

TRANSFORMATION OF CONTEMPORARY LEADERSHIP IN 21ST CENTURY

Abstract: Leadership is the capacity to express a vision, adopt the principles of that vision, and cultivate an atmosphere in which all individuals can achieve the organization's objectives and their requirements. Typically, leaders are individuals who hold positions of authority, influence, power, and responsibility at the highest echelons of an organization. In 21st century, the successful utilization of technology and contemporary lifestyles has become an essential component of leadership. Technology has a tremendous impact on all facets of human existence, and it is revolutionizing how contemporary leaders connect, manage everyday affairs, and conduct their businesses. There are many challenges and gaps of true cognizant and contemporary leaders, whether in politics, religion, organization, business, education, or institution-everywhere in era of technological advancement. Contemporary leaders can make educated judgments, generate innovation, and remain ahead of the competition by leveraging technological improvements, which also boosts efficiency and productivity. The emphasis is on how organizations, agencies, businesses, industries, or nations can get effective leadership style to achieve their mission and vision. Great leaders globally recognize the significant role of technology that plays in personnel management. It may facilitate team development and oversee work across all channels and locations globally. The normal workplace is no longer as conventional as it once was due to technological advancements and globalization. Leaders need to focus on building a positive and inclusive work environment that values respect, trust, and collaboration. They should not ignore or tolerate toxic behaviors, address them promptly and constructively, either through coaching, mentorship, or, if necessary, disciplinary action. In this era encouragement is essential for leaders to reflect on their own leadership styles and identify areas where they can improve. Contemporary leaders must embrace a more purposeful management approach in order to achieve success. This involves adopting novel tactics and concepts while simultaneously remaining adaptable and receptive to change. In 21st century an organization usually faces challenges in creativity and transformation and contemporary leadership approaches tend to be more appropriate, particularly in a global setting. This is an analytical research where a thorough examination of contemporary leadership approaches and transformation will be evaluated in 21st century where 4th Industrial Revolution (4IR), smart and advanced technologies play a crucial role.

Key Words: Digital and smart technology, Transformation, contemporary leadership, 4IR, AI

1. Introduction

Leadership is an indispensably imperative instrument to the leaders to steering the development of an organization, or a country or the globe as a whole in a relative dealing with associated many factors in every era during the growth of civilization. Thus the significance and necessity of leadership are becoming increasingly recognized in the contemporary period. Nevertheless, this is entirely inaccurate. They are the individuals who motivate and inspire others with their behavior, style, and abilities. Contemporary leaders are surrounded by individuals who share their passion, drive, and thought process. They have a genuine following, team members, and lovers; nonetheless, they are not motivated by fame or popularity. Their vision and objectives are evident, and they were implemented without the necessity of obtaining special privileges, rights, or positions. Modern leadership is not contingent upon one's status or position [3]. Typically, they remain as an executive senior to whom the subordinates are compelled to adhere, even if their views and vision are in stark opposition. Contemporary leaders can make educated judgments, generate innovation, and remain ahead of the competition by leveraging technological improvements, which also boosts efficiency and productivity. The emphasis is on how organizations, agencies, businesses, industries, or nations can get effective leadership style to achieve their mission and vision. Great leaders globally recognize the significant role of technology that plays in personnel management [5]. It may facilitate team development and oversee work across all channels and locations globally. The normal workplace is no longer as conventional as it once was due to technological advancements and globalization. Contemporary leaders must embrace a more purposeful management approach in order to achieve success. This involves adopting novel tactics and concepts while simultaneously remaining adaptable and receptive to change [6]. Today an organization usually faces challenges in creativity and transformation and contemporary leadership approaches tend to be more appropriate, particularly in a global setting. Usually leaders can handle chaotic or stressful situations with emotional intelligence because they understand their own and others' complicated

sentiments. Emotionally savvy leaders can motivate their teams, negotiate client and workplace relationships, and avoid antagonism. Empathetic leaders do 40% higher in staff engagement and decision-making coaching.

In 21st century leaders are surrounded by individuals who share their passion, drive, and thought process. They have a genuine following, team members, and lovers; nonetheless, they are not motivated by fame or popularity. Their vision and objectives are evident, and they were implemented without the necessity of obtaining special privileges, rights, or positions. Modern leadership is not contingent upon one's status or position. Typically, they remain as an executive senior to whom the subordinates are compelled to adhere, even if their views and vision are in stark opposition. Modern leaders do not require any particular tie or relationship to a position or social status in order to influence and persuade individuals to believe in them [1]. Successful and contemporary leadership does not require a high position, titles, chief, manager, or senior executive. The world of brain workers is currently being transformed by Internet of Thing (IoT), Artificial Intelligence (AI), Machine Learning (ML), Deep Learning (DL), big data, blockchain, cloud computing, platform economy offers, big data, and judgments based on algorithms. Even auditors, lawyers, engineers, medics, data scientists, and computer scientists are impacted by the complex situation. In reality, leadership was predicated on exceptional proficiency a few decades ago. This emphasis is gradually waning [7]. The management of relationships will be the primary responsibility of future leaders. In order to facilitate collaboration and relationships within teams and departments, future leaders must establish a constructive, creative tension. Thus, a modern leader who possesses the necessary capacity to communicate, persuade, relate, motivate, and influence is the most suitable and precise candidate to effectively manage human resources in a manner that benefits both the firm and its people [2]. Contemporary leadership works when people use their influence, concept, vision, and effect. If we compare millennial leaders to Gen Z, it may place even greater emphasis on protecting their mental health and achieving a healthy work-life balance. However, future leaders will foster 'psychological safety' within their teams, creating an environment where members feel secure enough to think openly, communicate honestly, and raise concerns. Trust enhances team performance, leading to faster results and lower costs. These leaders demonstrate trust in their teams, which in turn encourages more direct communication and boosts efficiency and productivity.

In 21st century smart technology and digitalization simplifies processes, improves communication, and expands markets, giving leaders an edge. Intelligent and modern CEOs may use AI, IoT, ML, and big data for predictive analysis, data-driven decision-making, and automation. These breakthrough technologies benefit many industries, enterprises, service sectors, and aspects of life. Tech is becoming more beneficial in many fields [8]. Technology is causing a digital and intelligent revolution. Intelligent leaders must adapt to new technology. If not, they cannot connect and lead globally. AI and robots' ability to automate occupations, enhance decision-making, and simplify processes will alter the workplace in the coming decade. AI-powered gadgets can analyze massive data sets, identify patterns, and make precise predictions. This enables leaders to make data-driven decisions, thereby improving competitiveness, efficiency, accuracy, cost, and idea generation [9]. AI may also automate ordinary tasks, freeing up time for subordinates and men to focus on strategic and creative work. This shift in focus boosts innovation and personnel satisfaction. AI allows customized team experiences, like learning and development programs and career routes. AI and other modern technologies can help leaders build a future-proof, sustainable, adaptable, flexible, and purpose-oriented company that thrives in the rapidly evolving military domain and future battle-space. AI lets pupils customize their education [10]. AI technology may also boost education and teacher skills. Large financial organizations use AI to simplify investment. Aladdin, BlackRock's AI engine, helps clients make financial decisions [11]. In 4th Industrial Revolution (4IR), technologies can lead to enhanced quality of life through improvements in healthcare, education, transportation, living, distribution, and other necessary services. The integration of 4IR technologies can stimulate economic growth and national development by fostering innovation, creating new markets, and improving overall economic efficiency [14]. According to 4IR Energy Solutions, it is also opening the ways to address social inequalities by providing access to education, healthcare, and economic opportunities for all [15].

In 21st century super-intelligence, hyper-intelligence, or superhuman intelligence is a hypothetical agent with intelligence much beyond that of the most gifted and bright human mind. Agents' intelligence can alternatively be called "super-intelligence". Artificial general intelligence research may enable innovative software to self-reprogram and improve. The enhanced software would be even better at self-improvement, causing recursive self-improvement. If it has an intelligence explosion, its cognition may rise exponentially and exceed humans. This circumstance was called "singularity" by science fiction author Vernor-Vinge. Since the limits of intelligence and super-intelligent computers are unknown, the technological singularity is unforeseeable and unfathomable. In hours,

ML or AI can build tens of thousands of harmful substances. Thus, complex technology or super-intelligent robots may arise shortly. Leaders of the future must be ready [12]. In the tech-driven era, good leadership requires strong beliefs. Leaders need technology, but they also need honesty, agility, and balance. Transparent communication builds trust and teamwork. To encourage ideation and feedback, leaders must be honest with their teams, stakeholders, and themselves. Adaptability and flexibility is key to success [16]. Leaders must adapt to evolving technologies [17]. It enables leaders to capitalize on emerging opportunities, adopt innovative ideas, and effectively manage challenges in a rapidly changing industry. Effective leaders achieve a harmonious equilibrium between the human and technological components. Although technological utilization is essential, it is equally critical to value interpersonal relationships, emotional intelligence, and empathy. It is undeniable that the workplace has undergone a significant transformation in recent years as a result of the proliferation of new technologies. Nevertheless, there are several instances in which traditional leadership yields superior results, such as when stability and order are essential, or during a period of crisis. The fundamental principle is that a leader must be capable of adapting to the circumstances and use the appropriate theories, tools, tactics, and approach to complete the mission.

In 21st century contemporary leadership involves an individual's efforts to persuade, influence, motivate, and inspire others. It differs significantly from traditional leadership, which relies on titles, positions, or ranks. Command is restrictive and can cause conflict or objections among those who are not convinced, inspired, or affected by the vision, aims, ideas, and perspectives. A contemporary leader who effectively inspires others by clearly elucidating the advantages and drawbacks of actions, strategies, and plans in a practical, on-the-ground manner is more likely to be accepted and followed, as followers or team members can connect with and be convinced [13]. Unlike influence, control, command, and order, modern leadership depends on communication, interaction, attention, and caring. It is clear that modern leadership is not based on rank, position, or title; rather, it is a comprehensive approach, lifestyle, attitude, and conduct. Essentially, it is less about titles, command, and control, and more about the leader's dedication, collaboration, and relationship with team members, along with accepting their perspectives and ideas. This happens when the leader demonstrates the right traits and attitudes to influence and inspire. The professional attitude and personal growth of employees are equally vital to contemporary leaders, alongside job achievement or output [2]. Leaders must foster a caring and attentive connection with their staff. Therefore, modern leadership is a holistic lifestyle where individuals develop and refine their behavioral skills to motivate and inspire their team members to emulate them. While command, control, authority, and ranks/titles offer opportunities to lead, they are far removed from the qualities of a modern, effective leader. In reality, contemporary leadership is less about rank and more about building relationships, committing to the team's goals, and coordinating efforts while also valuing and respecting each team member's unique perspective. This is when a leader possesses the character traits and demeanor necessary to make an impression. It is a great transformation of leadership and contemporary leader takes into account not just the output or completion of tasks, but also the professionalism and growth of their personnel. Leaders should treat their teams with the utmost respect and care. So, it's a way of life where one develops and improves their behavioral and action abilities to inspire and encourage team members to follow them. Having a position of rank or title, along with the powers of command and control, does provide you the chance to lead, but it won't get you very far in the current leadership game. In this article, the author sets out to delve into the history of technology, its growth and difficulties, the principles held by contemporary leaders, the resources at their disposal, and the evolution of contemporary leadership transformation in 21st century. In this study literature, history, different approach of leadership will be evaluated along with depiction of toxic and successful leadership traits.

2. Literature and Methodology

Leadership is a complex subject area where McShane and Glinow (2005) have divided this subject into few categories like, Transform, Implicit, Contingence, Competent and Behavioural [90]. Organizations may focus on both transformational and transactional leadership styles and usually choose the transformational leadership to be efficient and effective. There is a contradiction within research where some believes transformational leadership is a further extension of charismatic leadership, whereas others believe both charismatic and transformational are discernible. Transformational leadership is based on behaviors and it leads the process of strategic organizations. Leaders move organizations forward out of creation of community structure of common values [91]. Few contemporary writers have encouraged leaders to become more knowledge seekers while adapting the transactional leadership style which solves analytical problems [92]. On the other hand few writers have argued that transformational leadership append transactional leadership through few modifications introduce better leaders [93]. On the other hand Mazdar (2001) describes transactional and transformational leadership is two different leadership theories, however an individual leader has the ability to possess traits from both theories [94]. According to Aaltio-

Marjosola and Takala (2000) charismatic leadership are exhibiting signs of incompetence and subordination [95]. Reason to accept charismatic leadership based on distress but the leaders are highly qualified. Again, charismatic leaders are inaccurately formed and suitable to portray in common media like television, radio and newspaper [96]. Situation based contingency leadership plays a major role within tasks and leaders. There are outside factors heavily pressure the organizations than internal in contingency leadership. 21st century leadership styles have affected the design of the modern organizations. Intervention has severely influenced employee involvement, network structures and total quality management [97]. Therefore, any adjustments for 21st century leadership patterns have to accomplish while aligning a strategy for organization development. According to Kotter (2008) good leaders always reward success and do not halt until a problem occur. They fore-see and take precautions to tackle possible problematic areas which could occur in future [98].

