

Impact of New Technology on Next- Generation Leadership

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Chapter 1

Emerging Technology: Present and Future Generation Leadership

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ABSTRACT

COVID-19 had a great impact on our lives and work. These impacts have forced us to explore new innovations and technologies for better social life and economic developments. Adaption of technologies are increasing exponentially thus changing the life of people towards thinking, learning, education, communication, reshaping the social and economic developments. We can clearly say that technology developments and social development are co-related to each other and influence each other. Advancement and utility of technologies are having impact on human beings, thus showing progress for future generation. Diverse and challenging workforce should be incorporated with latest technologies to become the future leader. In this chapter, the author discusses the evolutionary changes in organizational approach, leading towards training, development and leadership, impact of technologies in different sectors towards leadership, achievements and participation of African Union in G20 turning to G21, marking a benchmark, making India a current leader at International level.

1. INTRODUCTION

In current scenario, the educational professionals are adapting the emerging technologies as the predominant factor in training and development (Lonnie Morris, 2017; Ladyshevsky, R, 2008). Previously researches were restricted to integration of innovation towards training and developments. However, importance was given in the field of business i.e. sales/marketing and technology (Webber, C. F., 2003). Training and developments has always been a driving source towards organizational growth (Boyce, L. A., 2008; Cercone, K. (2008); Ladyshevsky, (2008)). Initially, the organization needs to frame out their strategies, work on it and provide training in leadership development in order to decline failure in their areas (Beer, Finnstrom, & Schrader, 2016). Apart of it, organization should strive for maximum alignment between trending technologies with their outcomes. Strong and effective alignment has shown 70% gain

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in developing leaders (Colfax, Santosa, & Diego, 2009). Organization has started taking advantages of technologies for better skilled based requirements and focussing the impact of technology learning as a door key towards leadership developments. In current scenario, organizational technical advancement has re-explored how to raise crowd funding (free fundraiser), access transportation sharing network and secure transportation accommodation i.e. peer to peer (P2P) accommodation market (McCafferty, 2016). The very challenging hindrance of technology gap towards leadership is the human factor. Developing clear and crystal objectives, utilizing relevant strategies, efficient placement and regular evaluations are the organizational challenges for scrambling both i.e. managing trending technologies and growing leadership need.

An interesting study was conducted by Hilde Hetland, A. Skogstad, J. Hetland, and A. Mikkelsen back in 2011 (Haryo Suryosumarto, 2023), which analysed the link between leadership styles and learning climate. It offers valuable insights into the kind of leadership needed to drive innovation, creativity, and growth in today's fast-paced business landscape. Another study was carried out, whose titled was *Leadership and Learning Climate in a Work Setting*" (Haryo Suryosumarto, 2023), examining 1061 employees from Norwegian Postal services. The study showed that effect of two style of leadership i.e. *transformational leadership*, which is proactive and engaging, and *passive-avoidant leadership*, which is often described as *'absentee' leadership* — on various aspects of the learning climate; including autonomy, guidelines, team style, opportunities to develop, and time. The former leadership has positive influence on the learning environment, leaving positive impact on employees and guidelines, developing their autonomy opportunity in building a strong team. While, absentee leadership has negative impact on employees with time and guidelines. These findings are momentous for commercial leaders and entrepreneurs. In contemporary business surroundings, an uninterrupted learning and innovations are the keys parameters for staying competitive in the market, thus the role of leadership is becoming crucial.

Proactive Leadership: Proactive leaders take initiative and anticipate future challenges and opportunities. They are forward-thinking and strategic in their decision-making. Here are some characteristics of proactive leadership (Dragan Kesic, 2023):

- a. **Visionary Perspective:** Proactive leaders have a clear vision for the future and proactively work towards it.
- b. **Planning and Preparation:** They invest time planning, setting goals, and developing strategies.
- c. **Risk Management:** Proactive leaders identify potential risks and take measures to mitigate them.
- d. **Continuous Learning:** They promote a culture of learning and adaptation to keep up with the times.
- e. **Empowerment:** Proactive leaders empower their teams, fostering innovation and creativity.

Leadership can be discovered and categorised by 4 different approaches (Future Learn). These are absent, reactive, deliberate and strategic.

- i. **Absent leadership approach:** Absent leaders are considered as Silent killers of commercial transformation efforts (Haryo Suryosumarto, 2023). 'Absentee' leadership, also often referred to as laissez-faire leadership, is a form of leadership where the leader is largely uninvolved, disengaged, and neglects their responsibilities. Passive-avoidant or 'absentee' leadership can hamper the development of a productive learning environment. Absentee leadership often flies under the radar as it is characterized by inaction rather than negative action. Absentee' leaders tend to be passive,

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failing to provide guidance, feedback, or support to their team. Absentee leaders do not interfere with daily operations or employee autonomy, their lack of presence and engagement often results in a lack of direction, decreased morale, and lower productivity within the team.

- ii. **Reactive leadership approach:** Reactive leaders respond to situations as they arise and make decisions based on immediate needs. While this strategy may be successful in some circumstances, it may not be suitable for long-term success. Here are some characteristics of reactive leadership:
 - a. **Short-Term Focus:** Reactive leaders prioritize solving immediate problems over long-term planning.
 - b. **Fire-fighting Mentality:** They may address crises constantly without addressing root causes.
 - c. **Lack of Strategy:** Reactive leaders may lack a clear strategy, making it challenging to achieve sustainable growth.
 - d. **Stress and Burnout:** Constantly reacting to issues can lead to stress and burnout for leaders and their teams.
 - e. **Missed Opportunities:** Opportunities for innovation and growth may be missed due to a lack of proactive thinking.

According to Dragan Kesic, both proactive and reactive leadership have their own place in leadership, but understanding when to employ each approach is crucial (Dragan Kesic, 2023). Effective leaders often blend elements of both styles to navigate the complex challenges of the modern business world.

- iii. **Deliberate leadership approach:** Deliberate leadership approach to leadership development involves intentional efforts to identify and nurture potential leaders within the organisation. Managers and departments may take the initiative to provide development opportunities for their team members, but the approach may not be unified or standardised across the organisation. Deliberate leaders make it clear where they stand and share the logic behind their arguments. They are willing to take the time to form and deliver a clear message. They aren't so excited by a new idea that they forget to bring others into the loop and up to speed when something might change. There are three major approaches or theories toward this leadership. Firstly; the traits or psychological approach, secondly; the situational or contingency approach and thirdly; the behavioural approach.
- iv. **Strategic leadership approach:** The strategic approach to leadership development is considered as gold standard in organisational commitment to investing in future leaders. In organisations following this approach, leadership development is a core part of the business strategy. The development of leaders is seen as a long-term investment, with clear goals, systematic processes, and integration with the organisation's vision and values. Strategic organisations actively identify high-potential individuals, create personalised development plans, and provide on-going support, feedback, and coaching. They also establish leadership pipelines, succession plans, and promote a culture of continuous learning and growth. Strategic leadership development ensures a robust talent pool, agility in adapting to change, and the ability to drive innovation.

