with a high throughput
11	Technology in Online Education	Just a few examples include healthcare, retail banking, library services, and education. a top-notch educational system.	Regardless of their location, age, or financial position, everyone may receive an education because to technology.
12	Technology for Virtual and Augmented Reality	To mention a few, these include banking, education, and training, tourism, and the travel sector. The greatest solution is virtual reality.	The reproduction of bodily sensations in virtual reality is in three dimensions.

Cloud computing is a computer technological innovation that also incorporates information communication technologies. Because of its ubiquitous availability and scalability, cloud computing has been a popular study topic and provides value to commercial computer systems. For every business decision, the cloud computing idea delivers so-called Business Intelligence (BI) over the Internet. Renting both hardware and software to process data online is possible with cloud computing. The cloud computing paradigm comes in three flavors to give ubiquitous computing service solutions to businesses: SaaS, IaaS, and PaaS. (PaaS). Any company may adopt a cloud computing solution to reduce their investment and maintenance expenses while maintaining access to BI solutions, providing them with a competitive edge [74-81]. Cloud computing is a subset of the ICCT (Information, Communication, and Computation Technology) domain [72]?

Learning and memorizing, problem-solving, and decision-making are all cognitive functions that artificial intelligence robots emulate. The ICCT has created a framework that allows AI to be used and developed in electronic systems used in any industry [72]. ICCT's widespread deployment and innovation, rather than a new disruptive technology, is the Internet of Things (IoT). 3D printing is an ICCT application that combines or hardens multiple materials using various techniques under the direction of a computer to make a three-dimensional item. 3D printing creates an object by depositing successive layers of material until the result is complete. Metal, textiles, biotechnology, and many other industries employ 3D printing, which has many uses in several industries worldwide. A general-purpose ICCT technology used in various industrial and home automation applications is 3D printing [75]. Virtual Reality (VR) is a computer-generated environment in which the user suspends disbelief and accepts it as actual reality. Virtual reality is often experienced on a computer using two of the five senses: sight and sound. Virtual reality is presently being developed and used primarily in simulated teaching and learning contexts and simulated gaming situations. However, similar to augmented reality, it might be used in several industries, including business, and could be classified as general-purpose technology [76]. High-speed data processing and storage using nanotechnology-based optical computers will revolutionize the computing industry. Design and manufacture, as well as operation and applications, are all linked by optical computation [77].

10. NANOTECHNOLOGY :

Nanotechnology has the potential to alter the properties of materials radically. The Molecules can be organized in unexpected ways. Nanotechnology may change a material's mechanical, material strength, electrical, and optical properties. Lithography, self-assembly, and bottom-up techniques are all viable options for manipulating nanomaterials. The first worldwide scientific undertaking of the twenty-first century is nanotechnology. Nanotechnologies reveal commercialization processes, from small to large businesses, in collaboration with public sector research. They contribute to evolving patterns of industrial organization, influencing public policy measures to encourage their growth as general-purpose and enabling technologies. Nanotechnologies allow the development of new goods and ways to improve people's quality of life in addition to general-purpose technologies. Nanotechnology is replacing microtechnology in several fields, including energy, photonics, biotechnologies, and nanotechnology in electronics.

Nanotechnology has the potential to transform our lives completely. Nanotechnology impacts all materials, including metals, ceramics, polymers, organics, and biomaterials [73].

Nanotechnology has applications in the following areas:

(1) Medicine: This includes, among other things, pharmaceutical delivery, diagnostic procedures, antimicrobial tactics, cell repair, cancer detection and treatment, gene therapy, nanotechnology in regenerative medicine and tissue engineering, and lifespan extension.

(2) Renewable Energy: This group comprises low-cost solar cells and energy collection, storage, and optimization technologies.

(3) Nanotechnology for weapon systems, nanotechnology for satellites, nanotechnology for logistics, nanotechnology for security, nanotechnology for military operations on land, nanotechnology for military operations in the air, nanotechnology for military operations at sea, nanotechnology for urban operations, and so on are all included in this category.

(4) Nanomaterials, nano processing, Nano assembly, Nano coating, and Nano measurement are all part of the manufacturing process in civil and mechanical engineering [73-74].