Scholars and researchers have attempted to compile a literature review on leadership style and organizational transformation [99]. There are authoritarian, transformational, laissez-faire, servant, transactional, democratic, strategic, bureaucratic, consultative, and participative leadership have been recognized as change management accelerators in various literature reviews [101]. Leadership is essential for the successful implementation of beneficial organizational transitions, as demonstrated by subsequent research [102]. Leadership is the process of leading and guiding subordinates down the intended route that the leader has established to achieve organizational objectives [103]. The significance of company culture and environment in shaping leadership behaviors is paramount. According to Schein (2010), organizational culture is the collective set of values, beliefs, and assumptions that influence organizational behavior [104]. Conversely, organizational climate pertains to employees' perspectives and attitudes on their workplace (Schneider, Ehrhart, and Macey, 2013) [105]. Aycan et al. (2000) underscore the fact that the leader-subordinate relationship is influenced by the cultural environment, which in turn influences the acceptance of specific leadership styles. Einarsen et al. (2007) [106] also underscore the significance of differentiating between ineffective leadership and harmful leadership. Ineffective leadership is defined by a lack of expertise or aptitude to achieve desired objectives, whereas harmful leadership involves purposeful activities that cause harm to others. Schneider et al. (2013) [112] stressed the crucial role that leaders play in the establishment of corporate culture and environment, highlighting the necessity of ethical and inclusive leadership practices [113]. The literature employs a variety of concepts to delineate the detrimental characteristics of leadership, such as petty tyranny (Ashforth, 1994, 1997), supervisory abuse (Tepper, 2007), unpleasant leadership (Bligh, Kohles, Pearce, Justin and Stovall, 2007), and poisonous leadership (Einarsen, Skogstad, Lesethand Aasland, 2002; Einarsen, Aasland and Skogstad, 2007) [115, 116] bullying (Rayner & Cooper, 1997) [117] and toxic leadership (LipmanBlumen, 2005) [117]. On the other hand, there are certain disadvantages of contemporary leadership in comparison to traditional leadership. Leaders in the present day may not possess the same amount of power or respect. Contemporary leaders may induce followers to have less motivation. Some circumstances may render contemporary leadership approaches less successful. A larger focus may be placed on individual accomplishments than on team performance. Nevertheless, there are certain benefits to employing a contemporary leadership paradigm in comparison to older leadership approaches. Compared to previous leaders, contemporary leaders are often more concerned with delivering outcomes [107].

It suggests that they prefer to execute methods that benefit their companies over maintaining the status quo. Contemporary leaders often value teamwork above individual achievement [108]. This may result in a more cohesive and productive team, as well as an increase in creativity and innovation. Continuous learning is frequently a priority for contemporary leaders, both for themselves and their staff [109]. This enables them to remain informed about the most recent trends and advancements in their respective sectors, as well as to acquire new skills and expertise. Contemporary leaders generally endeavor to empower their staff rather than merely dominating them. Therefore, this may result in enhanced productivity, increased job satisfaction, and motivation. In general, contemporary leaders are receptive to change, both in their approach to tasks and in the objectives they establish for their businesses. This enables them to capitalize on fast changing settings and swiftly adjust to new conditions and possibilities. This study will evaluate the available literature on the notion of virtual teams and modern/advanced technologies and e-leadership [121]. The objectives of leadership have remained consistent, as indicated by recent research on e-leadership. However, the new e-leader is required to execute these objectives electronically on computer-mediated virtual teams that are geographically and temporally dispersed [122]. The objective of this investigation is to examine and assess the global culture, social change, globalization, traditional, modern, toxic, and successful leadership styles and practices, as well as organizational behavior, in order to provide a global perspective on contemporary leadership. This will be achieved by analyzing primary and secondary information,

reviewing books, journals, and other research materials, and incorporating the ideas and thoughts of contemporary scholars. In this study researcher has decisively reviewed and explored the leadership roles in this modern era and their contribution to strategically developed contemporary organizations to avoid toxic environment. Moreover, investigations has been carried out to endorse leadership styles and level of efficiency relating to strategic development of organizations and advanced technological innovation in the era of 4th industrial Revolution or 4IR [114]. Arguments and evaluation will be based on how leaders' efficiency, activity, style, action and their reliability affect organizations.

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3. In 21st Century Influence of Technology and Consequence of Globe

Our ability to transmit and receive information enhances our abstract thinking, which distinguishes humans from animals. Our superior intelligence propelled us to the top. As it advances slowly, human technology would have taken one million years to become economically practical enough to support an additional million people compared to a few hundred thousand years ago [18]. The 5,000 BC Agricultural Revolution shortened this period to two centuries. In the post-Industrial Revolution era, it further dropped to a mere 90 minutes. Radical changes to the world as we know it could result from technological advancements such as the development of super-intelligent (SI) machines. In 2014, the idea of superintelligence was examined concerning the potential effects of creating a machine more intelligent than humans on society. These discussions are filled with data, numbers, and studies from various disciplines, creating a comprehensive view of the super-intelligent future and how we might reach it. Nonetheless, the current focus is on the state of existing technology. We have already succeeded in creating machines capable of learning and reasoning by processing information input by humans [19]. For instance, automatic spam filters that protect critical messages and prevent bulk emails from clogging our inboxes are a great example. Nevertheless, this is still a significant distance from the "general intelligence" that humans possess and that has been the objective of AI research for many decades [20]. Additionally, the creation of a super-intelligent machine that can learn and function autonomously may yet be decades away. However, the area is advancing rapidly, and a machine of this nature may be available sooner than anticipated. Its intelligence has the potential to influence our lives significantly, and it may even pose a threat, as it may be too sophisticated for us to disable in the event of an emergency [21].

Technology can be developed by mimicking human intelligence; however, imitation appears in many forms. Therefore, although some scientists support the creation of a computer that replicates humans through artificial intelligence, others favor a precise duplication of human biology, which could be achieved through methods like Whole Brain Emulation (or WBE). Most of humanity's most significant discoveries have been made either by individual scientists reaching a goal before others or through extensive global collaboration. A single super-intelligent computer could likely be created if a group of scientists quickly identified solutions to the challenges hindering AI and WBE. This is due to the competitive nature of the field, which may necessitate that such a group operates in secret. Before we become frightened by the imminent machine-led catastrophe, let us examine the potential for the advancement and use of general intelligence technology. The widespread manufacture of robots capable of executing jobs that presently need human hands and minds is likely to be facilitated by the greater availability of technology and the declining prices [22]. This implies that machines will not only replace the whole human labor but also be easily replaced. The economy, as well as our lifestyles and wants, will undergo a profound transformation as a result of a robotic workforce. As machine labor becomes the new, cheaper standard, the wages of workers will decrease to the extent that no human will be able to sustain themselves on a salary [23]. Furthermore, a small number of employers in the mechanical industry would accumulate enormous quantities of money. This, however, returns us to a prior debate, as the eventual destination of the money is contingent upon whether a single, exclusive group creates SI or arises from a slow, communal process. Most individuals would be restricted in their ability to generate income if the former is accurate, since they would be forced to rely on their savings or pensions or rent houses to others [24]. However, the growth of SI is associated with a multitude of safety risks, which, in the most extreme situations, might result in the annihilation of humanity. While it is possible to establish specific protections by examining the reasoning behind the SI we develop, this alone will not be enough.

4. Industrial Revolution and Consequences of World

The global economy is being basically transformed as we articulate, by breakthroughs in advanced and smart technologies, cutting across the physical, digital, smart, biological and intellectual worlds. Emerging technologies such as automation, robotics, AI, ML, DL, IoT, big data, blockchain, are changing the way the world operates [25]. The industrial revolution continues worldwide and is an ongoing process. It may be explained by transition from hand production to machine based manufacturing, profoundly transformed societies and had global consequences. It led to increased production, lower prices, and economic growth, but also resulted in social problems like worker exploitation and environmental degradation. Innovations like the steam engine, power loom, and mass production techniques revolutionized industries and spurred further growth. It significantly widened the gap between industrialized nations and the rest of the world, contributing to the rise of Western dominance [26]. In 21st century AI is set to reshape and disrupt service models and products. Although technological progress mainly enhances manufacturing efficiency, innovative and disruptive service models crafted through big data analysis of individual client needs rather than company demands will reshape the service industry [27]. The timeline of industrial development is outlined below.

INDUSTRY 1.0: INDUSTRIALIZATION: Industry 1.0 signifies the commencement of the industrial era in the 18th century, which was distinguished by the initial application of machinery to manufacture products and services and known as 1st industrial revolution. The rise of railways, coal mining, and heavy industry was among the most significant advances. The steam engine was the most significant invention of this age, since it led to social turmoil and the displacement of numerous workers. Steam engines were initially implemented in industries in Great Britain during the late 18th century, which facilitated industrialization by offering a versatile energy source that could be utilized in any location [28].

INDUSTRY 2.0: ELECTRIFICATION: In the late 19th century, the 2nd industrial revolution was initiated with the introduction of electrification. During this period, the assembly line, which was first employed in the automobile sector, evolved into the industrial counterpart of the steam engine, facilitating the automation and acceleration of manufacturing processes. In Industry 2.0, the division of labor is evident in the sequence of particular tasks that workers undertake, which has resulted in the emergence of serial manufacturing. Additionally, the initiation of international shipping technologies, which included aircraft, enabled the first-ever automated transportation of products between continents [29].

INDUSTRY 3.0: DIGITALISATION: In the 1970s heralded the beginning of the third industrial revolution, which was characterized by the development of electronics-driven automation and information technology. Personal computers and the internet became widely adopted, which greatly integrated technology into the workplace.

Consequently, labor procedures were increasingly automated, and access to information grew worldwide. Furthermore, robots displaced human labor in mass production. This tendency, which was escalated throughout Industry 4.0, was already imminent at that time [30].

INDUSTRY 4.0: AUTOMATIZATION: Industry 4.0 involves integrating cyber-physical systems (CPS) into manufacturing and logistics, and using the IoT to connect everyday products in an advanced technological era and that is known as 4th industrial revolution or 4IR. Services in industrial processes affect value generation, business models, downstream services, and work organization [31]. CPS refers to network connections between people, machines, products, objects, and ICT systems with inclusion of smart technology like AI, IoT, ML, DL, big data, blockchain, etc. In the future, there will be over 100 billion connected gadgets. AI in the service business distinguishes the 4IR from the 3IR.

In industrial production, the term automatization is defined by four fundamental components: 1) Machines manage production operations. The future of production will be mostly automated, with people only contributing on select occasions, thanks to intelligent technology. This tendency is exemplified by the ‘smart factory’, which is characterized by minimal or no human presence [32]. 2) Industry 4.0 is fundamentally characterized by real-time production. An intelligent machine determines the production facility's optimal usage capacity. In the production process, lead times are brief, and standstills, excluding those caused by technical defects, can be prevented. The coordination of resources, information, and commodities is precisely tuned to meet the demands of the value creation chain. Stocks are maintained at a minimum; nevertheless, the machine automatically purchases additional supplies when the quantity necessary for manufacturing falls below a certain threshold. The same idea applies to finished items; the machine produces under the total demand and incoming orders, hence minimizing storage expenses [33]. 3) Decentralization of production: The machine is largely self-organized, including a network of manufacturing units. In addition to material planning, order handling is entirely automated [34]. 4) Customized manufacturing, even down to individual units: In the future, robots will be capable of responding to specific consumer requirements without requiring human changes, provided that they are within defined parameters. This reduces the need for changeover times. The smart factory integrates supplementary components or, in an optimally distributed process, modifies specific production steps to align with client requirements and preferences [35].

4IR is a neologism describing rapid technological advancement in the 21st century [36]. Mastering the Fourth Industrial Revolution" was the 2016 theme of the World Economic Forum Annual Meeting [37], in Davos-Klosters, Switzerland. In this era fundamental shifts are taking place in how the global production and supply network operates through ongoing automation of traditional manufacturing and industrial practices, using modern smart technology, large-scale machine-to-machine communication (M2M) [38], and the IoT. This integration results in increasing automation, improving communication and self-monitoring, and the use of smart machines that can analyze and diagnose issues without the need for human intervention [39]. It is characterized by the fusion of digital, physical, and biological technologies, including AI, robotics, IoT, biotechnology, and nanotechnology [40]. According to Infosys BPM, it is transforming manufacturing and production through Industry 4.0, leading to increased automation, optimized supply chains, and personalized products. As per ScienceDirect.com, 4IR technologies are crucial for achieving universal energy access and net-zero emissions goals, enabling the integration of renewable energy, smart grids, and energy storage solutions [41]. 4IR is prompting a transformation in the education sector, requiring the integration of digital literacy, innovative teaching methods, and public-private partnerships. 4IR technologies are revolutionizing healthcare through personalized medicine, remote patient monitoring, and advanced diagnostic tools [42]. It aims to harness the power of emerging technologies to create a more prosperous, equitable, and sustainable future for all.

In 4IR there are distinct improvement of production process components, such as machinery, operational resources, software, and others, enabled by their autonomous communication through sensors and related technology networks [43]. 4IR aims to lower production costs, especially in staff planning, thereby enhancing the company's competitive position in international competition [44]. It transforms how we live, work, and relate to one another by leveraging advancements in digital, physical, and biological technologies. It seeks to integrate these technologies to create a more efficient, productive, and sustainable future, while also addressing social and economic inequalities. Famous robotics and AI examples include ‘smart factories’, driverless automobiles, delivery drones, and 3D printers, which can build very complex objects from a template without human intervention. Popular service models include Facebook, Amazon Mechanical Turk, Uber, Airbnb, car sharing, Spotify, and Netflix. Sharing services alone will increase sector turnover twentyfold in ten years, according to studies [45]. However, 4IR has been designed with smart technology to streamline processes, reduce costs, and optimize resource utilization in various industries, leading to increased productivity and efficiency. It is nurturing the materialization of new industries and job

opportunities, particularly in areas like AI, robotics, biotechnology, smart shipping, smart transportation, smart healthcare, and data science, requiring a skilled workforce. The World Economic Forum declared that, 4IR technologies can play a vital role in addressing environmental challenges by promoting sustainable energy solutions, optimizing resource management, and reducing pollution [46]. A key aspect of 4IR is a human-centered approach, focusing on enhancing human well-being, preserving cultural heritage, and promoting social values [47].