Strategic leadership development requires a proactive and comprehensive approach. Organisations adopting this approach prioritise the identification, assessment, and development of future leaders. They invest in leadership programs, executive coaching, mentoring, and other developmental opportunities that align with organisational goals.

2. APPROACHES FOR LEADERSHIP DEVELOPMENT

According to Wilson learning “*The motive of a leader is to engage other in accomplishing their full energies in creating values and success*” (Jack J. Corcker). The above statement has some pivotal elements which is the heart of leadership views given bellows.

- i. **Engaging others:** The key difference between a leader and a common man contributor is to achieve of objectives by engaging other. To succeed in achieving the goals, leaders not only give directions but also motivate and support their talents toward their thrilling vision.
- ii. **Accomplishing their full energies:** A true leader creates passion that ignites to peak commitment; employees are geared up and ready to bestow all their creativity, ability and learning to the organization with full enthusiasm. In return the employees receive success and achieve professional benefits.
- iii. **Creating values and success:** Efficient leader knows how to survive and progress. All the framewokers, owners, employees and customers should obtain values from the organization. An efficient leader always make everyone focus on their growth values; making the growth of individuals as well as origination also.

Leaders who have the above mentioned qualities have integrated the essence and form of effectual leadership. **Essence** is the qualities that give identity to leaders while **Form** is what a leader says and do it. Effective leaders always think what to do if they are empowered as a leader and which type of leaders they want to be. The principles and self-awareness of the values are two important key factors in the individuals for becoming a leader (Daniel Goleman, 1995). This depends on the leadership character. An integrated leadership model is shown in figure 1.

Figure 1. An integrated leadership model



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Leadership character is the root, or essence, of all effectual leadership. Leader's character is categorised into three main parts i.e. personal leader character, social leader character and organizational leader character. Firstly, personal leadership character has the quality of steadfast and adversity quotient, Secondly, social leadership character has the quality of having respect and regards to others, being empathic and compassionate and giving values to individual difference of opinion and lastly, organizational leadership character has the quality of willingness to do everything whenever required and satisfy the customers accordingly rather than one's own personal. Efficient leaders always maintain balance in the three characters mentioned above.

Simply having leadership character is not sufficient for becoming an effective leader. Until and unless the leader's root is nourished by the skills and technologies required implementing on those values and principles, a leader face failure in producing the necessary results for achieving success. The skills of a leader for effective leadership are Visionary, Facilitator, Contributors and Strategist. These skills are correlated to each other. Thus an effective leader has the ability in maintaining balance among all skills and integrating these skills with all leadership character.

2.1 Why a Techno-Leader?

We are aware that only 10% people are leaders inborn while organizational report says that 77% of people lack in leadership (30 Lynne Pratt, 2023). We are surprised to see this data. No matter how we look into it, especially when 83% of businessmen accept that it is essential to develop leaders at every stage in an industry. More than 86% person believes that business leaders expect others to lead them on social problems, affecting them at a larger rate than public leaders (30 Lynne Pratt, 2023). For investment purpose, customers and investor require good business leaders and this is a true fact.

The utility of technology along with digital transformation is the path for businessmen in leading their company. Emerging technologies are changing the work style, connecting people globally and expanding their business. Technical leaders are good or not, this can be judged on a global platform. Their implementation of innovative technologies and change in their work style are influencing their business and attracting globally. Such companies with techno-leaders are raised up with larger visibility.

Now we come to the difference between techno-leaders and business leaders. The real and basic difference is that a techno-leader focuses on technology for solving the problems, promotes inventions through golden opportunities and touches the sky with its innovative driving, rather than depending upon market availability.

According to author **Tarana A Chandel**, **“Technology is an integrated tool for developing a future leader”**

Techno-leader's shaping people, process and technology (SK Panda, 2016) is shown in figure 2.

3. INFLUENCE OF EMERGING TECHNOLOGIES

Emerging technologies has its own impact for future generation. As a current leader it is necessary to have information about the applications of the trending technologies and how to drive it in the field of Entrepreneurship, Agriculture, Education, Administration and many other sectors to enhance economic growth, efficiency, competitiveness, satisfy customer requirements and become a future leader at international level.

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Figure 2. Techno-leader's shaping people, process and technology



3.1 Impact of Technology in Education Towards Leadership

An Educational leadership also called as teacher leadership refers to quality educational organizational approach that brings everyone under an umbrella making simple and conventional goals and values. In other words it is linked with transformational leadership style that spotlight positive change and growth and inspire students to utilize their full potential for combined benefits to all. Usually principals and directors of colleges emerge as leaders due to following reasons

- Showing commitments to set values to subordinates and their students
- Uniting each & every one and uplifting others
- Having good connections among their teaching and nonteaching staff, students and their parents
- Embracing difference in views by valuing their thoughts, ideas and opinion
- Become a problem solver and willing to make amendments for the benefits of staff and students
- Appreciate team work by inspiring positive work-style
- Exchange thoughts and have potential to conquer challenges

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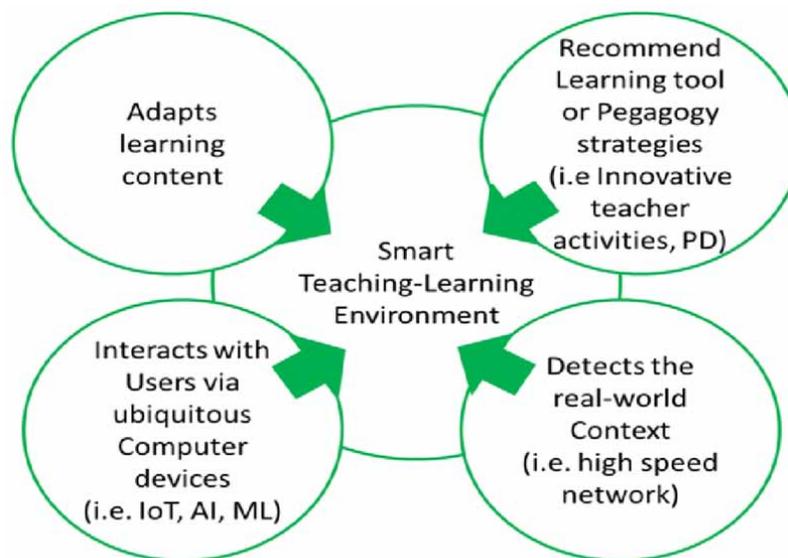
3.1.1 Technologies Transforming the Education Sector

Technology is rapidly expanding in every corner of our life style i.e. from swapping intelligence by speaking and communicating to education, marketing, occupation and in our daily routine (T.A Chandel, 2022). The major part is influenced by education in schools and colleges (Jaskaran S., 2021). Smart teaching and learning environments are conducted by Information Communications Technology (ICT), along with innovatory techniques such as Internet of Things (IoTs) and Artificial Intelligence (AI), helping us in achieving quality education, thus fulfilling SDG-4, which is part of the 2030 Agenda, i.e. Parris Agreement on sustainability development goals (T.A. Chandel, 2020). This 2030 Agenda has 17 sustainability development goals (Zeeshan, K et al, 2022; Américas, E., 2016; Thang, S. M, 2011).

