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New Emerging technology

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ABSTRACT

New technologies are very important to the development of progressive businesses. The advent of new technology has aided the transition of businesses into the digital sphere. This innovation is most useful in the industrial, energy, and transportation sectors. There is always something new when the topic of technology is brought up, and the pursuit of new technologies that might benefit organizations is dogged. The eagerness to learn more about the technology and how it might change people's lives. One of the most rapidly expanding forces in the modern world is technology. There has been a dramatic shift in the fields of information technology and economic development as a result of the emergence of new technologies. This paper gives a review of the trending technologies nowadays and explores their features and applications of them.

Keywords: AI, Digital technology,Internet of things, Robotics Cybersecurity, New technologies

INTRODUCTION

Everything that can be done on a computer is considered digital technology. Computers and smart gadgets now regulate almost every aspect of human existence. All of the music and films we use today, whether we've downloaded them or are playing them through services such as Spotify, YouTube, Wynk, Amazon, or Netflix, are stored in digital technological formats. But with so much intelligence all around us, it begs the question: how intelligent are we, really? The more our reliance on technology, the more often this inquiry becomes.

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When we think about how new technology are influencing the minds of growing children, the subject becomes much more contentious. Technology plays a crucial part in shaping human thought. The term "technology" refers to the use of scientific knowledge for the benefit of human life or the modification and control of human environment. Cognition, on the other hand, refers to the mental processes and mental states that are important to knowing.

All of the processes, both conscious and subconscious, that lead to the acquisition of information are collectively referred to as cognition. The human brain is capable of many different kinds of thinking, including learning, remembering, seeing, solving problems, conceptualizing, etc. Human cognition is affected by developments in all areas of technology, including AI, IoT, aerospace, quantum computing, healthcare, and transportation.

1. THE NEW EMERGING TECHNOLOGIES

A. LET'S DISCUSS THESE TECHNOLOGIES

- **Artificial Intelligence (AI):** AI has entered the mainstream because to the proliferation of smart home assistants like Siri, Alexa, and Google Assistant. In the future, artificial intelligence, computer vision, & motion recognition will all reach critical mass in the industrial sector. However, as AI becomes more prominent, individuals are relying more on AI and less on their own intellect, which in turn leads to challenges with learning, spelling, reading, and writing.

- **Internet of Things (IoT):** Practical IoT implementation is meeting the rising need for edge computing processing capacity to meet the requirement to infer more data and proceed to make choices without transferring data to the cloud. Also, the most powerful AI processors, called neuromorphic or brain chips, can process the most advanced AI algorithms by emulating the brain's architecture.

- **Quantum Computing:** Its fast commercialization means it will soon be used on a massive scale to solve some of the most pressing issues facing several sectors, including healthcare and energy.

- **Upgraded Wireless Technologies:** Human cognition is also projected to be significantly impacted by the Internet's ongoing evolution, including the rollout of 5G & Starlink broadband Internet technologies.

- **Evolution of Autonomous Driving Technology:** Because there is no longer any need to memorize driving processes, both procedural memory and mind-body coordination have suffered as a result.

- **Cloud Computing:** More and more businesses are feeling the effects of one of the most recent innovations in IT: cloud computing. Servers, data storage, networks, services, and software applications are all examples of "cloud computing" resources that may be made available to users on a pay-as-you-go basis. "Third-party service providers" typically own and operate cloud computing infrastructure, with users paying on an as-needed basis for access.