Figure 1: AI and the future of life and working relationship between human and robots [4, 55]

5. Impact of AI in the Era of 4IR in 21st century

In 21st century for an extended period, artificial intelligence has been ubiquitous. Its advantages are consistently improving our everyday life. The technology is employed in internet search engines to offer ideas and in robots that welcome customers at shopping centers [48]. Currently, AI systems imitate human analysis. It denotes the capacity of a computer program to learn and think. AI may be defined as any system that involves a program executing activities that are generally associated with human intellect. Numerous advantages have been realized in a variety of sectors as a result of the advancements in AI [49]. Currently, the availability of handy technology is ubiquitous, and forecasts are getting more accurate. Additionally, procedures are efficient and effective. AI optimizes disaster recovery and data backup solutions to guarantee uninterrupted company operations. The necessity of a strong business strategy, a clear vision, and good IT management persists, despite the perpetual evolution of the essential components of successful technology and IT leadership. Furthermore, the need for a well-informed approach to risk, compliance, outsourcing, and AI remains unwavering [50]. Digital existence is augmenting human potential while disrupting traditional human activities. Over fifty percent of the global population currently utilizes code-driven systems, which provide referable possibilities alongside unprecedented obstacles [51]. To guarantee uninterrupted corporate operations, AI optimizes disaster recovery and data backup solutions. The necessity of a strong business strategy, a clear vision, and good IT management persists, despite the fact that the fundamental elements of successful technology and IT leadership are always changing. Additionally, the need of a well-informed approach to risk, compliance, outsourcing, and AI remains unwavering [52]. Experts anticipate that networked AI will improve human efficiency, but it will also compromise human autonomy, agency, and capacities [53]. Computers can outperform humans in complicated decision-making, learning, reasoning, pattern recognition, visual perception, speech recognition, and language translation. Intelligent systems in cities, cars, buildings, utilities, agriculture, and commerce may save time, resources, and lives and provide inhabitants a more customized future [54]. The potential of AI in healthcare is exciting, with uses ranging from patient diagnosis and treatment to enhancing the quality of life for the elderly. In particular, they were enthusiastic about the prospect of AI participating in a comprehensive public-health program that would make use of the potentially massive quantities of data on topics as diverse as diet and individual genomes that may be collected in the years to come. AI might facilitate much-needed changes to formal and informal education.



Figure 2: Role of AI in education system [57] and revolution of future education system [58]

As a result of integrating AI and the Internet of Things into our daily lives, our society is undergoing noticeable changes. Machines driven by artificial intelligence will soon be able to take our pulse in hospitals, and online retailers will soon be able to tailor their product recommendations to each shopper. These are just a handful of the many ways in which AI improves human lives. In the future, AI will offer much more. More and more businesses, nonprofits, and government agencies will start using this game-changing technology to streamline and enhance every aspect of human life as time goes on [56]. AI can streamline and accelerate operations in the community, society, country, and globe in a variety of ways, including by improving workplace efficiency, helping people make better decisions, and offering direct support. AI has the potential to assist by identifying and resolving issues that individuals may not be able to recognize or resolve on their own. Some individuals, however, do not recognize the benefits of artificial intelligence because they believe that it would result in people losing their jobs and becoming less intelligent. The most significant advantages of artificial intelligence are its speed, precision, efficiency, and scalability. A significant portion of the current work will become unavailable over the next 25 years due to the 4IR's profound impact on various industries, service sectors, and other areas. We need to have a comprehensive understanding of the effects that these shifts will have in every aspect of our lives, including educational and scholarly establishments [59]. These days, grads face a world where technology has changed everything. There are several advantages and disadvantages that traditional educational institutions face as a result of AI, the internet of things, machine learning, big data, cloud and edge computing, and social media. As they plan for life beyond high school or college, traditional educational institutions worry about their students' futures, especially in terms of employment. The widespread influence of AI-powered contemporary technology is changing the world in fundamental ways, and as a result, ideas like 'post-work' are starting to shape our era. Because information technology (IT) is now the main driver, the skills needed in this period are very different from those in the Third Industrial Revolution. The artificial intelligence and other smart technologies industries are projected to reach a value of fifteen trillion dollars in the US during the next seven years. There will be mass layoffs of those who have had conventional schooling but lack the necessary abilities [60]. Conversely, the next few years will see the establishment of millions of positions that require modern and high-tech skills [61].

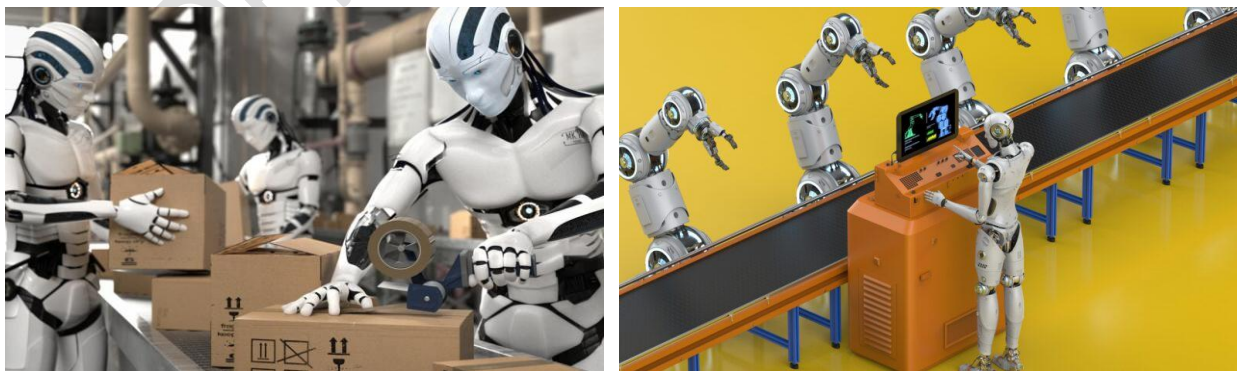


Figure 3: In future robots will work with human [62] and technological revolution [63]

In the present day, the integration of networked gadgets into our daily lives is revolutionizing computing through advanced technologies like IoT. In order to provide an ever-expanding array of services and human living, these

gadgets collect and analyze data. The intelligence of other technologies is enhanced by the IoT, which enables automation, customization, and remote control through networks of Internet-connected sensors [64]. Concurrently, the significant privacy concerns that IoT technology generates may limit its wider adoption. In the future, the IoT will have a greater impact on technology, and a greater number of objects will be connected to the Internet. It is an analytical piece that endeavors to demonstrate the influence of IoT on technology and gadgets in a variety of sectors, such as our everyday lives, enterprises, and industries. Furthermore, it offers suggestions and challenges for getting the most favorable result within the present term [65]. Organizations can leverage the vast amount of data generated by billions of internet-enabled sensors worldwide to enhance operational safety, monitor assets, and minimize the need for human intervention [66]. IoT has the potential to improve the quality of our daily lives, increase output, and improve the efficiency of companies. Concurrently, the Internet of Things will have a substantial influence on other technologies, and a higher number of items will be connected to the Internet in the future. Now, the global number of active IoT devices exceeds 17 billion, and more than 85% of firms have improved their technical efficiency by integrating IoT technology into their products. As its impact on the daily lives of humans continues to expand, the IoTs has been referred to as ‘the next wave of innovation’. In the 21st century, the IoT is essential for the functioning of large-scale corporations and service sectors. Furthermore, it has been proven that the IoT significantly impacts corporate operations management and decision-making [67].



Figure 4: Benefit of AI in automobiles [68] and in healthcare [69]

The manner in which we conceptualize and debate technology has undergone an equally seismic transformation in the present era, concurrent with its explosion. AI technology is sufficiently advanced to replicate the human brain or cognition. It allows computer programs to learn from experience through algorithmic training and iterative processing. Daily, AI is growing more and more imaginative and valuable in practically every aspect of life. Artificial intelligence has become a significant concern in the contemporary period due to its ability to influence the job market and overall employment. The majority of people believe that the widespread adoption of AI would result in employment losses for individuals [70]. However, there is a growing consensus among humans that AI can enhance the adaptability, creativity, profitability, productivity, and accessibility of their jobs. A more competent, diversified, and imaginative economy has the potential to be the product of AI [71]. The educational system, which encompasses the curriculum, teaching practices, and various other educational components, needs to be revised. The whole educational system will be transformed by the integration of modern and advanced technologies into our mass or general education system. It must be both sustainable and meaningful in the long term. The researcher has conducted an analytical study in which they have attempted to evaluate the future of mankind and the diverse uses of AI and robots, with a special focus on the global education system. In the past several years, there has been significant advancement in the disciplines of AI, robotics, and machine learning. Automation and the broad use of AI can help companies, firms, or industries enhance their production or service by reducing errors, improving quality, speed, accuracy, and integrity, and, in most cases, achieving goals that are beyond human capabilities [72]. Recent advances in artificial intelligence and similar automation technology have rekindled concerns about job losses and increasing inequality. Even in wealthy nations, this is a common issue. Because their worldwide competitive advantage rests on the availability of large quantities of natural resources and labor, developing countries and emerging market economies have every reason to be more worried than high-income countries. In a world that is both labor-intensive and quickly globalizing, there is a risk of even further loss of control due to the winner-take-all dynamics brought about by new communication technologies and the falling returns on natural resources and labor. This might derail the tremendous development of the last half-century. On top of that, it might make it harder for communities all around the world to overcome poverty and injustice.



Figure 5: AI is a game-changer in the manufacturing industry [73], and AI will boost the agriculture sector [74]

Future threats from AI may be rather substantial. The global economy will shrink in size and the demand for human labor will decrease as a result of AI, IoT, ML, and automation. The purpose of AI in education is not to replace human instructors with humanoid robots. Nevertheless, the objective is to enhance the efficiency and effectiveness of the education system by utilizing computer intelligence to assist students and teachers. The educational experience will be significantly influenced by the numerous AI tools that will be used in the future. Again, who knows? Perhaps in the future, emotional interactions between humans and robots will be feasible. There were previously other films that explored this concept. Nevertheless, there is a significant amount of ambiguity surrounding the potential technological development scenarios and their implications [75]. AI in education is not about the incorporation of humanoid robots as instructors to replace human educators. However, the primary objective is to enhance the efficiency and effectiveness of the education system by utilizing computer intelligence to assist students and instructors. There will be several AI technologies available to the school system in the future, which will significantly influence the educational experience. Once again, who knows? Perhaps in the future, emotional interactions between humans and robots will be feasible. Several films have already explored this concept. However, the potential technological development scenarios and their implications are still subject to a significant degree of uncertainty [76]. Conversely, AI can generate substantial advantages for both industrialized and developing nations, regardless of their income options [77]. The potential of AI to provide new and creative work possibilities is also there, which might result in a more efficient and productive economy [78]. Employment that generates is often eliminated by any technology. It is a fact that the world will grow more complicated and self-centered in the future as a result of the progress of AI. Additionally, there will not be sufficient jobs to accommodate everyone, and employment will not be guaranteed. Therefore, it is imperative to provide the younger generation with useful skills and modern technical education. Consequently, it is imperative to provide a sensible remedy to the existing education system [79].



Figure 6: Cyber and network security [80] and AI will change the whole finance sector [81]

In 21st century AI has the potential to be both knowledge-driven and data-driven. Knowledge inference and its application to all settings are the next-generation Artificial intelligence innovation. The emergence of new fields of research and the extension of present standards to facilitate future networks may be a consequence of numerous critical problems with machine learning in 5G and future networks [84]. Therefore, in order for AI to be implemented by a significant number of individuals and to improve, a robust security guarantee is required. Given that AI will be implemented in the transportation and healthcare sectors in the years ahead, it must be presented in a

manner that fosters trust and comprehension, as well as safeguards human and civil rights [85]. Conversely, policies and procedures ought to address privacy, security, and ethical considerations. Consequently, global communities should collaborate to advance AI in a manner that is advantageous to mankind. It appears to be more unlikely that all human jobs would be destroyed as AI is increasingly integrated into the workforce. Rather, a significant number of experts anticipate that the workforce will grow more specialized in the future. These vocations will require a greater degree of what automation is now incapable of providing, including qualitative abilities, problem-solving, and creativity. In essence, the sector will always require personnel; but, their obligations may evolve as technology progresses. A greater number of these occupations will need a more advanced technical skill set, and some skill sets will be more in demand.



Figure 7: AI-Singularity [82], and that could destroy the earth [83]

6. Problem of Toxic Leadership

Toxic behavior, thinking and conduct not only impedes individual development but also impedes the team's capacity to collaborate and create. Leaders must cultivate an environment of delegation and trust in order to combat toxic leadership. The unfortunate fact of the workplace is that there are bad employers. This issue can only be accurately evaluated by individuals who have encountered such leaders. Nevertheless, this piece might serve as an illustration of such leadership. It appears that toxic leaders are exceedingly prevalent in businesses of all sizes [123]. Additionally, there is some information that elucidates the reason for this. Recently, researchers at Ohio State University conducted an experiment in which they assigned leaderless groups to collaborate on a shared goal. They discovered a concerning tendency when they saw the groups' interact. The majority of organizations opted for members who were overconfident and self-centered to assume leadership positions. Groups frequently mistake overconfidence for leadership skill in the absence of any evidence of competence. Such confidence is especially prevalent among toxic narcissists. Higher productivity and a healthier work environment are the outcomes of granting employees' autonomy and allowing them to take responsibility for their jobs.