The concept of smart learning-teaching having the goal of providing excellent education (SDG- 4) can be obtained at broad spectrum. According to the report of National Home Education Research in America, 1.6 million children or more are taking education from home. Internet of Things (IoT) based education are transforming the education system into new learning-teaching environment. Smart classes involve latest technology devices such as projectors, PC systems, cameras, interactive learning sessions such as games puzzle quizzes, white boards and technology with feedback sessions for sustainable education system (Rajpara S., 2020).

Thus schools or colleges or universities having the facilities of ICT such as virtual learning classrooms, self-learning management system, & and sustainable resource management system (SRMS) are referred as smart school/ smart university as shown in figure 3. (Chandel, T.A., 2023). The utility of technologies in the field of education are becoming important worldwide. Internet of things (IoTs), artificial intelligent (AI), machine learning (ML), and deep learning (DL) are different technologies often used for education. Utility of these latest technologies are progressing towards

Figure 3. Smart teaching-learning environment



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Figure 4. Transformation of school in world class learning center



smart education system. Figure 4. Shows, how technology can transform school into world class learning center by using it.

3.1.2 Importance of Educational Leadership

Educational leadership is essential due to the fact that it enables colleges and universities to conquer challenges by guiding them an innovative path to deliver knowledgeable classroom experiences to the students. Recent example of leadership in education is the way school, colleges and universities countered during the outbreak of the COVID-19 pandemic. It is because International Society of Technology in Education (ISTE) promoted technology in education sector. Only technology driven system in education, can promote students towards innovative learning. During COVID-19 pandemic, student's efficient learning at their residence was possible only because of enhanced technology. In addition, latest online education tool such as Google meet, Zoom and many learning management systems helped students to learn more effectively from home (Chandel, T.A., 2023). Online teaching has inclined the ingress towards internet from 17% (2015) to 34.45% (2017) (Jaskaran S., 2021). Approach towards internet is twice now. During pandemic efficient leaders addressed the challenges caused by public health crises. They focussed on addressing the requirements of students or making education more available to poor students with learning challenges. Some of the real time leaders in education are as follows (School of education, 2023)

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- S. Khan, founder and CEO of Khan Academy. He launched a non-profitable organization with the objective of serving free of cost education in developing countries.
- Dr. Maria Montessori in 1907, proved leadership by introducing collaborative play and hands-on learning in classroom. This experimental learning method made students learn and understand deeper in their schoolwork and it enhanced social interaction among the students.

3.1.3 Strategies for Effective Educational Leadership

To become an efficient leader in education sector, one should have strong technical & socializing skills, and a habit of comprehending teaching and learning environment. Strategies to become an efficient leader in education sector (Denny, C.A., 2023) are as follows:

- Clarity in vision is necessary for focussing the goals and giving directions. Educational leaders should be specific towards their priorities, challenges and communicating it properly and effectively to the stakeholders.
- An educational leader should upgrade the culture of collaboration, innovation and respect among each other in their opinion. This is possible by conducting professional development programs (PDP) for faculties and staff members, providing smart classroom for student's engagements (T.A. chandel, 2023)
- Technology plays crucial role in education. Educational leaders should adopt technologies in improving pedagogy, training, administrative procedures and making correspondence faster.
- An educational leader should invest fund on conferences, workshop, and PDP and allowing their faculties and staff members to enhance their qualifications.

3.1.3 Careers in Educational Leadership

Leadership in education sector can have teaching as well as administrative roles. Some of the high profile careers in education sector leadership are as follows

- **Directors:** An executive who operates the entire college/ university.
- **District Basic Education Officer:** A leader of schools at district level whose responsibility is to appoint principals, manages finance & accounts and monitor performance of schools as well as teachers.
- **Department head:** A leader who manages departmental activities along with teachers and technical staffs.
- **Principal:** A leader of schools/ polytechnic who also look after teacher and staffs and manages all going activities in the school/ polytechnic

“An educational leader is a role model for others who collaborate with their colleagues on challenging opportunities”.

For edification across the world, India has led top position institutions to attain a global space. According to Phil Baty (Chief Global Affairs officer, T.H.E, London), Indian institutions are participating

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in the global grading for uplift teaching and learning at international level (Manash P.G. & Hemali C., 2023). India's position in global ranking is on top three institutions ranked by World University Ranking with an outcome of 44.9 (i.e. approx. 50 points) in 2020 (S. Priyanka, 2023). Position of IIT Bombay is in between top 150 varsities, achieving the ever-top position of 147. ***Improvements in quality teaching and learning methods have made India a present and future leader in an education sector globally.***

3.2 Impact of Technology in Energy Sector Toward leadership

Investigating energy transition investment opportunities of India, reveals a successful perspective for our nation. The 4th International Conference & Exhibition on 'Atmanirbhar Bharat for Clean Energy Transition' was organized by Somesh Kumar, EY India Power & Utilities Leader on 19 Oct 2023. A report titled "Global champions for advancing renewable energy innovation and manufacturing" quotes that ***India is prepared to affirm itself as a global leader in RE innovation and manufacturing*** (S.Kumar (EY),2023). This statement was jointly stated by Ernst & Young Global Limited (EY) and Confederation of Indian Industry (CII), based on the analysis of different facets of business and policy support. This is a potential statement for enhancing manufacturing of RE in India over future decades. Thus providing support to global investors in tracking and identifying investments throughout the business. The energy transition investment monitor is shown in figure 5. Furthermore India is in position to fascinate considerable numbers of investments in RE sectors such as in (EY,2023)

- Solar PV Manufacturing Projects
- Advanced Chemistry Cell Battery Manufacturing Projects
- Supply Chain Resilience

India has great potential to improve the supply-chain resilience globally for RE innovations and critical elements. ***India is ranking itself as a global winner in RE services, trading, innovations and manufacturing.*** India is also able to handles challenges in affordability, competitiveness,, policies, climatic and environment issues and infrastructures developments. The various polices measures for transition towards RE are as follows