- **Smarter Devices:** The development of AI has been crucial to the improvement of human life. It's not content with only mimicking human behavior; rather, it goes above and above to ease and streamline our daily routines. Data scientists are hard at work developing artificial intelligence-powered household appliances, robots, work gadgets, wearables, and much more, so we should expect to see these smarter things around for a long time. Smart software solutions are needed in almost every industry to make our working lives more bearable. As more businesses move towards digital environments, smarter gadgets are becoming an increasingly important component of the IT sector. These days, success in almost any professional setting requires a solid grounding in information technology and automated processes.
- **Extended Reality:** Virtual reality, mixed reality, augmented reality, and any other technology that simulates the actual world are all included under the umbrella term "extended reality." It's a big issue in IT right now because we all want to escape the "real" limits of the world. Gamers, doctors, and people in the retail and modeling industries love this technology because it allows them to experience something authentic without really being there. Regarding the extended reality, gaming is an important field for in-demand jobs that don't have advanced degrees but do require a love for the online gaming.
- **Robotic Process Automation (RPA):** "Robotic process automation" (RPA) is the other technology that is automating labor alongside artificial intelligence and machine learning. In business, routine tasks like application analysis, transaction processing, data management, and email response may all be automated with the use of robotic process automation (RPA) software. With RPA, mundane jobs that used to be performed by humans are automated.
- **Cyber Security:** Cyber security has been around for a long, so it may not seem like a cutting-edge innovation. However, it is constantly growing, just like any other technology. That's because there are always fresh dangers to deal with. Even though they have been met with increased security measures, malicious hackers who are seeking to unlawfully access data aren't going to give up anytime soon. The use of cutting-edge security technologies also contributes.
- **Augmented And Virtual Reality:** When considering the most sought-after and widely publicized technological developments of 2016, virtual reality is a no-brainer. "Virtual reality," in its shortened form, refers to a computer-generated environment that may be explored with the help of special headgear and hand-held devices."Augmented reality," on the other hand, is similar, but instead of showing a completely computer-generated environment, it shows the user's actual surroundings while superimposing computer-generated graphics on top of them.
- **Wi-Fi 6:** Wi-Fi (often written as wifi) has come a long way from its start in the 1990s. Wi-Fi is a term that was established by the nonprofit organization Wi-Fi Alliance, which has also been responsible for classifying each successive generation of wireless networking technology. Although Wi-Fi 6 was introduced in 2019, its many advantages have only just been fully appreciated (after years of usage). Users also benefit from reduced latency and increased throughput and throughput caps in the gigabits per second range with the next generation of wireless technology.

1. CHARACTERISTICS OF EMERGING TECHNOLOGIES

A. SOME FEATURES SHARED BY ALL EMERGING TECHNOLOGIES INCLUDE

- High Potential: Opportunities for both people and businesses may be greatly enhanced by taking use of emerging technologies due to their promising future.
- Uncertainty: Due to the novelty and immaturity of these technologies, their long-term potential and the difficulties they may face are open questions.
- Rapidly Evolving: New developments and improvements are being developed rapidly in the realm of emerging technologies. It might be difficult to keep up with these developments.
- Interdisciplinary: Combinations of engineering, computer science, and biology are common in cutting-edge technological developments. This multidisciplinary character provides intriguing new avenues for discovery and development.
- Disruptive: New technology may cause major changes in established markets and business procedures. This may open up several possibilities, but it also carries certain dangers and difficulties.

1. APPLICATION OF THE NEW EMERGING TECHNOLOGIES

A. Numerous sectors are making utilization of the emerging technologies due to their adaptability and versatility. New technologies and their potential uses are shown by the following

- The fields of healthcare, banking, and transportation are all making use of AI to aid in decision-making and streamline administrative tasks.
- Logistics, manufacturing, and agriculture are all making use of IoT to better track and regulate their operations and allocate their limited resources.
- Blockchain is being used in industries as diverse as banking, supply chain management, & healthcare to facilitate trustworthy and transparent dealings.
- Immersive environments made possible by augmented and virtual reality (AR/VR) are improving the user experience in fields as diverse as entertainment, education, and healthcare.

LITERATURE REVIEW

(Chitechi & Otanga, 2020) Currently, IT is the driving force behind most service delivery. There have been both beneficial and bad effects of technological progress on people's daily lives. New technologies now permeate almost every facet of modern life. Many new technologies have emerged as a result of technological progress, including mobile computing, cloud computing, ubiquitous computing, social media, data science, data analytics, and the Internet of Things (IoT), the network of many objects, computing devices, as well as sensors and actuators that are making the world a smarter place to live.

This paper explores recent IT developments, analyzes how technologies are changing, estimates the extent to which they will affect businesses and governments, and concludes with a framework for where IT professionals might go from here.

(Lee et al., 2019) Airbnb, Uber, and other startups have shown how artificial intelligence (AI) can be used to create novel business models, and these changes are reshaping whole sectors. However, it's possible that our current level of knowledge about how this cutting-edge technology affects the development of new kinds of businesses is inadequate. Although many businesses are becoming susceptible to new rivals who are better prepared with AI technology, this research seeks to look forward and examine how AI technology might be used to generate innovation in business models. This research provides insight into the contextual aspects that shape business model innovation sparked by artificial intelligence. An introduction to AI, current problems in AI development, and an explanation of how AI is changing business paradigms are presented in this paper. The potential effect of AI is seen in this case study of two organizations that have reinvented their business models using AI. Additionally, we reframe the process of "AI-based business model" creation and address how CEOs may foster a creative AI-based culture. When AI is used by businesses, it may lead to revolutionary new products, services, and ways of doing business that have the potential to alter the global marketplace.