6.1 Defensiveness and Ego Centricity. Leaders cultivate a culture of fear and silence by refusing to acknowledge mistakes or accept feedback when they get defensive. Ego-driven CEOs often prioritize their interests over the team's collective achievement, resulting in inadequate collaboration and stifled creativity [124]. This detrimental conduct undermines morale and undermines trust within the organization. In order to mitigate toxic leadership, leaders should prioritize humility and self-awareness. Leaders may establish a work climate that is supportive and growth-oriented by accepting criticism, acknowledging faults, and putting the team's needs over their own.

6.2 Inconsistent Communication. A lack of clear and consistent communication by leaders results in confusion and misalignment across the organization team [125]. Rumors, distrust, and diminished productivity may result from this absence of openness. In the event of uneven communication, team members are unable to comprehend their duties or expectations and remain unaware. Toxic leaders may suppress facts, report selectively, or alter their viewpoints without notification or justification [126]. Leaders should prioritize transparent and forthright communication in order to combat toxic leadership. Consistent updates, clear objectives, and an open-door policy may foster trust, collaboration, and a healthy work atmosphere.

6.3 Favoritism and Unfair Treatment. A contentious and toxic work environment is cultivated by leaders who exhibit favoritism toward particular persons or groups. Decreased morale and fragmented team cohesion are the consequences of such behavior, which undermines objectivity, equality, and justice [127]. Resentment and decreased engagement are the results of select employees being consistently favored while others are neglected or abused. Leaders must prioritize equity and impartiality in order to mitigate toxic leadership. They are required to offer equitable resources, recognition, and opportunities to everybody. A pleasant, inclusive work environment that fosters development, cohesiveness, and productivity may be established by leaders who consistently treat all individuals equally and without bias.

6.4 High Employee Turnover Rate. Employees are inclined to experience feelings of dissatisfaction, frustration, and disengagement when leaders establish a toxic work environment. The high turnover rate is a direct consequence of the toxic culture, which attracts talented employees to pursue job opportunities elsewhere. This volatility undermines the organization's productivity and general stability [128]. Toxic executives sometimes disregard their role in staff turnover or view it as inconsequential. Leaders should prioritize the promotion of employees' happiness, career advancement, and well-being in order to mitigate toxic leadership. Creating a friendly and enjoyable work environment is beneficial for retaining talented employees and reducing turnover.

6.5 Resistance to Change. Growth, innovation, and flexibility are impeded when leaders resist or block fundamental organizational changes. Toxic leaders often cling to outdated methodologies because they fear change may erode their authority or dominance. This opposition leads to a work atmosphere that is both sluggish and antiquated [129]. Progress may be impeded, innovation can be restricted, and employees who are hungry for positive change might be frustrated by toxic leadership. In order to address this issue, leaders should foster a culture of continual improvement and welcome change. Leaders may cultivate creativity, enhance productivity, and establish a good, forward-thinking work atmosphere by promoting adaptation and flexibility.

6.6 Lack of Vision or Clear Direction. Staff members become perplexed and apprehensive when leaders fail to communicate the organization's goals and objectives effectively. This results in employees feeling lost and disengaged, as they struggle to understand the purpose and direction of their job. Toxic leaders often overlook the importance of strategic planning and long-term vision, instead prioritizing short-term gains or personal interests. Leaders must establish and effectively communicate a clear vision to their team to combat toxic leadership [196]. Ultimately, organizational success may be facilitated by the provision of a sense of purpose and strategic direction, which can encourage people, establish alignment, and assist in the attainment of shared objectives.

6.7 Not leading by example. Leaders' credibility is undermined, and their team members' confidence is diminished when they fail to implement their policies. Toxic leaders frequently establish unreasonable demands for their staff and exhibit a lack of professionalism, responsibility, or honesty [130]. This dishonest behavior cultivates a sense of animosity, disdain, and diminished motivation among team members. In order to fight toxic leadership, leaders must demonstrate the attributes they wish to see. Leaders may foster a healthy work atmosphere, promote passion and commitment from employees, and build trust by demonstrating the values, attitudes, and work ethic they demand from their team.

6.8 Suppressing Feedback and Avoiding Accountability. When leaders dismiss or discourage constructive feedback from team members, it hampers growth, creativity, and innovation in collaboration [131]. Overall success is enhanced by cultivating a good work atmosphere. The firm is more likely to experience growth when employees are more productive and inventive, and they are more inclined to share ideas. In contrast, a toxic work environment can result in severe issues that could potentially result in the demise of a firm. It is crucial to acknowledge that it might be challenging to perceive the broader context in one's everyday activities. Similarly, leaders may overlook indicators of potential problems. Some indications that leaders should be aware of in order to cultivate and preserve a healthy workplace are identified by members of the Forbes Business Council. Modern executives can learn valuable lessons from these experiences, helping them prevent the dynamics of toxic workplaces and stay vigilant.

6.9 Poor Communication. A poisonous atmosphere is typically the consequence of inadequate communication between management and staff. Leaders generally conduct quarterly meetings during which all individuals have the opportunity to express their ideas or apprehensions regarding the current state of affairs [132]. It was a real success, despite the fact that it required some time to establish and develop confidence. However, the lack of effective communication between leader and employees can lead to major frustration; poor communication is rarely

deliberate. In most cases, breakdowns in communication can be traced back to poor communication skills or just not having the right communication tools [133].

6.10 Fear of Speaking Up. Toxic leaders usually try to control every aspect of their team's work. They try to micromanage tasks, leaving little room for employees to take initiative or make decisions. This can lead to a stifling environment where creativity and innovation are suppressed. And it creates fear [134]. Fear of speaking up and fear of recrimination indicate a toxic environment. Leaders should remember that they are not perfect and that problems are common. The sooner they identify issues, the better they can prevent toxicity. Additionally, leaders should seek specific feedback.

6.11 Selfish Goals. The initial step for leaders is to assess their present surroundings. The primary distinction between a boss and a leader is that a poisonous workplace is typically the result of or perpetuated by management. A suitable beginning point for change symptoms is when management's priorities are selfish, with limited concern for the team's mental well-being and motivation [135]. Toxic leaders are usually reluctant to accept feedback or criticism, additionally they highlight their lack of self-awareness and refusal to change. A toxic leader might prioritize their own career progression over the comfort of their team, and ultimately potentially leading to burnout and high turnover rates within the department [136].

6.12 Mental Health Decline. A decrease in the mental well-being of their team is one indicator that leaders should monitor. A recent poll conducted at a business organization revealed that more than 50% of employees reported a shift in their job emphasis during the past year [137]. Additionally, the poll demonstrated that several employees worldwide are currently placing their mental health above other elements of their lives. Consequently, leaders must take into account the introduction of new initiatives and programs that are designed to promote the mental health of their personnel [138].

6.13 Disengagement. Disengagement is the act or process of ceasing to participate in a particular activity, circumstance, or organization. A decrease in motivation or passion for job obligations sometimes indicates an underlying issue that might impact workflow and overall team productivity. Acknowledge the poison and confront it directly [139]. Toxic leadership notably contributes to employee disconnection. Studies indicate that toxic behaviors from leaders can lead to increased turnover, dissatisfaction, and a lack of commitment, ultimately impacting organizational performance [140].

6.14 High Turnover Rate. It is a critical indicator of a toxic work environment that management should be aware of. Frequent departures may indicate inadequate support, bad management, or a hostile workplace. Toxic leaders create a climate of fear and mistrust, where employees hesitate to voice concerns or offer suggestions, hindering collaboration and innovation. The negative work environment created by toxic leaders can drive employees to seek other opportunities, increasing turnover and absenteeism [141]. In order to solve this, leaders should prioritize open communication, offer anonymous feedback alternatives, and actively pursue the identification and resolution of the root causes [276].

6.15 Constant Team Conflict. Ongoing disagreement among team members is a strong sign that a workplace is poisonous. This type of conflict arises when employees are unable to convey their issues transparently and candidly. However, this hidden animosity frequently persists, leading to passive-aggressive acts. Over time, these processes establish the optimal circumstances for the development of toxicity [142]. Toxic leaders often create a climate of conflict within their teams due to their unconstructive behaviors and dysfunctional management styles. This can manifest as increased struggle, fear of retaliation, and a lack of trust and cohesion, eventually hindering productivity and team performance. They often ditch team members against each other, creating an aggressive environment where teamwork is replaced by enmity and disbelief [143].

6.16 Hyper-Competitiveness. Hyper-competition in a work environment can be defined as an environment where employees are constantly pressured to outperform each other, often to the detriment of collaboration and teamwork [279]. The presence of excessive competition in the workplace is indicative of a toxic atmosphere, since it frequently demonstrates a lack of collaboration and friction among employees. Leadership may not be properly cultivating a collaborative and cohesive work atmosphere when workers perceive themselves as always competing [144]. Toxic leadership and hyper-competitiveness are entangled traits that can cruelly damage teams and organizations. Toxic

leaders frequently foster a ruthless environment where employees are ruttet against each other, and success is prioritized over well-being. This can lead to a reject in morale, productivity, and trust among team members.

6.17 Lack of Collaboration and Communication. Poor teamwork and restricted open communication are indicators of a toxic work environment. Employees tend to become disengaged and reluctant to express their thoughts or take risks when they perceive that sharing their ideas or worries may put them at risk. In order to resolve this issue, executives should monitor symptoms of low morale and decreased productivity that are the result of fear-driven decision-making and closed mindsets [145].

6.18 Chronic Complainers. Leaders should monitor employees who habitually complain, as they can negatively impact the organization by spreading negativity, reducing morale, and decreasing productivity. These employees contribute to a toxic work environment, harm the company's reputation, and hinder progress by dismissing solutions to contributions [146].

6.19 Quiet Quitting. Leaders must acknowledge that a toxic work environment is often marked by silent resignations. This conduct results in employees performing only the minimum amount of labor, disengaging with the company's principles, withholding their opinions, and lacking enthusiasm for their job. When individuals cease to demonstrate initiative, give ideas, or strive for greatness, it suggests that the team's culture is toxic and detrimental [147].

6.20 Low Morale. Leaders need to monitor employees' morale closely as an indicator of a toxic work environment. Ignoring low morale can result in decreased productivity, talent loss, and further decline in team spirit. Leaders need to promote open communication and involve employees in identifying and addressing underlying issues. Investing in a healthy workplace culture ultimately fosters long-term success and boosts employee satisfaction with well-being [148].

6.21 Lack of Zeal. A toxic work environment is frequently indicated by a lack of excitement among employees. This circumstance occurs when employees perceive themselves as wandering without a clear plan or defined direction. When people are uncertain about what to achieve or understand that their objectives will not be realized, their enthusiasm for their job decreases, and they are more inclined to seek better chances elsewhere [149].

6.22 No Desire to Take Risks. When there is inadequate incentive to undertake measured risks, a poisonous culture may emerge. This is typically the case when the founder retires or when corporate bullies are not penalized. It is essential to recognize and encourage risk-taking, regardless of the outcome. The use of 360-degree evaluation procedure guarantees that all workers' perspectives are taken into account and that bullying is addressed [150].

6.23 Contempt. Contempt in leadership, characterized by disdain and disrespect, and that can wear away trust, confidence, damage morale, and ultimately deter team output. Contempt creates a toxic environment; as a result trust and open communication become impossible. When leaders show disdain, it can dishearten team members and lead to decreased efficiency, output, and commitment [151]. Treating a subordinate or colleague with contempt goes beyond just criticizing them for not following rules. One indicator of contempt is the balance between reprimands and praise. If interactions primarily involve reprimands, it suggests a problem with wrong [152].

6.24 Gossip. Gossip in the break room may be particularly poisonous, frequently originating from an individual's dissatisfaction with a team member. They prefer to avoid confrontation by whispering behind their backs, rather than immediately confronting the matter [153]. Gossip erodes associations, breeds negativity, and hampers productivity and innovation. Leaders should prioritize open communication, transparency, and professionalism to foster a healthy, friendly, and considerate workplace. When leaders gossip, they lose the faith of their team members, who may then question the leader's honesty and judgment [154]. A culture of gossip can lower morale and generate a negative and scratchy work environment.

6.25 No Workplace Boundaries. Toxic workplaces often accept and even encourage ignoring healthy boundaries. Whether in-office or remote, the common outcome is a tendency to prioritize work above all else [155]. Be alert for Friday afternoon emails that include tasks with Monday deadlines, for example. Training managers at all levels on this is essential to prevent ongoing issues of toxicity [156]. Modern leaders need to place and preserve healthy workplace boundaries, not avoid them completely. Clear boundaries are necessary for effective and successful

leadership, team well-being, and productivity. Contradictory or absent boundaries can direct to mystification, anger, and a perception of nepotism [157].