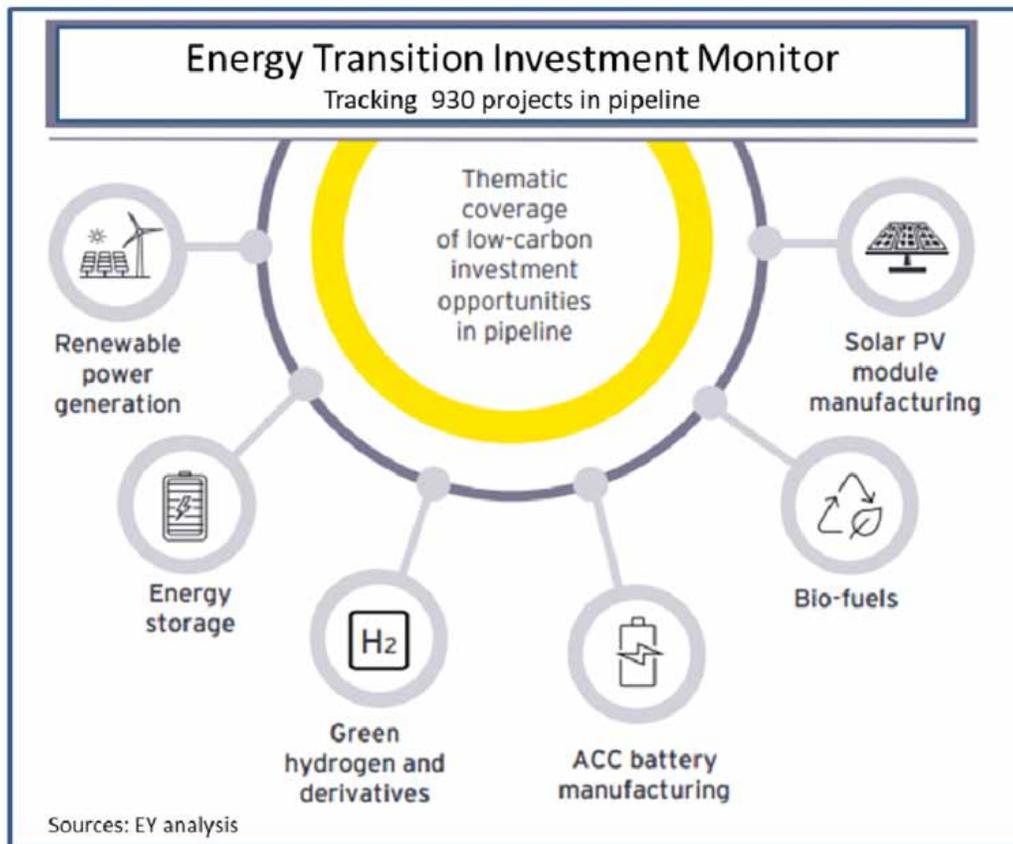
- Adoption of harmonized Green Energy Open Access Regulations
- Long-term predictability regarding Open Access Charges
- Efficient imposition of Renewable Purchase Obligations (RPO) and Energy Storage Obligations (ESO)

3.2.1 Necessity for Technology Transformation in Energy Sector

Energy sector has always been slow in adopting digital technologies due to some or other reasons. The basic reason were investment of high cost in new energy sector and the complexity of the present infrastructure. However, with rapid increase in energy demand and an international pressure for reducing carbon emission following the 2030 agenda of sustainability development goals i.e Affordable and Green Energy (SDG-7) and Global Warming and Climate Change (SDG-13), energy sector is pressurized to find solutions in improving electricity generation and its efficiency.

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Figure 5. Energy transition investment monitor



As international investment in harnessing green energy has become top priorities in power sector, therefore technology transformation in energy sector is most required than ever. Now energy sector is progressing day by day. New technologies are introduced to address the challenges in an industry. The top most technologies used in energy sector are (Sarahrudge, 2023; Michał Krzysztof, 2023) as follows

- **Internet of Things (IoT):** It is sensor based device connected to internet (Chandel, 2023). It connects many devices to provide business via real time data for optimizing working operations and enhancing efficiency. It can monitor energy transition, track the performances of energy generation and distribution; optimize energy demand in electricity generation. Today, IoT sensors are becoming sensorious element for prognosticative maintenance, allowing fault detection in the equipment's before problem arises. The real time data collected by sensors are helping the organization for smart decision in the maintenance department and enhance the energy efficiency without any hurdles, establishing reliable and continuous energy supply. Thus with IoT technology, balance energy consumption with adequate resources can be achieved.
- **Artificial Intelligence (AI) and Machine Learning (ML):** By using actual data obtained from sensors, AI and ML can support energy entrepreneurs to optimize their business operations, improve efficiency with reduced cost. This is because; AI is revolutionizing and remodelling the

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energy sector by allowing predictive analysis in maintenance and optimizing energy demand and consumption. AI algorithms are also analysing energy harnessing and distribution to decline waste and enhance the output, thus saving time and money. In the current scenario, it is very important as energy transition focuses on integrated non-conventional energy sources such as solar, wind, hydro, geothermal. Thus machine learning platform was developed by Enel to forecast solar and wind energy power generation so that entrepreneurs can manage their energy resources in best ways. In other words digital technologies can easily and successfully predict and optimize output of RE sources. General Electric (GE) scientists were the first to use Artificial Intelligence and Machine Learning to decline wind turbine installation and logistic cost. *New state-of-the-art Artificial Intelligence (AI)/Machine Learning (ML) technology developed by GE scientists recognized with a prestigious Manufacturing Leadership Award (MLA) by the National Association of Manufacturers on 4 April 2022* (NISKAYUNA, NY, 2022). *Bharat petroleum* is also using AI to prevent from various failures, thus improving its efficiency in oil and gas exploration (Michał Krzysztow, 2023). For enhancing drill efficiency with reduced cost, the industry has developed an AI platform for analysing seismic data and forecasting the fossil fuels where it is likely to be found. Another industry is *Tesla*, using ML algorithm to forecast energy demand and optimize energy distribution and its storage.

It is observed that AI and ML tools are supporting industries in declining green gas emission and contributing towards sustainable future. As per World Economic Forum, utility of both these technologies can increase energy efficiency up to 20% and declining energy consumption by 10% (Michał Krzysztow, 2023). Thus we can say confidently that AI and ML are two crucial tools with which a company can face challenges in fast growing energy sector and can be competitive in energy market globally.