(Parry & Battista, 2019) The media often exaggerates the possible effects of technology progress on the workplace, although it is sometimes difficult to tell the difference between the two. This research looks at the facts around the effects of new technologies on the workplace and the HR department's ability to aid workers and businesses in adapting to these shifts. Artificial intelligence and robots are two examples of cutting-edge technology that businesses are reportedly using to automate mundane jobs and enable humans to focus on higher-level work. Furthermore, new technologies are being employed to facilitate the adoption of more adaptable forms of employment including remote work and contracting. Human resources professionals, however, will face a number of new challenges as a result of this trend. They will need to find ways to address the potential negative effects of growing connectivity as well as precarious working arrangements on the employee wellbeing, and they will also need to assist workers in switching their skills to compete in a future of work.

(T & Rao, 2018) The goal of this research is to analyze how financial institutions' use of innovative technologies affects their clientele. What their level of technological literacy is and how they use it. Customers of several Reserve Bank of India-regulated banking sectors provided the data for this analysis. A pie chart and basic percentage breakdown will be created. Respondents claim that thirty samples are taken and analyzed. The results imply that clients use the bank's ATMs on a regular basis. As a result, financial institutions should promote their online banking options. Finally, the research is one of the few to examine the evolution of the banking technology.

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(No et al., 2018) Finding complementing developing computer technologies is essential in light of the ever-increasing pace at which technology is being upgraded. The purpose of this article is to identify the most significant technologies in India by highlighting future computing innovations, rising trends, and industry buzz. Local vendors are entering the market, providing services in new technologies like the Internet of Things (IoT) and robotic process automation. Products and services based on automation as well as machine learning. The Internet of Things & its applications, as well as machine learning, are two such technologies that have the potential to radically alter existing systems and pave the way for the development of entirely new ones. Market adoption of technologies with an innovation trigger is slower to develop. The primary goal of this study is to lay forth a vision for the future smart environment that may aid in the consolidation of existing knowledge and the development of new avenues of inquiry for future academics in the area.

(Rotolo et al., 2015) New technological developments are receiving increasing amounts of attention from the policymaking community. A agreement on what makes a technology 'emerging,' and robust research designs which operationalize fundamental theoretical notions, are missing from the study of emerging technologies. In order to address this knowledge gap, the current research seeks to define "emerging technologies" and establish a connection between this conceptual work and the creation of a framework for the operationalization of technological emergence. Combining a familiarity with the word and, more specifically, the notion of "emergence," with an examination of significant innovation studies that address questions of definition in the context of technical "emergence" yields the final definition. The resultant definition highlights five characteristics present in the development of cutting-edge technology. The first is extreme novelty; the second is rapid expansion; the third is unity; the fourth is significant influence; and the fifth is uncertainty and ambiguity. The specified features are then used to develop an intricate framework for operationalizing emergent technologies. We do this by identifying and reviewing key empirical approaches (primarily in the scientometric domain, but not exclusively) for the detection and study of emerging technologies (such as indicators and trend analysis, co-word analysis, citation analysis, overlay mapping, as well as combinations thereof) and elaborate on how these can be used to operationalize the various attributes of emergence.

(Singh, 2015) More study of the technical aspects of Big Data and its significant issues from an IT viewpoint is required. In this article, we look at where Big Data is now, what problems it faces, and what new directions the field is taking. We highlight crucial discoveries and the changing technological environment. We predict that innovative, long-term business models, such as "Analytics-as-a-Service", will emerge during the next decade.

(Nicz et al., 2015) Major shifts have occurred in small and medium-sized businesses (SMEs) as a result of globalization, Knowledge-based Economy, and "Information and Communications Technologies" (ICT). In today's digital economy, cutting-edge information networks and innovative ICT resources power business and provide workers with exciting new possibilities. This article aims to examine the effects of recent technological shifts on small and medium-sized enterprises (SMEs). The effects of globalization on small and medium-sized enterprises are discussed in the first section of the study. The study then moves on to discuss crucial elements of implementing cutting-edge ICT in SMEs in the next section. In addition, several facets of the work system's transformation due to the use of innovative ICT solutions have been examined. This report also takes into consideration the significance of virtualization and mobile technology in SMEs. Knowledge-based business operations may benefit from the suggestions that emerge from this analysis.

(González-Valiente, 2015) In this work, we conduct a bibliometric analysis of the literature on the "Information Technology" (IT) within the subject of Educational Sciences in an effort to foresee forthcoming trends in this area of study. The Electronic Reference Information Center (ERIC) database is mined for information, with indications of author productivity, journal impact factor, and term co-occurrence analysis applied to the findings from 2009 to 2013. Computers & Education, the "Turkish Online Journal of Educational Technology" (TOJET), and the aforementioned Canadian writers have all been lauded for their contributions. Information technology, international relations, foreign nations, educational technology, technological integration, and student perspectives are among the most often used phrases. The studies conducted here seem to be mostly qualitative in nature, with computers and the Internet being the most investigated forms of technology. The most significant shift in the field is the growing influence of information technology on classroom practices at the university level.