In 21st century to prevent toxicity in organizations, leaders should focus on fostering a positive work environment that emphasizes respect, empathy, and transparent communication. Promoting teamwork, celebrating achievements, and offering growth opportunities can significantly help reduce toxicity. Clear policies on harassment, bullying, and acceptable behavior must be communicated clearly to all staff, including consequences for violations, to ensure a safe and protected workplace. Establishing confidential channels for employees to report toxic behavior is essential. Furthermore, offering counseling services and support networks can assist employees in managing the emotional impact of a toxic work environment. Toxic environments typically arise from poor leadership. In all organization, goals should be clear and well circulated as clear goals provide a baseline against which to measure progress and evaluate success. This also allows contemporary leaders to identify areas where the team is excelling and areas that may require further attention. Moreover, contemporary leaders should also allow for flexibility and adaptation as needed. Sharing goals helps the team understand the rationale behind any changes and adapt their approach accordingly. Providing leadership development programs can help managers acquire the necessary skills and knowledge to foster a positive work atmosphere. Good leaders should set an example, ensure fairness, and encourage respect and teamwork. Regularly collecting employees' feedback via surveys or anonymous suggestion boxes can reveal hidden problems and highlight areas for improvement. This allows organizations to address toxic behaviors quickly. A leader should be transparent in their communication on the business, the team, and their own problems. Clearly articulate the value they feel they can provide to the firm, while also seeking feedback on other critical areas that may have been ignored. This encourages meaningful talks, allowing leaders to improve both personally and professionally while establishing a lucrative company organization. Transparent means honest and open with employees about the organization's vision, goals, performance, and decision-making processes. It also involves creating channels for open communication, connection, and regular feedback. Transparency fosters faith between leaders and their teams. When leaders are open, transparent, and honest, then employees are more likely to feel confident and positive in their leadership and the organization's direction. Leaders should be accountable for their actions and decisions through regular performance reviews, feedback mechanisms, and consequences for unethical behavior. Organization should invest in leadership development programs that focus on emotional intelligence, conflict resolution, and ethical decision-making. Leaders should be trained to understand and manage their own emotions and the emotions of others, fostering empathy and effective communication.

In 21st century leaders always play a crucial role in transforming abstract values into tangible actions that underpin the organization's core beliefs. The organization is distinguished in the marketplace, brand loyalty is enhanced, and trust is fostered when team members constantly exhibit these principles. One of the most effective ways to promote and reinforce these principles, both internally and internationally, is to lead by example. The recognition and appreciation of team members who exemplify these qualities contribute to the strengthening of commitment. Furthermore, it is important to engage in consistent dialogues on these principles in both official and informal contexts to underscore their significance and embody the. Leadership is the foundation for the consistent modeling of business values. It is important to include these ideals throughout all training sessions and communications. By consistently emphasizing and compensating employees who exhibit these values throughout customer contacts, their importance are reinforced, so facilitating their automaticity for the whole team. The mission and the products that leaders deliver must be tightly aligned with their fundamental principles. Leaders must recognize and incentivize team members who regularly exhibit the company's values throughout customer interactions. Simultaneously, they should ensure that individuals are held accountable when their conduct deviates from these principles. This fosters a culture that is founded on trust and integrity. Leading a team is more than only articulating values; it necessitates embodying them. The essential concepts of the firm heartbeat are established when these values are regularly displayed via actions, rather than as just words. Leaders should create a culture where employees feel comfortable sharing their thoughts, concerns, and feedback without fear of vengeance. Leaders need external coaches or consultants to provide support and guidance to those leaders who may be struggling with toxic behaviors. Organization need to keep records of instances of toxic behavior, including dates, times, and specific actions, to support any necessary interventions or investigations.

7. Leadership Challenges in the Modern Age

21st century is characterized by continuous upheaval, continual change, and fast technological advancement. Throughout this period, the globe has reached accomplishments that are unparalleled in history, significantly

influencing the way in which individuals work and live. The dotcom boom, technical advances, the advent of the smartphone, the emergence of digital platforms, social media, IoT, 5G/6G, AI, robots, machine learning, and blockchain have all transpired rapidly. These changes have significantly impacted organizational operations and global business practices. The proliferation and democratization of information have been significant outcomes. This flow of information has facilitated a more seamless and efficient global economy, in conjunction with the rapid speed of technology-driven globalization. Furthermore, the global economy's power landscape has been significantly altered by the fast expansion of developing economies such as China, India, Brazil, Indonesia, and Middle Eastern countries [158]. All of these shifts have significantly impacted the function of leadership in contemporary companies. Modern executives are confronted with the challenging task of guiding their firms through a global economy that is both intricate and constantly evolving. These strategic factors have an impact on not just whole nations, but also industries, marketplaces, sectors, and individual goods and brands. In order to effectively lead in this period, it is necessary to have a proactive approach to the management of change and its impact on the long-term performance of a company [159].

Kodak is a classic example of a firm that was pushed to depart the market due to its leadership's failure to adapt to the rising competition and change. Kodak, which was once the world's largest film manufacturer, was hesitant to fully embrace the digital shift because it was concerned that it would undermine its core film business. This hesitancy led to the company's downfall, since the need for film printing declined considerably during and after the digital revolution, requiring Kodak to exit from several product categories. In the same spirit, Nokia, Blockbuster, and Pets.com were all doomed as a result of their ongoing dependence on obsolete products in the face of market growth. Several such examples will probably. Our strategic approach and thought habits have been significantly influenced by the aforementioned company change. In these uncertain times, leadership becomes even more crucial. The subsequent section delves into the key challenges that 21st century leaders will face. Leadership is the process of encouraging individuals to do tasks or achieve goals that they may not be able to complete without the necessary motivation or skills. The criteria for individual fulfillment, goals, and expectations have undergone a significant transformation in recent years [160]. The aforementioned business transformation has had a substantial impact on our strategic approach and thought habits. Leadership becomes even more essential during these uncertain times. The following is a discussion of the primary obstacles that contemporary leaders encounter.

7.1 Geopolitical volatility: Geopolitical variables have the potential to have a quick and disastrous effect on organizations. Unstable geopolitical circumstances may discourage investments and exhaust financial resources. High volatility may also lead to more stringent government restrictions, which might elevate the expenses of conducting business in the impacted countries [161]. Given that these risks frequently exist outside of an organization's control, including government acts, laws, environmental challenges, trade policies, and labor markets, they provide an increasing challenge for leadership teams, among other things.

7.2 Technological disruptions: As 21st century has been characterized by fast technological disruption, with futurists and trend analysts claiming that such upheaval is now the standard. This disruption has had an impact on businesses in a variety of sectors and industries, including healthcare, manufacturing, and computing. Cloud computing and artificial intelligence have extended data-driven decision-making, while 3D printing is employed to make building materials, consumer items, complete houses, and artificial organs. Data mining businesses are developing DNA databases to facilitate personal identification. These are only a few instances of the ways in which technology has transformed the landscape in the modern age. Parallel to these technical advancements, there has been a significant increase in the number of startups and entrepreneurship. Startups are capable of revolutionizing company paradigms by using novel approaches to product development and sales, as they are both adaptable and inventive [162]. These advancements have a substantial impact on the commercial and operational models of organizations, as well as the manner in which customers are supplied in the current and future markets.

7.3 Economic and political uncertainty: Organizations must confront economic and political uncertainties after evaluating geopolitical risks at the country level. Companies prioritize stable environments, regardless of their size, as frequent labor strikes, societal unrest, and instability may significantly affect revenues, earnings, and investments. In the 21st century, the management of these uncertainties has emerged as a critical leadership task [163]. To develop an effective growth plan, it is imperative to consider economic and political risks, as enterprises strive for quicker expansion and startups want rapid scaling.

7.4 Shifting demographics: The emergence of dual-income and single-parent families, an older population necessitating bigger health and social services, and a wider variety of labor are all contributing to the enormous transformation of society that is being driven by global demographic upheavals. These changes result in oscillations in the demand for a company's products and services, which generates persistent demands to maintain the relevance of the company's offers [164]. Organizational leaders are confronted with the issue of maintaining profitability by effectively projecting these demographic patterns and adjusting their plans appropriately.

8. Collaborative Leadership: A Contemporary Approach in 21st Century

Common terms for collaborative leadership include shared, participatory, collective, cooperative, democratic, flexible, inclusive, roaming, diffused, relational, and post-heroic. The exact phrase is debated, but hierarchical leadership techniques no longer meet the complexities, quick changes, interdependencies, and numerous difficulties we confront today [172]. In the information era, motivating a more educated workforce to be devoted, self-reliant and to be lifelong learners will be difficult. Democratic "people-centered" leadership believes that in complicated times, answers are discovered in communities—group-focused organizations where "everyone can learn continually." Partnering, co-leading, and collaborating with followers are growing. As this leadership style becomes more popular, top-down command leaders are encouraged to become facilitators, stewards, mentors, designers, and teachers. They should guide, inspire, delegate, and serve. In the 21st century, this new paradigm is changing follower roles and organizational structures. Robert Greenleaf Center for Servant-Leadership booklet notes this shift: The ancient organizational pyramids of the nineteenth century are disintegrating, replaced with upside-down pyramids, circles, and connections [173]. Collaboration and reciprocal leadership define this transition process. This leadership style is more flexible and relationship-focused; therefore, we want to assist individuals in grasping its purpose and applying its ideas to their leadership circumstances. Progress combines past, present, and future. This knowledge provides a solid foundation for navigating tomorrow's uncertainties, as collaborative institutions have historically supported people and may help us shape the future together [174]. A key concept of collaborative leadership is that no one individual can address a group's complicated problems. Effective leadership in this situation requires principles that allow everyone to contribute and a process that draws forth the group's wisdom. These concepts should be based on the idea that individuals can solve their problems with knowledge and creativity. They encourage groups that operate together based on shared vision, ownership, and mutual support [175].

Natural sciences and history have shaped collaborative leadership. Instead of a mechanical cosmos where people obey instructions and repeat replies, we now understand how people, groups, and organizations work organically, systems-based, and dynamically [176]. This systems approach requires nonlinear, comprehensive, multifunctional leadership that emphasizes active involvement, open communication, constant learning, and relationship focus. Leaders create systems, institutions, and situations that encourage learning and engagement. Leadership entails establishing the appropriate patterns. The remark, 'we must be what we aspire to become, we must, at every step of the road, embody the future toward which we are aiming', reflects this feeling of authenticity and the capacity to fully embody the ideals of collaborative leadership. It is reminiscent of Mahatma Gandhi's conviction that leadership is fundamentally about personal development, as he famously stated, 'We must be the change we desire to see in the world...' Every individual has the potential to cultivate their leadership characteristics with the appropriate education, training, and comprehension. Given that these are the fundamental principles of collaborative leadership, what are the main activities or functions that leaders should implement? In essence, the functions of collaborative leadership entail the following: the recognition of significant developing trends that steer us in this direction; the adoption of a communal and reciprocal leadership paradigm; and the focus on purpose rather than strict definitions of leadership [408]. In this environment, each individual is accountable for their own education. Although change and adaptation are essential elements of a systems approach, some key concepts facilitate interaction and learning, which are essential for collaborative leadership. The following are a few essential concepts that leaders must adhere to.

8.1 Promoting. The concept of a single great man with all the solutions is replaced by a collective leadership approach known as Post heroics. Rather, it underscores a leadership strategy that is adaptive, dispersed, and shared. This viewpoint is predicated on the notion that leadership responsibilities are assumed by various persons in accordance with the context, necessity, and circumstances, and that all individuals possess leadership potential. Collaborative leaders cultivate settings that are friendly and open, which encourage initiative, allow information exchange, and appreciate the contributions of all individuals. At the same time, individuals are motivated to enhance their leadership skills and acquire new knowledge. Consequently, leadership is defined as the process of facilitating

the development and education of others. Leaders serve as community builders, establishing and maintaining a "safe place" that encourages individuals to develop genuine connections and explore their identities [177]. The emphasis is shifted from individual leaders to groups, communities, or organizations. At times, the nominal leader may even be imperceptible.

8.2 Structuring. A learning environment is established by an organization or group that prioritizes the learner, fostering continuous self-reflection and progress. The culture of these organizations is deeply rooted in the importance of essential behaviors such as active listening, cultivating open-mindedness, requesting constructive feedback, sharing ideas, and viewing disagreement as a learning opportunity. Those who are most closely associated with the difficulties or possibilities are urged to develop new solutions and contribute. In order to do this, the organization must function as an inquiry-based community, accepting the notion that no one possesses all the answers and that all individuals are capable of constant learning. As they engage in mutual learning, they cultivate qualities such as collaborative ownership, shared knowledge, mutual trust, and open communication [178]. This atmosphere is sometimes referred to as "community of commitment," in which individuals continue to acquire the ability to learn collaboratively. Consequently, participants are prepared to leave their comfort zones and assume the risks associated with change management.

8.3 Supporting. Relationships and interconnection are essential components of collaborative leadership. Covenant partnerships are founded on mutual responsibility and trust, and they are characterized by core values like as honesty, respect, high standards, and the exercise of personal choice. This method concentrates on the enhancement of the capacity of both individuals and groups to embody these values, employ interdependence, and perceive conflict and diversity as chances for growth and innovation. Developing deeper connections also entails the establishment of a shared vision that motivates individuals to collaborate in pursuit of shared objectives, priorities, and a focus that extends beyond just self-interest [179]. These shared visions and values function as guiding principles, facilitating self-organization and management, and enabling the completion of activities without the need for control or formal policy processes.

8.4 Fostering Shared Power. In order for leadership to be really collaborative or shared, it is necessary to disperse authority and ownership throughout the whole business. Shared power entails that all individuals are accountable for learning, making decisions, and leading. Consensus is frequently employed by teams and groups to make decisions. Personal integrity and peer agreements are essential for accountability and responsibility. Partnerships and coalitions are established as individuals collaborate to achieve shared objectives, resulting in lateral networks of mutual influence. This might be seen as a flattened, flexible structure that is characterized by partnerships, self-regulation, and interdependence, and in which various interactions are working. This is characterized as a lattice or grid in Re-inventing the Corporation, where power is concentrated in the center rather than at the top [180]. Hierarchical structures are replaced by interconnected networks that have overlapping, changing, and fluid boundaries. A framework that resembles a web encourages the highest level of empowerment, engagement, and involvement.