- **Blockchain:** It is providing energy access to all equally. It is a secured and distributed technology. It is used for supply chain management system and energy marketing, developing a transparent and secured system for energy transaction tracking. *WePower* and *Green Energy lab* has set up their start-ups related to energy are based on block chain (Michał Krzysztow, 2023). This platform is making easy for energy producers in selling energy to consumer directly. Due to transparency and security in block chain supply, it is known for its impenetrable records of energy transaction and its billing. Block chain supply technology is being used globally. Examples are *LO3 or Power Ledger* (Michał Krzysztow, 2023). They authorize their consumer to procure and sell renewable energy in local area directly, thus building more resilient and sustainable energy grid. Block chain technology has potential to develop transparent, secure and effective energy system, thus it can be used in the transformation of energy sector. McKinsey reported that block chain can save energy and boost up the energy business up to \$500 billion till 2030 (Michał Krzysztow, 2023).
- **Cloud Computing:** By applying this technology in energy sector, industries streamlined their data, analyzed it and reduced the electricity cost. In other words, we can say that cloud computing manages energy transition globally and ensure sustainable developments. Duke Energy Corporation utilized cloud computing to maximize its wind turbine (Michał Krzysztow, 2023) while General Electric has used cloud based predictive maintenance to brush-up the reliability in its power generation system (Michał Krzysztow, 2023).

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- **Renewable energy sources:** The most popular RE sources include Solar, wind, hydro and geothermal. These energy sources are more sustainable with minimal carbon footprint as compared to conventional fossil fuels. These energies sources are easily affordable and are accessible to small and large scale enterprenuership.
- **Battery technology:** The energy storage system are utilised to store conventional and non-conventional energies in order to maintain and provide constant supply of electricity. The energy can be stored during off-peak times and utilize it at peak demand times.
- **Smart grid technology (SGT) :** The conception of remodelled grid along with electric power network is dependent on digital technology (Chandel,T.A., 2023). It is a modern electric grid. It utilises sensors, automation, digitally controlled appliance and many other technologies to enhance the reliability and efficiency. It also involve an intelligent monitoring system providing bi-directional information of energy generation/transmission, distribution to customer (Chandel,T.A., 2023). Smart grid also allows the distribution division to monitor the electricity demand and supply in real time. In other words we can say that smart grid operate more effectively, making affordable electric tariff with less effect on environment (European Smart Grids Technology Platform, 2006; M.Y.Yasin., 2020, M.A Mallick, 2021).These technologies help in declining the wastage of electricity and green gas emission, also prevent power outages

3.3 Entrepreneurship Developments

Entrepreneurship development is a procedure of supporting an individual and organization to develop learning, understanding and skills for start-ups. This process also involves trainings, mentoring/ supervising, fundraising and other resources for successful business. The motive of green entrepreneurship (Chandel. T.A, 2022) development is to develop an clean and green atmosphere where individual or group of peoples having resources may turn their ideas into realistic business.

Digital innovations are driving entrepreneurs toward entrepreneurship development since decades. Continuous application of technologies has shown drastic change. With the arrival of Artificial Intelligence, Internet of Things and Cloud Computing, entrepreneurs can access new resources and abilities. The growing tradition of entrepreneurships in our nation has shown good result in economic development. The escalating opportunities for entrepreneur is to establish their business, open new market and become a boss. Another aspect of entrepreneurship is to become financially independent. A strong entrepreneurial approach among the youth of our nation is helping India in becoming developed nation. Some facts towards the growing tradition of entrepreneurship in India (Jaro Education, 2023) are mentioned below

- In favour of entrepreneurs, Government has made policies for beginning their start-ups
- Increased financial growth in India
- Talented youth are in search for beginning their start-up. This culture has certainly boosted Indian economy.

3.3.1 Impact of Technology on Entrepreneurship Development

Technology has great impact on entrepreneurship development. Four areas where technology has great impact (Holger Arians, 2023; Muslim Ameer, 2023; Usman zaheer, 2023) are as follows:

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- **E-Commerce:** E-commerce has exponential growth over last decade. Entrepreneurs can grow their business online on social media platform, work globally, and optimise their working operations. E-commerce provides businessman to launch their business within an affordable capital and gets opportunity to expand their business along with data-driven opportunities at internet cost and benefits of competitive market. Moreover the entrepreneurs have flexible and responsive market shifting conditions. E-commerce has shown a great resource for endless success and a path to reach their client globally.

In current scenarios shopping via e-commerce has increased to \$4.8 trillion globally (Jaro Education, 2023). This sale includes both i.e. industry to industry (I2I) sale and industry to customer (I2C) sale. Online sales are growing continuously. By the end of 2026, most of the retail sales will be online. Small businessman should move toward web stores. From e-commerce website platform builders, one can easy list their product, handle the shipments and take their payment of the product easily. The following names mentioned are the best e-commerce platforms (Harry Guinness, 2023; Alexandra Sheehan, 2023)

- **Shopify:** This platform is made for all type of businesses where you can start

your business, run and expand your business. Shopify traders can view all the activities from back office. Trades can optimize online store, grow their business by selling their product on social media. When you product gets a brand name, shopify will enhance your selling possibilities. It is trusted by biggest brands and has world highest converting checkout via online with shop pay, while point of sale (POS) makes it simple and easy to serve consumer in person, synchronizing orders to consumers', dashboard of shopify website is shown in figure 6.

Shopify e-commerce has following features

- Manage inventory
 - Generate product description
 - Handle international currencies
 - Capture hesitant buyer
 - Fulfil orders on move
 - Evolve your store
-
- **Square:** This platform is for small business. It permits traders to join online and sales in-store through square payment. It powers your entire business in retail sale. Drawback of this platform is that it doesn't have integrated channel, basically for square payment users only. Dashboard of Square website is shown in figure 7.
 - **Ecwid by Lightspeed:** It is a website store where businessman can set up their Ecwid store for selling their products across a world, social media, and marketplaces.
 - **BigCommerce:** This platform is used by enterprise-level industries examples are Shopify and Wix. It provides solution, web hosting, customized stores along with tool for selling globally however traders fell lack of flexibility and simplicity. The dashboard of BigCommerce website is shown in figure 8.

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Figure 6. Dashboard of shopify website