Nanotechnology, merely a set of techniques for modifying qualities at a microscopic scale, has numerous applications in all areas of life. Nanotechnology is a broad word that refers to several technologies expected to provide a flurry of new products and applications. Nanotechnology produces a wide range of products that are rapidly expanding. Nanotechnology is thought to have the potential to lengthen human lifespans considerably or to construct replicator-like systems that can make nearly anything from simple raw materials. Chemical sensors, sporting goods, fabric, cleaning products, energy, environment, and even extended longevity are just a few of the uses of nanotechnology that have been found. Nanotechnology research management requires seeing an idea through to completion to build nanotools, which are minimal and compact tools. These are developed at the molecular level to do nanoscale tasks. Nanotechnology requires tools that are designed and produced individually for each purpose. Because using the instruments necessitates meticulous and minute preparation, molecular nanotechnology experts will be in great demand in the profession. Nanotechnology's long-awaited breakthrough will soon transform our lives and the whole globe. Nanotechnology is expected to fundamentally revolutionize international economies, enhance the global environment, and bring a new understanding of what it means to be human, according to researchers and officials from around the world [74].

11. CONCEPT OF TECHNOLOGY BASED INNOVATIONS IN BUSINESS :

Tech-business analytics requires a strategy that respects innovation and correctly applies predictive analytics rather than being utilized as a faultless crystal ball. The ultimate goal of the invention is to produce a new product or make a significant improvement to an existing one, whether large or small. According to economists, big data is the new frontier for innovation, competitiveness, and productivity increases. Big data is crucial for identifying capital assets, labour matching, and production levels. Companies may obtain significant competitive advantages by utilizing Big Data. Organizations may use business analytics to decrease risk. It may aid businesses in reducing short- and long-term risk by enabling them to make the best possible decisions based on readily available data such as client preferences, trends, etc. This strategy relies heavily on data innovation. Determining production levels, labour matching, and capital assets all depend on big data. Companies may acquire significant

competitive benefits by utilizing Big Data. Business analytics can help organizations reduce risk. Data innovation is required to meet the Sustainable Development Goals (SDGs).

Customers' preferences for new products and services may be predicted using big data.

- Productivity has increased.
- Cost-cutting is the ability to compete more effectively.
- Increased brand value and recognition.
- Establishing new ties and collaborations.
- Profitability and turnover have both improved [78].

12. TECHNOLOGY ACCEPTANCE MODELS :

While TAM has been criticized for several reasons, it is an overarching framework compatible with the considerable research on the factors influencing older people's propensity to adopt new technology. Embracing extensive data analytics systems has gained much interest in information systems research. This study investigates the effects of system properties on managers' attitudes toward using extensive data analytics systems, adding to the knowledge about extensive data analytics adoption. This study suggests a research strategy based on a review of the literature on the Technology Acceptance Model, which was backed up by a survey of 150 significant data analytics users. This study adds to the body of knowledge concerning extensive data analytics system adoption and supports big data analytics providers and suppliers in creating their business models [74-75].

In recent years, technological advancements have envisioned individuals doing chores more quickly. Heavy machinery is required in every industrial firm to execute tasks symmetrically and systematically, which has become much simpler thanks to technological improvements. As a result of technological growth, human existence is directly affected. It has been discovered that people are now entirely reliant on it. One example of technological innovation is the online game industry. The development of online games is now a significant industry on a global scale. Our main goal is to look at the essential variables that support the mobile gaming industry to grow. The system and the symmetric relations inside it can be divided into two stages for analysis. The first step uses a TAM Model, a fast approach to tackling statistical issues, and the second uses machine learning (ML) techniques like SVM, logistic regression, and others. Both methodologies are standard and effective in analyzing a system while better maintaining symmetry. Consequently, both the TAM model and the ML method show that perceived utility, attitude, and symmetric flow are critical elements in the gaming business. The data indicate that perceived usefulness is essential in determining behavior intention in online mobile gaming.

(1) Using Machine Learning Techniques, create a Technology Acceptance Model for Online Mobile Games. The advancement of technology in recent years has envisioned individuals completing chores more efficiently. Heavy machinery is required in every industrial business to do duties in a balanced and organized manner, which has become more straightforward thanks to technological advancements.

(2) A Quantitative Approach to Mobile Gaming Addiction Using a Random Forest Classifier, Kaiser-Meyer-Olkin Factor Analysis In today's fast-paced world, technology helps us to evolve and create. With the help of technology, we can transition from a traditional to a digital lifestyle due to technical advancements, such as Mobile Gaming.

(3) Identifying the Predictors of E-Commerce Behavioural Intention to Use Mobile Technologies. Electronic commerce (e-commerce), particularly mobile commerce, has witnessed steady growth over several decades (m-commerce). Companies have recognized the potential of this commerce channel as a result of these significant rises, particularly during the Covid-19 epidemic. Customer data is highly appreciated in modern businesses when analyzing consumer behavior and developing company strategies [75].