8.5 Practicing Stewardship and Service. Stewardship is essential to reciprocal or shared leadership, since it redefines hierarchical leadership by prioritizing service above authority. It is predicated on the fulfillment of the needs of others, rather than the exercise of power, privilege, or control. Stewardship prioritizes service above self-interest, and it emphasizes collaboration over patriarchy or hierarchy, as well as empowerment over reliance. As a result, the leader's responsibility is to serve rather than to exert control. In his renowned essay 'The Servant as Leader,' this concept is also articulated as 'wanting to serve first,' implying that a conscious desire to serve leads to the aspiration to lead [195]. The genuine evaluation of collaborative leadership is if the needs of individuals are satisfied. Individuals may build a community that is founded on shared objectives and accountability when they are treated with respect and appreciation as partners.

8.6 Valuing Diversity and Inclusiveness. To promote mutual respect, trust, and open communication, leaders need to accept and appreciate individual differences. Embracing diversity provides the fertile ground for building relationships, partnerships, and collaborative networks. Crucially, acknowledging differences is essential for community success. Respecting each person's viewpoint and personal style encourages the sharing of ideas and talents, fostering collective learning. This inclusive approach also helps turn followers into stakeholders and promotes shared ownership. Recognizing that diversity boosts creativity and excellence is vital [181]. Genuine diversity can be cultivated by respecting varied viewpoints, encouraging open-mindedness, engaging in dialogues, and listening attentively empathically.

8.7 Committing to Self-Development. The shift towards collaborative or shared leadership fundamentally involves personal transformation, driven by a commitment to self-improvement. The desire to serve stems from a need for personal healing. Recognizing that one's inner life influences leadership—either positively or negatively—can foster authenticity and humility within the leadership journey. As leaders focus on their own learning and growth, they set an example for others to pursue their own personal mastery proficiency.

8.8 Improve Team Alignment. In 21st century contemporary leaders must improve team alignment and collaboration. Now the question is what are the impediments that prohibit their teams from collaborating successfully and being in agreement? It is possible that they do not allocate sufficient time to commemorate minor accomplishments, or they lack transparency and candor. Organizational success is contingent upon the enhancement of team alignment, which enables leaders and teams to make difficult decisions with assurance and maintain a positive attitude throughout crises. Trust-building is particularly critical during challenging periods and is one of the three fundamental components of improved cooperation and collaboration. Team members may act out of fear, which might jeopardize success if trust is not established. Additionally, the team is more likely to be in alignment when it adheres to common ideals, including responsibility, mutual respect, and honesty [182]. Teams should adhere to a framework that comprises three primary components or levels in order to achieve successful, organized communication.

9. Collective Leadership: Another Modern Approach in 21st Century

The establishment of an environment that fosters collective leadership starts with a shared vision that is supported by specific values or beliefs that impact individual behavior. For those who intend to implement this leadership style, it is imperative to engage in some form of introspection. Authentic communal or shared leadership is impossible to attain without this internal effort. This internal process starts with one's ideals and convictions. Those who engage in shared leadership believe that each individual can lead themselves. Additionally, they believe that the group members possess the necessary abilities and resources to complete tasks, rather than relying on a single leader. As a result, the function of formal leaders is not to direct or command, but to establish a framework that empowers individuals to assume responsibility for their actions. The group can take responsibility and develop their abilities to interact, deliberate, plan, and act by distributing or sharing the "power" connected with their position. These leaders are capable and willing to transfer their positional authority to the maximum extent feasible, so keeping their power while sharing their official authority [183]. They may substitute the necessity for positional leadership with the joy of observing the group develop into a learning organization or community. Modeling behavior is a critical component that follows the establishment of a common vision. Integrity is obvious in the manner in which they structure and respond to the group's progress, as seen by their vision of shared leadership. This confluence of practice, vision, and modeling provides members with the assurance that leaders actually "walk their talk," demonstrating their confidence in the collective and individual actions. Collective and reciprocal leaders prioritize the development of the environment as a learning environment. This may entail the following: Establishing expectations for success. Secondly, motivating the group to challenge conventional methods and take chances. Additionally, they encourage members to challenge their assumptions on their capabilities in the absence of explicit direction from a positional authority.

The establishment of a safety net facilitates risk-taking by fostering an environment in which members feel comfortable challenging, making personal decisions, and pursuing common objectives. In this setting, individuals exchange their liberty for safety. Members must engage in responsible and accountable decision-making in order to advance toward shared leadership. Open sharing of information ensures that all individuals have sufficient knowledge to make well-informed decisions. It is not necessary for leaders to serve as the primary sources of information; rather, members frequently rely on one another and their capacity to collect precise data, which promotes interdependence and self-reliance. Successes enhance members' belief in their ability to affect outcomes, which is facilitated by the acquisition of power, choice, and knowledge. These interdependent ties facilitate the acceptance of a variety of preparedness levels for shared responsibility and explain the allocation of skills within the group. Additionally, they demonstrate to their members that they can rely on and learn from one another. These frameworks facilitate efficient task cooperation [184]. Tech leaders should learn context switching. They must swiftly switch from sales to product development, creating value and analyzing new information. Prioritization and smooth transition between tasks are crucial. Groups must be reassured that emotions of uncertainty or fear are common throughout the transition to this new strategy. Confusion, irritation, worry, insecurity, and a need for

leaders to interfere are among the most prevalent emotions. This transformation transforms the duties of leaders into those of facilitators, supporters, advisors, or educators. In the end, members develop better ideas through learning, which fosters enthusiasm, ownership, confidence, and competence.

10. Principles of Contemporary Leadership in Modern Age

Professor Peter Drucker famously observed, “Wherever you see a great firm, someone once took a daring decision.” Leadership in modern age requires several brave choices. These times are harder, but positive leadership may have a stronger influence. Only the two World Wars have caused stronger headwinds for global business. It takes bravery, conviction, mental toughness, focus, and a strong sense of purpose to lead a company through such volatility. Leaders cannot advance alone, a pertinent reality now. Open-minded, collaborative, charismatic leaders can connect varied viewpoints and lead teams with varying motives and requirements to achieve corporate goals. Seeing business executives as figureheads, chiefs, or commanders is fading. Charisma and vision are still necessary but insufficient. In today's changing corporate world, leaders must be able to switch from commander-in-chief and mentor to high-performing teams or individuals [171]. Leadership adaptability and effectively leading across generations, cultures, attitudes, and motives are act as key. Contemporary leaders should delegate more. They can solve leadership difficulties more efficiently and enable colleagues to take more responsibility. Team trust is also built via delegation. Proactive leaders create objectives, timetables, and deadlines to keep themselves and their teams on track. Constant distractions might cause people to lose focus on long-term and short-term goals. They often become distracted by unexpected critical concerns that hinder their organization's most vital goals. Effective delegation requires a cycle of several key actions, rather than simply offloading work.

- **Understanding one's preferences.** Effective delegators choose which jobs to keep and which to delegate. Leaders also know how much input they want while the delegate completes the work.
- **Knowing their people.** Effective delegation requires leaders to distribute responsibilities to knowledgeable and skilled people. Leaders must understand their teams. Delegation may help direct reports thrive by offering them additional responsibility.
- **Being clear about the purpose of the task.** A task's purpose provides it with meaning. When this purpose aligns with the beliefs and goals of the team or individual, delegation transforms into a chance for personal growth.
- **Assessing and rewarding.** Leaders ought to collaborate actively with their direct reports to develop strategies that support their team members, and leaders should assess whether a task has been completed appropriately, as well as provide appropriate rewards appropriately.

In 21st century contemporary leaders focus on emphasizing their unique strengths and they should concentrate on tasks only they can do and delegate the rest to their team. Understanding their core contributions and delegating everything else boosts their impact within the organization. Recognizing personal traits, behaviors, and habits allows leaders to identify potential triggers for challenges, helping them improve specific skills and grow individually. Common internal barriers include lack of confidence, fear of failure, maintaining authenticity during self-promotion, impatience, resistance to new ideas, or impostor syndrome — all of which can hinder leadership success. By increasing self-awareness of strengths and weaknesses, leaders can leverage their unique value and enhance their personal and professional brand [165]. Digitalization and smart technologies are transforming how contemporary leaders engage with their teams and stakeholders. Leaders must adopt new communication and collaboration methods to succeed in this changing environment. Furthermore, diversity, globalization, and inclusion are becoming increasingly vital in the workplace. Modern leaders need to develop new skills and strategies to effectively manage and motivate diverse teams, being more aware of and sensitive to the needs of individuals from various backgrounds, cultures, and regions worldwide. Globalization requires building effective connections with allies, competitors, colleagues, and stakeholders from different cultural, attitudinal, and geographical backgrounds, along with understanding international markets and regulations. Leaders who incorporate sustainable practices into their tasks, actions, and operations will be better equipped to compete in a rapidly changing world. Interestingly, according to the United Nations Conference on Trade and Development (UNCTAD) [166], the value of global trade reached a record \$33 trillion in 2024. This represents a \$1 trillion increase compared to 2023 and a 3.3% annual growth, according to UNCTAD's latest Global Trade Update [167]. Global leadership involves cultivating a global

mindset—next-generation leaders who skillfully navigate the international landscape, build cross-cultural relationships, and promote growth for businesses and communities worldwide. Developing this mindset starts with the ability to communicate a clear vision. Modern leaders must think strategically, build relationships, and inspire cooperation. To be effective global leaders, we must navigate challenges and seize opportunities within a dynamic, diverse, and international environment ecosystem.

In 21st century contemporary leadership emphasizes improvement and self-management of those under its guidance. It offers a clear sense of purpose. Leadership involves creating, developing, and completing tasks. Often, it can turn the status quo into a better future, and sometimes maintaining a good status quo is also part of leadership. Contemporary leadership responsibly manages resources, aiming for a circular economy instead of unlimited growth. It always considers how actions affect people and ecosystems. Contemporary leaders practice restraint, doing only as much leadership as needed. Hierarchy remains important when employees have little experience, when managerial responsibilities are involved, or when personal and organizational goals conflict. Today, leadership flows both ways, with employees also taking on leadership roles from managers [168]. Contemporary leadership emphasizes collaboration and treats employees as partners rather than subordinates. It depends on mutual agreements and aims to garner employees' commitment to foster intrinsic motivation, focusing more on results than hours worked. Contemporary leaders focus on unlocking employees' potential and promote self-directed learning. They prioritize the collective good over individual interests and support continuous development. These leaders skillfully manage disruptions by recognizing environmental shifts and seizing opportunities [169]. A responsible leader strives to leave a positive legacy, creating an environment where everyone is motivated to leverage their strengths. Ultimately, modern leaders serve the organization by being aware of how their actions and interactions influence both the organization and the social system. They ensure that decisions balance short-term needs with long-term goals factors.

In 21st century honesty, adaptability, and balance are key qualities for effective leadership. Mentoring and coaching act as guiding tools for aspiring leaders, helping them navigate the complexities of contemporary challenges. Coaches support future leaders in becoming more agile, flexible, and adaptable, providing them with the necessary skills to manage change, uncertainty, and complexity. During coaching sessions, they identify areas for improvement and offer tailored guidance to develop those skills, whether in communication, analysis, decision-making, or conflict resolution. Coaching promotes more effective and efficient leadership by offering honest feedback and fostering accountability. This culture of responsibility encourages continuous self-improvement and personal growth. Leaders face complex challenges and critical situations; coaching equips them with problem-solving techniques, strategic decision-making, and purposeful approaches to handle these issues effectively. As a structured, goal-oriented process, coaching concentrates on developing specific skills and achieving set objectives. Usually led by a professional expert, coaching helps establish and reach clear goals, whether short-term or project-based, focuses on enhancing skills, decision-making, and performance enhancement [194]. Mentoring is a dynamic relationship between an experienced mentor and a less experienced mentee. The mentor provides guidance, support, and wisdom, helping the mentee grows personally and professionally. It usually involves a long-term commitment that fosters trust, connections, and a deep bond. Skilled mentors share knowledge, help mentees avoid mistakes, and navigate challenges. Technology executives must be data-savvy. Without facts, a leader will guess, which is perilous given the stakes. Data gives technology executives actionable information, minimizing intuition. Monitoring emerging trends is crucial for technology leaders. What are the key industry shifts? How can a leader align their tech strategy with overall business objectives? Effective technology leadership involves not only managing current needs but also predicting future trends. Anticipating these changes allows a leader to gain a competitive edge as a first mover.

In 21st century, Non-technical people find tech jargon perplexing. Tech leaders can help stakeholders understand complicated terms. Technology executives must bridge IT, smart technology, and other areas. Company technology should not be separated. Contemporary leadership must integrate IT and smart technology with other areas for a united approach. Despite the job's complexity, more strategic board reporters must learn to interact with laypeople. Tech CEOs may boost their long-term success and benefit their successors with a well-crafted ten-minute board presentation. Since leadership can be lonely and demanding, mentors offer emotional support and act as confidants through listening, empathy, and guidance. Beyond professional growth, mentoring encourages personal development and is a key tool for succession planning, ensuring a pipeline of future leaders. Both mentoring and coaching are essential in developing confident, capable leaders. Finding the right mentor or coach can be challenging and requires commitment from both parties. Contemporary leaders often feel overwhelmed but can find reassurance in knowing

they are not alone. By adopting positive strategies, leaders can overcome challenges and add value, staying focused and adjusting to meet urgent needs do [170]. The structure above helps leaders in any business clarify position descriptions and coordinate their teams, which are crucial for solving top leadership problems. Contemporary leaders worldwide need to focus on addressing common leadership challenges. They must be proactive by setting clear goals, establishing timelines, and deadlines to stay on track. Distractions can easily cause leaders to lose sight of both long-term and short-term objectives. Often, leaders get caught up in handling urgent issues unexpectedly, which divert attention from the outcomes that is the most critical to their organization. While surprises are inevitable, goal-setting acts as a navigation tool, helping leaders refocus on their priorities amid various leadership challenges. A well-known method is the SMART approach, which includes specific, measurable, attainable, realistic, and timed goals. When modern leaders set their goals, they should ensure they address these key points' as follows.