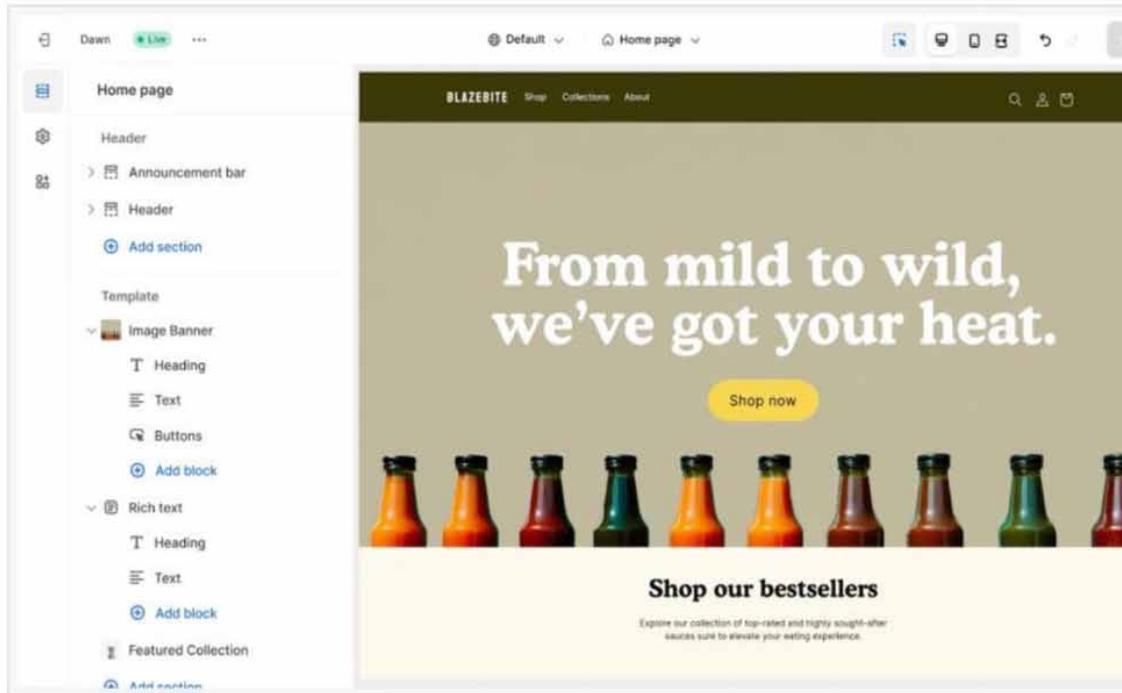


Figure 7. Dashboard of Square website

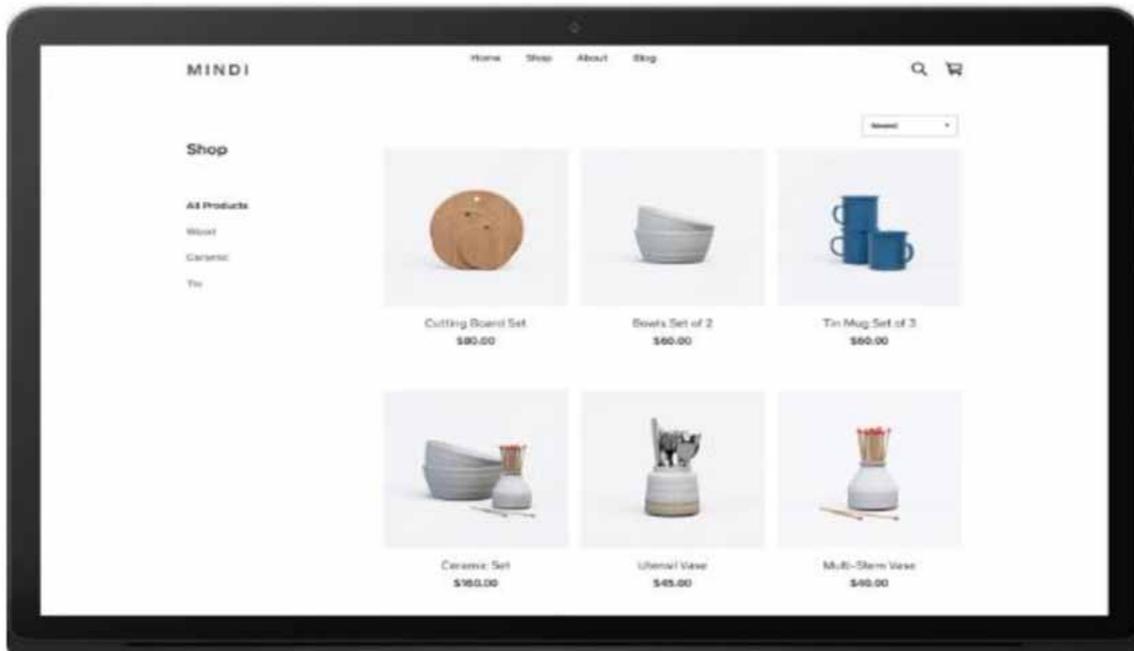
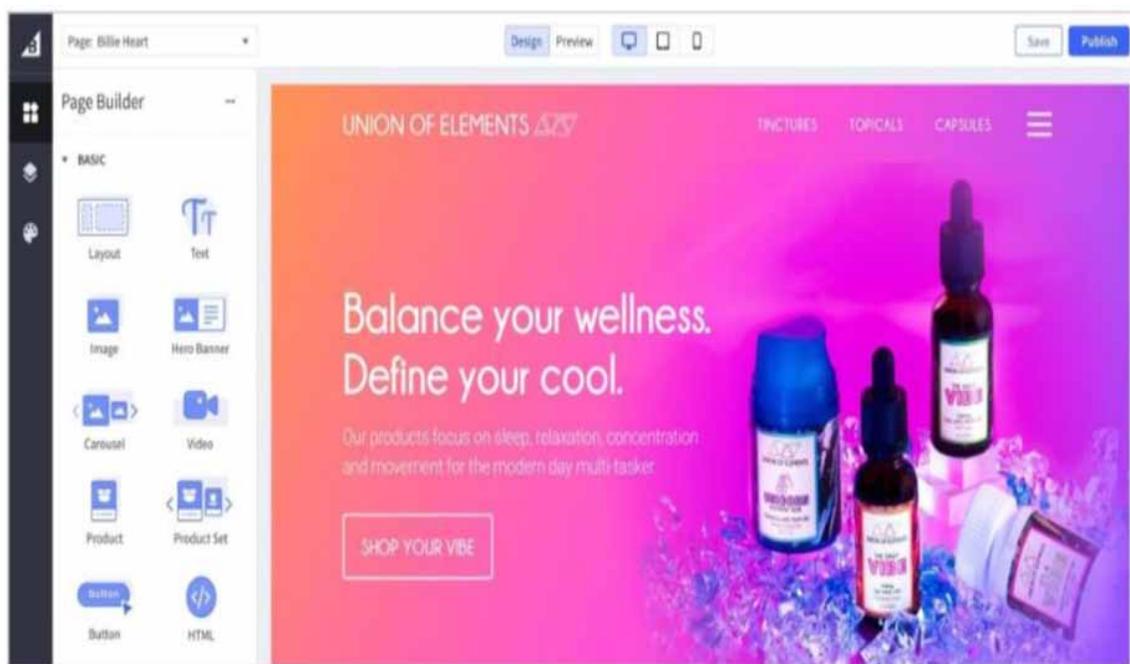