13. TECHNOLOGY SUPPORTED ANTICIPATED FUTURE BREAKTHROUGHS :

13.1 Ubiquitous Communication:

Ubiquitous networking, sometimes referred to as ubiquitous networking, is the deployment of wireless technology and communications infrastructure across the environment to enable permanent connectivity. A crucial element of widespread computing is that capability. An autonomous vehicle that recognizes its authorized passenger via smartphone

e proximity, docks and charges itself when necessary, and efficiently handles the emergency response, toll payments, and fast-food payments by interacting with the infrastructure is a great example of a ubiquitous computing system.

13.2 Information Super Highway:

The information superhighway is a concept that was mostly used in the 1990s to depict a national communications network that would cross the United States and allow Americans to instantly access and exchange information via phone, data, video, and other services. But the phrase now has several other connotations. The information superhighway and the Internet are both defined in certain dictionaries. Additionally, it's used to describe a worldwide network of pay-per-use or flat-rate access to communication services, such as telephone, cable television, and satellite networks. Similar words are used in other languages. Infostrada, the name of a prototype information network developed in Poland in the early 1970s, and infobahn, a term for a high-speed computer network (both modeled after the German autobahn), are both used interchangeably.

13.3 Integration of Data Analytic techniques in Business:

To develop business intelligence, this process may be referred to as tech-business analytics. Data integration is the process of merging data from several sources into a single, cohesive perspective. Cleansing, ETL mapping, and transformation are some of the processes that are included in integration after the intake phase. To enable data managers and executives to evaluate information and make wiser business decisions, data integration is the act of merging data from many sources. This procedure comprises searching, obtaining, cleaning, and displaying the data using a human or system. Facebook Ads and Google Ads are two of the many methods that SFI employs to manage its company. To monitor activity on its website and mobile app, Google Analytics is used. metadata for images and user data are stored in a MySQL database (e.g. hot dog or not hot dog).

13.4 Brain- Computer Networks:

A direct communication line between the electrical activity of the brain and an external device, most frequently a computer or a robotic limb, is known as a brain-computer interface (BCI), sometimes known as a brain-machine interface (BMI). Human cognitive or sensory-motor functions are frequently the focus of BCI research, mapping, assistance, and enhancement projects. BCIs can be implemented in a variety of ways, ranging from non-invasive (EEG, MEG, EOG, MRI) to partially invasive (ECoG and endovascular) to invasive (microelectrode array), depending on how near the electrodes are to the brain tissue. Recent studies in human-computer interaction have had great success in autonomously recognizing fall detection as a medical alarm, mental state (Relaxed, Neutral, Concentrating), mental-emotional state (Negative, Neutral, Positive), and thalamocortical dysrhythmia via the application of machine learning to statistical temporal features extracted from the frontal lobe (EEG brainwave) data.

13.5 Super-Intelligent Machines:

Future intelligent computers are examined in the book Super-Intelligent Machines, which mixes computer science and neurology. It discusses how they would imitate the learning patterns of human brains to serve billions of people via the network and the enhanced degree of consciousness this will provide them. This book outlines the altruistic and compassionate attitudes that must underpin machine learning to save human society, in contrast to human learning, which is encouraged by self-interests. The concept Super-Intelligent Machines examines how technology will alter living in the twenty-first century far more than it did in the twentieth.

13.6 Lifespan Expansion :

The idea of life extension is to increase human longevity, either gradually through medical advancements or drastically by raising the maximum lifespan over the conventional upper limit of 125 years. Future advancements in tissue rejuvenation, stem cells, regenerative medicine, molecular repair, gene therapy, pharmaceuticals, and organ replacement (such as with artificial organs or xenotransplantations) will eventually enable humans to have indefinite lifespans (agerasia) through total rejuvenation, according to several researchers in the field as well as "life extensionists," "immortalists,"

or "longevity" (those who wish to live longer lives themselves). Bioethicists discuss the ethical implications of life extension if it becomes a possibility.

14. CONCLUSION :

Given recent occurrences, both parties may expect a considerable shift in data analysis. Thanks to Big Data, businesses can analyze various forms of data and support management in making critical decisions. Big data analytics is not just financial analysis but also an evaluation of how client preferences, geography, and other variables influence a company's performance. Also, data forecasting appears to be the norm. In addition to statistics and general trends, skill acquisition is essential. Both provide numerous possibilities for people to learn and grow. This learning is genuinely crucial to keep up with the current developments. Previously, all that was necessary for analysis was statistics and survey data. Students and employees must be adaptive and always try to learn new skills. Data Science and Business Analytics positions are becoming increasingly popular as data and learning patterns change. There are several chances ahead of you. The relevance of Big Data analytics is growing exponentially, and it is now prevalent in many aspects of people's lives. Significant data breakthroughs and upgrades are crucial for the future of Big Data analytics, Big Data analytics apps, storage devices, data handling device technologies, AI, and machine learning, in addition to improving the sectors in which it is used [75–82].

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