- **Specific.** Provide a comprehensive description of what achieving the goal would entail.
- **Measurable.** Set achievable targets based on ability by quantifying the progress.
- **Attainable.** Stretch goals are acceptable, but a leader must also ensure that achieving the goal is manageable.
- **Realistic.** A leader should evaluate what is likely to be necessary and achievable in terms of time, resources, and talent to reach the goal.
- **Timed.** A leader must set deadlines to reach milestones along the path to their goal, as well as for the final achievement itself.
- **Valued.** They need to establish goals that align with their objectives and values.

In 21st century contemporary leaders are illustrious by their emphasis on adaptability, collaboration, and purpose-driven action in a rapidly changing world. They prioritize innovation, emotional intelligence, and creating inclusive environments [185]. Examples include figures known for their visionary leadership, like those who spearheaded the digital revolution or championed social change, alongside leaders who foster collaboration and resilience in their organizations and communities. Today the world has become more unified and works within a global financial and economic eco-system [186]. The financial crisis that occurred in the year 2008 has extremely destroyed the economies of the developing and least developing nations with economic recession, political and social instability as well as overall life style of mass people. It is obvious what set back happens to one side of the world will affect complete global economic system. Organizations emerging in the modern age have become more complexes in the fields of information and communication technologies along with digital and smart technology like IoT, AI, ML, DL, big data, blockchain, etc. This situation has made changes to the way people relate to each other, the way they communicate and their career life and skills. Therefore, to be success within an organization, a leader has to acquire essential skills, tactic, system, and knowledge especially within information and communication technology [187]. Modern leaders in the modern age inspire others to align their thoughts and actions with a compelling vision. Technology executives must adapt to continual change. Leaders should welcome change as well as adapt. They should encourage course, webinar, and workshop attendance to keep their teams flexible and resilient. A tech leader's role extends beyond understanding coding or chasing trends. It combines technical expertise, cyber security awareness, emotional intelligence, and more. To guide their teams effectively through the fast-changing tech landscape, leaders must balance practical skills with strategic vision, promote ongoing learning, and uphold ethical standards. Successful leadership depends on factors such as vision, communication, rational intelligence, emotional intelligence, and spiritual intelligence. Consequently, the fundamental principles of leadership today can be summarized as below.

- In the present day, leadership is accessible to anyone, as each person is actively involved in service. According to James M. Strock, if leadership is primarily about helping others, then every human should be capable of moving between the positions of leader and follower.
- People are the most significant asset of any organization. Mark Zuckerberg stated that the increasing emphasis on cultivating deeper social interactions and better connections and trustworthiness is one of the most fundamental changes that enhanced openness and transparency.
- We are moving from a world focused on transactions to one centered on relationships.

- Leadership is a relationship between empowered and willing adult individuals.
- Leadership is a dynamic relationship. Today, it is often seen as the answer to any problem. Managers are now expected to demonstrate qualities such as being 'visionary,' 'charismatic,' 'transformational,' and 'authentic.' These traits are considered essential for 'followers' to perform effectively, potentially.
- A key aspect of leadership in the modern age is communication. Possibly because of his age while in office, his sometimes inconsistent communication skills, and his inability to clearly articulate a forward-looking view on civil rights issues, Dwight Eisenhower has often been underestimated [193].
- There is no single leadership style that fits all. Mahatma Gandhi stated that every action reflects one's priorities. The brain is a remarkable organ; it begins functioning as soon as we wake up and continues until we arrive at the office [188].
- The duties of leadership are becoming increasingly interconnected. Theodore Roosevelt famously stated, "Words are instruments to me." I endeavor to convey to my audience that I am genuine, that my words are meaningful, and that I adhere to the fundamental principles of civilization.
- A leader's unique duty is to create and share an inspiring vision. Some critics say Ronald Reagan's accomplishments in various careers, including his two-term presidency, were just lucky breaks. Still, there is no evidence to support this claim. While Reagan's successes are impressive, they cannot be solely blamed on luck or coincidence [189].
- Love represents the most elevated form of leadership relationship. Martin Luther King, Jr. stated that anyone can be great because everyone can serve. An employee doesn't require a college degree to serve, nor do people need perfect grammar to make a difference. All that is needed is a heart full of grace and a soul driven by purpose, love [190].
- Character is a competitive advantage. According to William Shakespeare, "Love everyone, trust a few, do evil to none." Winston Churchill once stated, "It is of little consequence to be nice when one must murder an individual."

In 21st century contemporary leaders must think modernly to solve problems. Honesty, flexibility, agility, adaptability, modesty, courage, judgment, and innovation are key characteristics of modern leaders. Again contemporary or modern leaders should interact directly with their teams to foster creativity and transformation. Effective leadership now entails transitioning from output-focused to people-centered management, adopting innovative tactics for contemporary situations, and proactively introducing new procedures while motivating teams to embrace change. This modern approach emphasizes diverse skills like fostering innovation, collaboration, a sense of purpose, and resilient teams; maximizing each team member's potential; leveraging data to improve performance and growth; maintaining productivity in remote settings; and committing modern leaders to adaptability [191]. Effective communication and active listening are needed for modern leaders to understand their teams' sentiments, issues, and ideas, making employees' listening tools critical. Leadership in government, non-profit, and education has unique challenges in making strategic, business-oriented choices. If badly planned or implemented, these high-stakes decisions can have catastrophic implications [192]. Today leadership not only increases performance but also wellbeing. It is a win-win for everyone. Contemporary leader prioritizes their (own) wellbeing. Too many leaders (almost 40%) are experiencing burnout. When anybody is in this state, it's far more challenging to recognize what's going on around you and how you can influence optimal outcomes in work and life. Self care and well-being are essential for leaders to be able to maintain the energy for their roles. Technology leadership today and in the future requires more than technical ability and a distinguished title. Technology executives must have a balanced, adaptive skill set to navigate the fast-changing tech world. Leaders can navigate tech complexity by improving three fundamental abilities. Technology executives must balance strategic vision with technical specifics. Technical details can distract from overall aims. Tech leaders must combine strategic thinking with practical tech expertise. They must also promote cybersecurity knowledge from interns to C-suite executives. This is a critical situation requiring teamwork. Smart technology executives need emotional intelligence to build good teams. A leader's effectiveness depends on recognizing team members' emotional and professional demands.

11. Key Characteristics of Contemporary Leaders for Success in 21st century

21st century is characterized by the critical role of leadership in the giving of vision, devotion, direction, and inspiration to a team of individuals in order to accomplish a task or purpose that would be difficult for a single individual. Followers are the term used to describe other members of the organization, team, or group. Followers are those who align with the leader's vision and objectives. Furthermore, there is a growing interest in the investigation of followership. However, it is crucial to refrain from being bewildered by the phrases "followers" or followership.

This term should never be used in a negative or disparaging manner. In order to accomplish their own obligations and individual tasks, followers may also exhibit leadership qualities [101]. Many of the most effective leaders of the present day first acquired the skills, opportunity, and experience necessary to lead others by becoming exceptional followers. This is due to the fact that followership is a critical function. In other words, the development and appreciation of followership talents usually help the acquisition of the experience and needed knowledge necessary to become a leader. In this modern era, there are few modern leaders who spearheaded the digital and smart revolution, like Steve Jobs or Bill Gates, demonstrated vision, innovation, and the ability to disrupt industries. Modern leaders, who foster teamwork and inclusive environments, usually have led successful international collaborations or promoted diversity within organizations. Contemporary leaders should have the ability to quickly adjust to new situations and embrace change is crucial in today's dynamic environment [102]. They need to articulate a clear vision for the future and develop strategies to achieve it, considering long-term implications. They need to encourage teamwork, open communication, and shared decision-making and which is vital for leveraging diverse perspectives and achieving collective goals.

In 21st century contemporary leaders should have the ability to creating environments where all individuals feel valued, respected, and empowered to contribute their unique talents is paramount. They need to maintain high ethical standards and make decisions that are both responsible and sustainable which are critical for building trust and long-term success. They must be committed to ongoing learning and development, staying abreast of new trends and adapting their approaches accordingly. In this era all type of organizations demands a more collaborative, adaptive, useful, technology-entered, and purpose-driven approach. In this century leaders prioritize psychological safety, long-term thinking, flexibility, balance, accommodation, and innovation as a collective effort. They understand that leadership is not about holding power, but about empowering others and creating a positive impact. A few facts indicate the existence of 'naturally born leaders' [103]. The Current study reveals that natural leaders are unreliable. People sometimes associate charm with leadership, which contributes to this misperception. While some leaders have considerable charisma, many do not. In reality, leaders are not born but shaped by various factors. These include honesty, education, preparation, experience, opportunity, and balance. Wise leaders recognize that developing followership involves encouraging followers to participate in goal setting and objectives. Contemporary leaders see followers as partners who should be supported in innovation and empowered to perform their roles [86]. Leadership is crucial because developing positive leadership skills can significantly impact nearly every aspect of our lives. Learning, understanding, and demonstrating leadership can positively influence our workplaces, communities, and personal relationships. Today, effective leadership requires vision, mission, values, dedication, motivation, and consensus-building. Lack of these attributes can significantly reduce a leader's effectiveness. Contemporary leaders have these traits.

11.1 Humility. Humble leaders are characterized by their self-awareness, openness to feedback, and willingness to acknowledge their limitations and mistakes. In modern era this approach allows them to build stronger relationships, encourage creativity, and ultimately achieve better results for their organizations [100]. A humble leader is more personable and real. Sharing authority and soliciting input replaces forcing change and leading by edict.

11.2 Trust. In 21st century trust is the foundation upon which strong, productive relationships are built. Leaders who are trustworthy inspire confidence, foster a positive work environment, and encourage strong team performance. Modern leaders must develop trust with their teams by their behaviors and trust people to make decisions and work independently [104].

11.3 Transparency. Trust and transparency go together. Trust cannot be built without honesty and candor. Transparency is a crucial quality for contemporary leaders, fostering trust, accountability, and a more engaged and productive workforce. It involves being open and honest with team members [99]. When executives openly discuss working together to achieve the company's mission, employee satisfaction rises by 103% and exceptional work output rises by 87%.

11.4 Empowerment. It involves giving team members the autonomy and resources to make decisions and take ownership of their work, fostering a sense of responsibility and engagement. This approach contrasts with traditional leadership, which often emphasizes top-down control. In this modern era leaders who let teams own, decide, lead, and innovate boost engagement by 78%. Excellent performance increases by 255%, while workers' image of leaders improves by 184% [98].

11.5 Enablement. It involves equipping leaders with the necessary skills and resources to effectively guide and inspire their teams. This includes fostering qualities like empathy, authenticity, and adaptability crucial for navigating the complexities of today's workplace. Effective leadership enablement focuses on developing leaders who can empower others, promote innovation, and drive positive change within organizations. Employees should be empowered to make an impact. Leaders are responsible for cultivating their employees by providing the skills and experiences needed for excellent performance work [86].

11.6 Prioritizing wellbeing. In this era 40 to 50% of employees face moderate to severe burnout, making staff well-being a top priority for leaders. This involves understanding employees personally—learning what motivates them, how they prefer to work, and what support they value. Fostering a 'people first' culture, where leaders treat individuals as unique, greatly reduces the risk of burnout reduced [97].

11.7 Mentorship. It is a crucial quality for modern leaders, fostering growth, resilience, and engagement in both mentors and mentees. It involves guiding and supporting less experienced individuals, sharing knowledge, and providing a safe space for learning and development [96]. When a leader actively mentors, employees experience a 102% boost in motivation and see their leader as 320% more supportive favourably.

11.8 Empathy. In modern era understanding and acknowledging others' feelings, needs, and challenges is crucial. Showing empathy makes leaders more relatable and helps build stronger team connections. Currently, we face an unprecedented situation where everyone is experiencing the same event, but each person's experience is unique. Although Covid-19 had a global impact, its personal effects vary widely. Someone once said that we all carry rocks in our backpacks, and on some days, those rocks feel heavier. Recognizing this is a valuable step to start [87].

11.9 Recognition. In this era contemporary leaders are expected to be adaptable, ethical, and focused on both individual and organizational growth. Effective recognition of these qualities involves highlighting specific behaviors, providing opportunities for development, and celebrating achievements publicly. Appreciating others and providing regular praise are essential for fostering a happy and healthy team that is more inclined to go 'the extra mile' [95]. Consistently recognizing individuals, not only after achievements, results in an 83% rise in employee engagement.

11.10 Honesty. Actually, honesty promotes responsibility. Honest leaders hold their teams responsible. This may foster a culture of responsibility, confidence, and belief where everyone accepts responsibility for their job and strives for success. Honesty is essential for good leadership now and in the future. Building trust, setting an example, encouraging criticism, fostering responsibility, and creating a positive culture are essential elements for contemporary leadership [105].

11.11 Visionary thinking. It is a vital quality for modern leaders, and it enables them to anticipate future trends, as well as inspire teams, and drive innovation. It involves seeing beyond the present, setting strategic goals aligned with a broader vision, and motivating others to achieve them [88]. Modern leaders need to articulate a clear vision for the future and inspire their teams to work towards shared goals.