Figure 8. Dashboard of BigCommerce website



- **WooCommerce:** This platform is utilized for creating online e-commerce shop. With this software, anyone can develop their own website into a complete operating online store having all e-commerce features. It is an open-source e-commerce platform for blogging platform wordpress. This is a free and flexible platform, amplified by worldwide community. One can also design an advance version of websites with the inclusion of shipping securities, customized themes along with other standard features. The dashboard of WooCommerce is shown in figure .This is a free and flexible platform, amplified by worldwide community. One can also design an advance version of websites with the inclusion of shipping securities, customized themes along with other standard features. The dashboard of WooCommerce is shown in figure 9.
- **Wix:** It is a free, user-friendly website building platform and powerful search engine optimization (SEO) tool. It has its own customized templates. It require registration of web hosting domain name. One can design its own website for free. This platform begins from initial website builder to advance business solutions. This patform accepts payment online; track the orders and helps in managing your orders from numerous channels. It has its own features. Low stock alarm or inventory management system is missing. For getting inventory management, a trader has to use third part app via social media, the dashboard of Wix is shown in Figure 10.
- **Open Cart:** Open cart is free platform with an open source. This platform helps in creating and managing many stores which shows sales and their repeated consumers as shown in figure. It does not have any integrated sale challenges. Dashboard of Open Cart website is shown in figure 11.
- **Volusion:** It was launched in 1999, one of the oldest platform. It is a user-friendly wibesite creator. This platform is for small scale business. One can create its business home page and product page, can add 30 payment gateways. It does not have any free plans, never allow selling of digital

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Figure 9. Dashboard of WooCommerce website

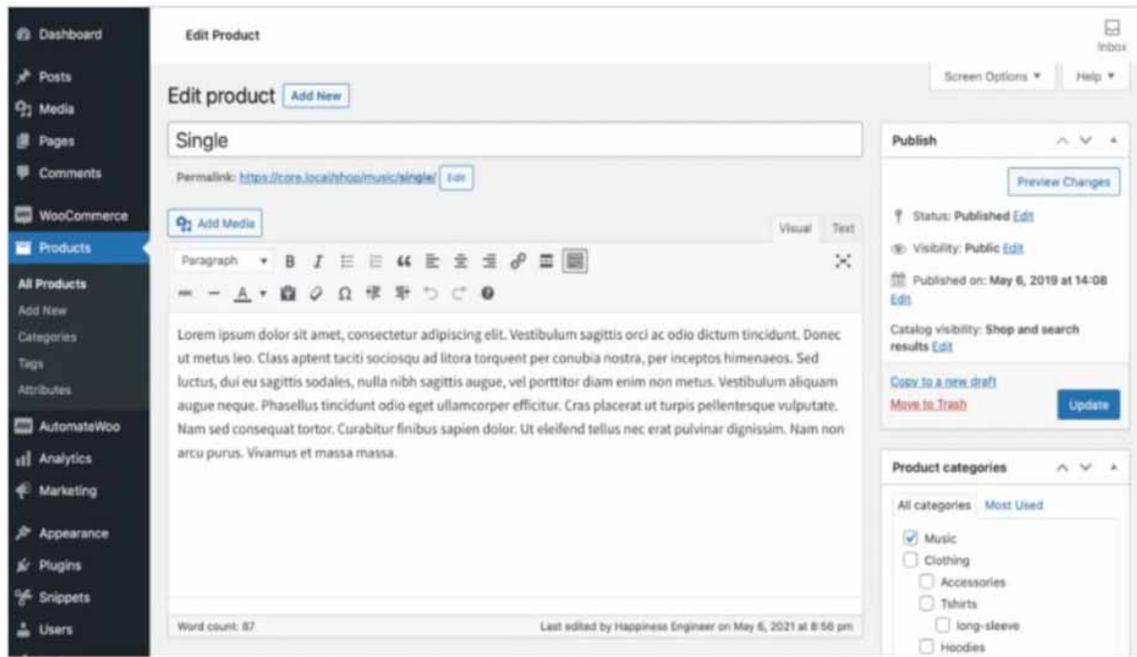
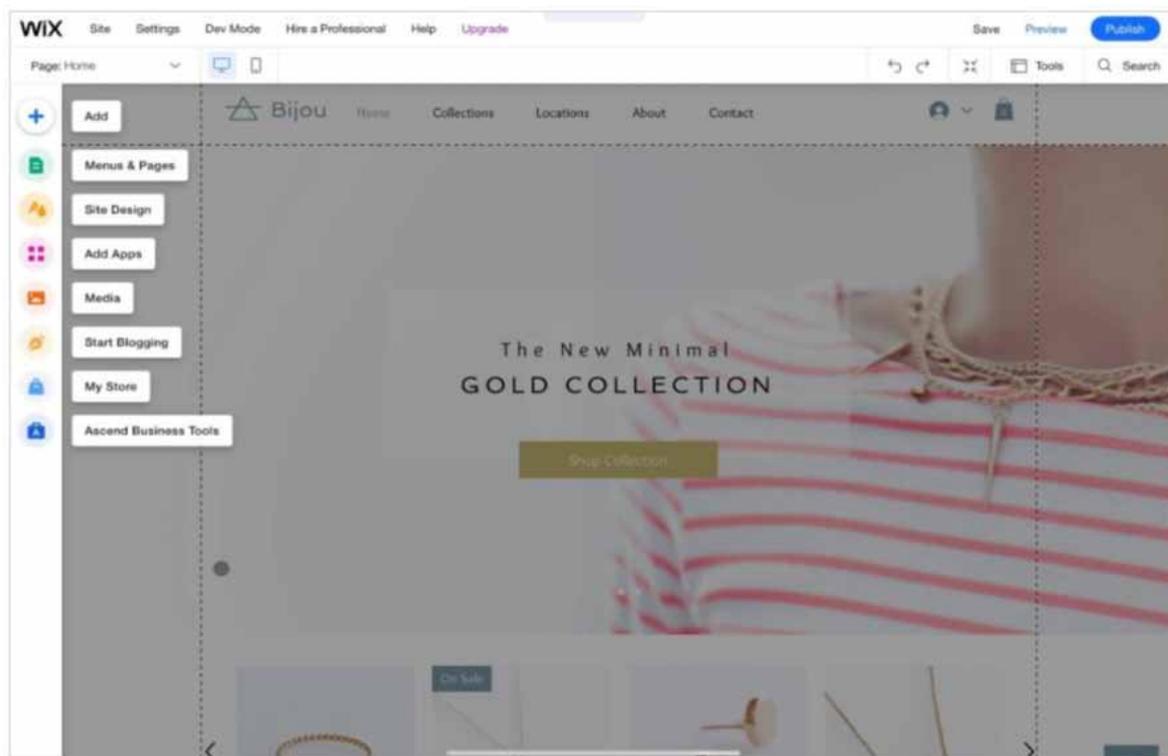
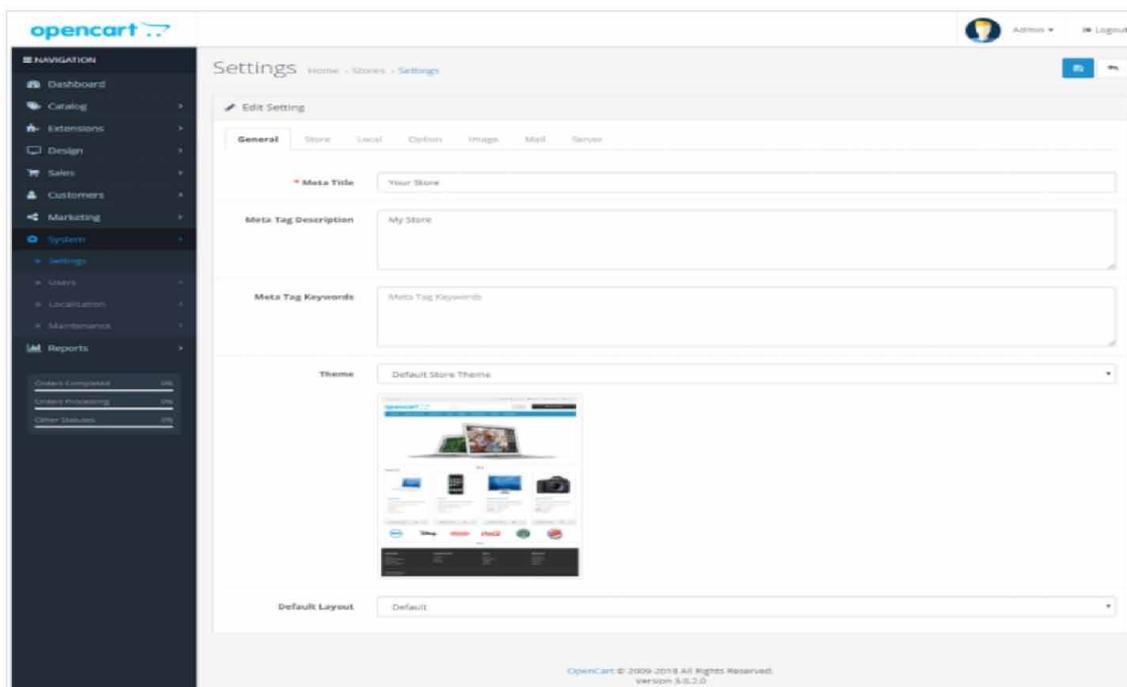