(Holtgrewe, 2014) This article discusses recent technical and organizational shifts in the ICT industry and evaluates the implications these changes may have for employees and labor unions throughout the world. It discusses the recent trends in value chain restructuring and how they connect to the convergence of the telecommunications as well as information technology, the rise of ubiquitous computing, "clouds," & "big data," and the potential of crowdsourcing. The study relies on sector studies and technological projections conducted by organizations like the European Union and the Organization for "Economic Co-operation and Development", as well as a few state entities. Recent studies of ICT workplaces and value chains are used to evaluate these forecasts, with the goals of highlighting impending and existing issues for employees and unions and proposing potential research approaches.

(Beumer & Bhattacharya, 2013) In the past decade, the nanotechnology has entered policy arena as the technology that is both promising and dangerous, and it has also joined the development agenda with a Janus-like dual nature. What are the implications of nanotechnology for a developing nation like India? This research takes a quantitative and qualitative look at the progress, debate, and radio silence surrounding nanotechnology in India. In India, the government has taken the lead in developing the nanotechnology sector. Increases in scholarly output, international partnerships, and the number of participating institutions may all be directly attributed to government funding. This development is based

mostly on basic research & public research institutions. The level of industry engagement and patenting activity is modest and just getting started. Concerns were voiced in the Indian setting with regards to resources, capabilities, commercialization, risk management, and equitable sharing of rewards. Despite widespread support for nanotechnology, controversial topics like ethics and public engagement tend to be avoided in discussions about the field.

(Mujumdar, 2006) In the last decade, nanotechnology has joined development agenda with its Janus-like dual character, having entered the policy arena as a technology that is both the promising and harmful. For a country like India, which is still in its developmental stages, what impact does nanotechnology have? This study analyzes nanotechnology in India quantitatively and qualitatively, including its development, discussion, and radio silence. The government of India is spearheading the country's nanotechnology industry's growth. Government support has been linked to growth in academic production, international collaborations, and the number of participating institutions. Basic research and public research institutes are the main pillars of this progress. Industry participation and patenting activities are low to begin with. Resources, commercialization, capabilities, risk management, and fair sharing of profits were all cited as areas of concern in Indian context. Despite nanotechnology's enormous popularity, conversations often sidestep touchy subjects like public outreach and ethical considerations.

(Southwood, 1992) The article examines and assesses the major problems, trends, and future direction of the "Modern Information Technology Management", and gives an analytical exposition, critical perspective, and integrative conclusion on the trends as well as best practices in the Information Technology Management. It's often agreed that IT is vital in propelling both economic and technical development. Managers often use cutting-edge tech in order to affect shifts in company culture, employee dynamics, external partnerships, or other elements of the corporate landscape. Businesses, governments, and academic institutions all benefit greatly from the use of information technology (IT) to increase output and efficiency. Computers, network and communications technologies, data, and essential software applications all contribute to an organization's IT infrastructure and, in turn, its IT value. Modern technical progress and globalization are propelled by IT because of the improved efficiency and effectiveness it brings to the administration of information. Planning, assigning resources, coordinating, and guaranteeing results that better processes are achieved are all examples of the kinds of management operations that go under the umbrella phrase "technology management."

CONCLUSION

The world is evolving at a breakneck pace, and new technologies are rapidly altering the ways in which we engage with it. New product development, client interaction, and internet use are all favorably adapting to the digital age. As corporations and individuals, it is our responsibility to monitor developments in this area of technology. There is little doubt that new technology will dramatically alter business and culture by 2023. In order to maintain a competitive edge, businesses need to be nimble and adaptive enough to take advantage of these emerging trends. This study provides an in-depth analysis of the many new directions being taken by the fast developing field of information technology. Since IT

professionals are the ones who really make technological progress happen, it's crucial that they have a clear idea of where the field is headed so they can steer it in the right direction. Cloud computing, mobile computing, social networking, and the Internet of Things are just a few of the recent technological developments that are explored. Cloud computing enables us to pool and share computing resources like servers and applications through the web. With the help of mobile computing, users are no longer tied to a single location, but may instead access their data and information whenever and wherever they like. With the help of social media, it's now easier than ever to get to know individuals from all over the globe. Almost every form of company is establishing a presence on the social media in order to engage with clients, since social media is presenting a new trend to do marketing and advertising compared to the traditional medial. The Internet of Things (IoT) makes it possible for computers and chips to be integrated into a wide range of physical items, allowing for the sharing of data between them using preexisting network infrastructure. This article demonstrates how the numerous factors contributing to the fast evolution of technology are shaping future role of IT specialists.

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