11.12 Technology savvy. In modern era, all technology-savvy leaders possess a strong understanding of technology and its applications, enabling them to effectively guide their organization through digital transformation and innovation. They don't necessarily need to be technical experts, but they should be able to communicate with technical teams, make informed decisions, and adapt to new technologies [89]. Contemporary leaders are usually comfortable with technology and understand how it can be leveraged to improve processes, enhance communication, and drive innovation.

11.13 People centric approach. In 21st century all modern leaders with a people-centric approach usually prioritize the well-being, development, and engagement of their team members. This leadership style emphasizes building strong relationships, fostering open communication, and creating a supportive and inclusive work environment where individuals feel valued and empowered [90]. Contemporary leaders are focusing on the needs and development of team members, fostering a sense of belonging, and valuing diverse perspectives are crucial for creating a thriving and engaged workforce.

11.14 Consensus Building: This is the ability of a leader to forge a consensus among members of a group who have varying viewpoints. A consensus frequently occurs when a group's members agree that a certain alternative is acceptable, despite the fact that it may not have been their first choice. The development of consensus may encourage a greater degree of commitment among group members than a decision that is obtained by a simple majority [91]. However, consensus building necessitates longer periods of discussion and may infrequently prove impossible. Modern leaders frequently must finally assume the initiative and verify that the group decision has been made to commence implementation.

11.15 Values: These are the guiding principles that determine how the personnel, beginning with management, want to conduct their company and their behavior. These principles constitute the foundation of an organization's culture and will determine the course of its development. Modern leaders are steadfast in their dedication to the values of integrity and moral courage [92].

11.16 Commitment: This is the emotional investment of an employee in the execution of a decision, conclusion, or objective, which includes the dedication of substantial effort. Successful and modern leaders must be dedicated and seek the commitment of others in order to achieve the target and establish objectives [93]. Contemporary leaders are steadfast in their commitment and their capacity to establish excellent relationships.

11.17 Motivation: This is the ability to provide a justification or incentive that motivates others to take action or commit. Successful leaders are cognizant of the fact that each individual is distinctive, and as a result, they respond to a diverse array of motivators. Money is not the most effective long-term motivator, and the least effective long-term motivator is the establishment of a fearful atmosphere [94]. This is also acknowledged by a discerning leader. Their subordinates can be successfully motivated by contemporary leaders.

11.18 Comprehensive Digital and Smart Transformation. Tech leaders need to integrate all components of digital transformation—AI, blockchain, cloud, and data—and develop products that enhance synergy across digital strategies. Today, it is essential to focus on data-centric and cloud-based solutions. Blockchain should be utilized to ensure data immutability, while AI engines can improve the accuracy of analytic. As technology advances, tech leaders need a comprehensive understanding of current and future automation processes and solutions. They must also maintain effective communication and collaboration with R&D teams to ensure successful product releases that deliver value to customers.

11.19 Inspiring and influencing the team. Leaders who set an example may inspire their colleagues to succeed and create a healthy work environment. Contemporary leaders show that big ambitions are achievable and inspire change by sharing their experiences. This approach helps foster unity and collaboration within the workplace, creating an atmosphere where employees are motivated to work harder and aim for higher excellence.

11. 20 Bridging the Tech Knowledge Gap. Every tech CEO must explain technical topics to non-technical audiences. Bridging technical and non-technical stakeholder knowledge gaps offers several opportunities. When employees, customers, and outsiders understand what is happening, everyone benefits. With ChatGPT, AI can now serve regular people instead of technical systems. It reached 100 million users in two months, making it the fastest-growing consumer app ever. AI democratization with broad access is exciting, but creates social challenges. Elon Musk and over 1,000 other industry executives have asked for a stop in AI research due to concerns about its impact on mankind. AI automates time-consuming operations, which can enhance organizational productivity. Teams also worry about AI replacing their employment.

11.21 Understanding of Quantum Technology. Businesses will face impact and possible disruption from advancing quantum technology breakthroughs. It is now crucial to educate ourselves on these transformative developments, considering both technological and business impacts. The moment to study, evaluate, and pilot quantum is now, even though its full potential will emerge in the medium future. Anything agile is trendy now. Cryptographic agility is essential for shifting to post-quantum techniques, not merely a fad. When quantum computers become millions of times more powerful, most traditional encryption approaches will fail. Crypto-agility will be essential for post-quantum resilience. China is investing more on quantum computing than the West. A quantum processor a million times faster than the world's fastest supercomputer was unveiled in October 2021.

11.22 Innovation. Contemporary leaders focused on innovation enable their organizations to stay competitive, adapt to market shifts, and open new growth opportunities. They can discuss strategies to cultivate an innovative culture, promote creativity and calculated risk-taking, and develop processes that support and integrate new ideas. By committing to these efforts, leaders can help their organizations stay market leaders and seize future success.

11.23 Diversity, equity, and inclusion. To create a fairer and inviting workplace where all employees feel valued, respected, and supported, leaders must advocate for diversity, equity, and inclusion. Their intentional diversity promotion may create a workplace that values varied viewpoints and cultures. This fosters inclusion and mutual respect, which improves worker collaboration and communication and boosts productivity. Leaders may design methods to foster diverse and inclusive teams, remove unconscious biases, promote justice, and create an equal workplace.

11.24 Effective virtual leadership. Since remote and hybrid workplaces introduce unique dynamics and challenges compared to traditional offices, leadership skills must be adapted accordingly. Contemporary leaders should address issues like collaboration barriers, reliance on digital tools, and limited face-to-face supervision when managing teams. As remote work and virtual teams grow, effective virtual leadership has become increasingly important. Leaders who manage remote teams well can ensure consistent performance, engagement, and collaboration across various locations and time zones. They should explore best practices such as communication, trust-building, and team development strategies. Additionally, leaders need to find ways to reduce remote employees' feelings of isolation and promote a sense of belonging within virtual teams. Regular check-ins and online team activities that emphasize open communication and trust can help achieve this goal.

11.25 Conflict resolution. Conflict resolution-savvy leaders can facilitate discussions between disputing parties, foster a safe environment for open communication, improve team cohesion, and guide collaborative efforts toward resolution. They also foster empathy and understanding, which are essential for success. Effective problem-solving leaders help their organizations overcome obstacles, adapt to change, and discovering new growth opportunities. These leaders are adept in problem-solving frameworks, diagnosis methods, and solution development and evaluation. These traits help their teams and companies succeed.

11.26 Adaptability. Tech and customer behavior are changing fast, as are company demands. The pandemic revealed significant gaps in business continuity and security. Understanding these shifts and developing innovative solutions to address these gaps, making businesses resilient for the future, is where a tech executive can truly excel now and move forward. Contemporary leaders must communicate why their top priorities matter and explain what benefits they bring to the business, supporting it all with quality, market-based data for impactful results.

11.27 Project Planning, Management and Delegation. Technology leaders should foster innovation. Teams need confidence to discuss their breakthrough ideas. Innovation sometimes breaks rules being open to change in IT leadership and which can pay off in the long run. Tasks must be accomplished on schedule and within budget. Technology executives need project management skills to transform amazing ideas become reality. Knowing when to delegate and trusting the team's competence are signs of mature leadership. Goal-oriented leaders need good project planning and delegating abilities. Planning simplifies difficult activities, whereas delegation allocates them to team members to guarantee timely completion. Goal achievement, team concentration, and project success depend on these qualities.

12. Conclusion

In 21st century smart technology, according to MGI projections, AI is anticipated to need the transition of around 75 million to 375 million jobs worldwide by 2030. At the same time, the MGI study underscores the creation of new positions and responsibilities. Researchers from the American Economic Association concur with the MGI's forecasts, concluding that while certain tasks are agreeable to automation, only a small number of occupations can be entirely mechanized. Additionally, they anticipate that employees will undergo training to assume their new responsibilities including entire management and leadership pattern will change remarkably. A good leader can influence and drive others. In 21st century contemporary leadership requires no power, fortune, education, position, or prestige. Instead, charm, persuasion, and influence steer leaders. Leadership is a mentality, not a function or title, and involves conduct, attitude, style, viewpoint, and personality. Contemporary leadership inspires, motivates, and influences via passion, not command and control. They link people, develop relationships, and socialize. They must

empower employees by identifying and utilizing their unique abilities and resources. Leaders must create connections, support, and resolve difficulties in today's complex, varied organizations. They must listen like coaches to lead and orient their troops. When external conditions are challenging, stability and security are sought within. Future management must create a worldwide social system for employee direction. To maximize organizational value, contemporary leaders should prioritize key duties that only they can do and delegate. Self-awareness and leadership brand definition are improved by this method. Effective leaders are rated by how successfully they perform primary duties and solve leadership problems. Contemporary leaders need to understand and manage emotions, both in themselves and others, are essential for building trust, fostering collaboration, and navigating complex situations. They need to articulate a clear sense of purpose and align their actions with a greater good, inspiring others to contribute to something meaningful. They also need to understand and leverage technology to enhance communication, collaboration, and decision-making.

In 21st century contemporary leaders are illustrious by their emphasis on adaptability, collaboration, and purpose-driven action in a rapidly changing world. They prioritize innovation, emotional intelligence, and creating inclusive environments. Examples include figures known for their visionary leadership, like those who spearheaded the digital or smart revolution or championed social change, alongside leaders who foster collaboration and resilience in their organizations and communities. Today the world has become more unified and works within a global financial and economic eco-system. The financial crisis that occurred in the year 2008 has extremely destroyed the economies of the developing and least developing nations with economic recession, political and social instability as well as overall life style of mass people. It is obvious what set back happens to one side of the world will affect complete global economic system. Organizations emerging in this era have become more complexes in the fields of information and communication technologies along with digital and smart technology like IoT, AI, ML, DL, big data, blockchain, etc. This situation has made changes to the way people relate to each other, the way they communicate and their career life and skills. Therefore, to be success within an organization, a leader has to acquire essential skills, tactic, system, and knowledge especially within information and communication technology. Contemporary leaders in modern era inspire others to align their thoughts and actions with a compelling vision. Successful leadership depends on factors such as vision, communication, rational intelligence, emotional intelligence, and spiritual intelligence. Consequently, the fundamental principles of leadership today can be summarized as below. In this modern era, leadership is accessible to anyone, as each person is actively involved in service. According to James M. Strock, if leadership is primarily about helping others, then every human should be capable of moving between the positions of leader and follower. People are the most significant asset of any organization. Mark Zuckerberg stated that the increasing emphasis on cultivating deeper social interactions and better connections and trustworthiness is one of the most fundamental changes that enhanced openness and transparency.

In 21st century we are moving from a world focused on transactions to one centered on relationships. Now leadership is dynamic relationship between empowered and willing adult individuals. Today, leaders are expected to demonstrate qualities such as being 'visionary,' 'charismatic,' 'transformational,' and 'authentic.' These traits are considered essential for 'followers' to perform effectively, potentially. A key aspect of leadership in this era is communication. There is no single leadership style that fits all. Mahatma Gandhi stated that every action reflects one's priorities. The brain is a remarkable organ; it begins functioning as soon as we wake up and continues until we arrive at the office. The duties of leadership are becoming increasingly interconnected. Theodore Roosevelt famously stated, "Words are instruments to me. I endeavor to convey to my audience that I am genuine, that my words are meaningful, and that I adhere to the fundamental principles of civilization." Love represents the most elevated form of leadership relationship. Martin Luther King, Jr. stated that "anyone can be great because everyone can serve." An employee doesn't require a college degree to serve, nor do people need perfect grammar to make a difference. All that is needed is a heart full of grace and a soul driven by purpose, love. Character is a competitive advantage. According to William Shakespeare, "Love everyone, trust a few, do evil to none." Winston Churchill once stated, "It is of little consequence to be nice when one must murder an individual." Contemporary leaders must think modernly to solve problems. In 21st century contemporary leadership not only increases performance but also wellbeing. It is a win-win for everyone. Contemporary leader prioritizes their (own) wellbeing. Self care and wellbeing are essential for leaders to be able to maintain the energy for their roles. Honesty, flexibility, agility, adaptability, modesty, courage, judgment, and innovation are key characteristics of modern leaders. Again contemporary or modern leaders should interact directly with their teams to foster creativity and transformation.

As globalization remains dominant in society, especially in business and communication, the world has transformed into a more interconnected, borderless environment. Contemporary leaders must address the challenge of understanding new cultures, navigating international markets, and building diverse, high-performing teams' future. In 21st century contemporary leader embodies the principles of a servant leader, prioritizing serving others' needs. Servant leadership emphasizes caring for the wellbeing of employees and their communities. Unlike traditional leadership, which often centers on company or business objectives, servant leadership keeps its focus on the people. Contemporary leaders should see their staff not as mere resources or tools, but as individuals. In today's organizations, people utilize tools; they are not the tools themselves. This is the essential first lesson in adopting a people-first approach leader. In 21st century tech leaders who can consolidate complex systems and create cohesive tech ecosystems will be essential in quickly generating value post-deal. With the growth of remote work, managers can no longer rely on walking around the office to engage with their teams. To maximize digital and smart transformation, an organization typically has one or more leaders overseeing asset transformation and aligning efforts with strategic goals. Usually, these leaders focus on guiding ongoing digital and smart initiatives as the organization adapts to changing technology, product delivery, and customer demands. There is no universal leadership structure that guarantees success in digital and smart initiatives. With great power comes ethical responsibility. Technology executives must consider ethical issues. They must ethically address moral issues in data privacy and AI ethics. Green technology is vital, not a trend. Promoting tech leadership sustainability is ethical and profitable. In 21st century tech leaders must understand and work throughout the business globally and recruit the proper team members to provide innovative, adaptation and complete customer solutions with trust and satisfaction.

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