Figure 10. Dashboard of Wix website



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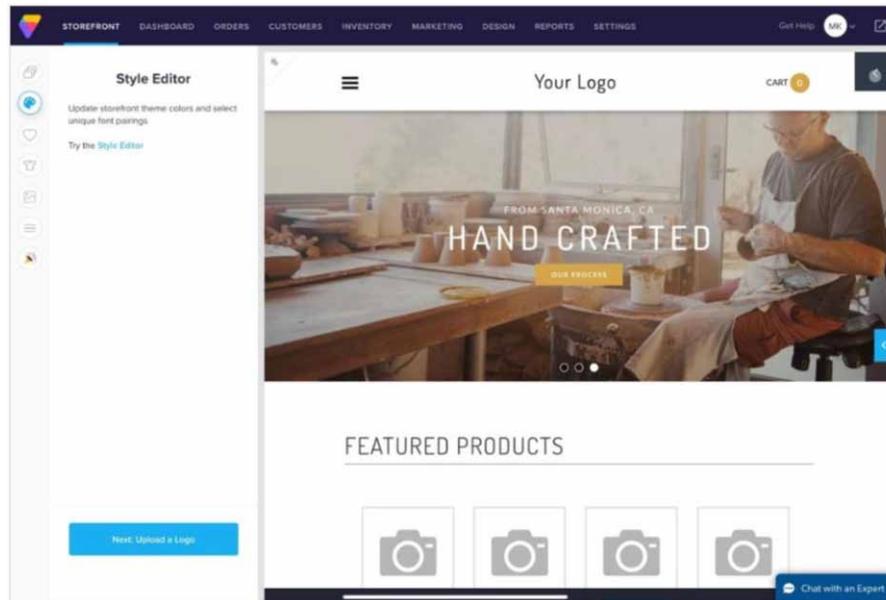
Figure 11. Dashboard of Open Cart website



- products, no free Secure Sockets Layer (SSL) security. Limited plans for sale volumes and product listing. Plan charge begins at \$31.50. The dashboard of Volusion website is shown in Figure 12.
- **Digital Marketing Platform:** A platform such as WhatsApp, Facebook, Instagram and twitter has changed communication and connections with others. The influence of business on social media has changes everything. It is a good tool for sales and showing great success in digital era (Muslim Ameer, 2023). These platforms have become a market place, virtual hangouts spots and all in one. In 2023 there were approximately 3.02 billion users globally on digital platform (Jaro Education, 2023). This platform helps in building market values, networking and involving consumers. It is a cost effective platform, easily interact with consumers and get reviews of their products and gratitude them, thus enhancing business and making a brand of their product in the market. It is essential for entrepreneur’s to move along with emerging technology with best practices to stay long in the market. Thus social media is a best platform to maximize their business potential.
 - **Cloud Hosted:** To establish an online store that is accessible in public, hosting solution is must. Hosting stores give all the information on the server, which is visible to all users on internet. If you feel scared about the third party, your store can be secured by paying addition fees to solution provider. Example of such cloud hosted platform is Shopify. Building cloud hosted e-commerce platform provides hassle free server with all update automatically. Apart, it provides freedom to spotlight your business.
 - **Self-hosting:** Self-hosting is also known as non-hosting e-commerce platform. It is an open source, required third party for hosting your website but is customized and control. Third part requires charges for providing services. Good servicing fee structures are very high and with low

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Figure 12. Dashboard of Volution website



price structure doesn't have much customer support facilities. One can switch the server, modify their codes and build their customised online store.

For self-hosting e-commerce platform, traders have to manage their own server space or have to take rent for server space. Server space on rent becomes complex in managing website, self-responsible for website updating, maintenance and problem fixing. It also demands large internet resources.

- **Expanded Connectivity and communication:** To enhance your business, it is essential to connect with the customer. In previous decades, collaboration meant conducting meeting in conference hall. Days are far behind when business were not on front foot in visualise. Today, this problem has a solution with the help of real time innovators such as Zoom, Google Meet and Microsoft team. Meeting can be scheduled face-to-face, virtually. Meeting on zoom made all feel as if they all are in same room having official chit-chat. Microsoft team provide blended chat meeting, file/document sharing, coordinating projects. These tools have revolutionized team dynamics with possibility of remote work. This credit goes to social media. Products in real time are linked with consumers.

3.3.2 Impact of Technology in Entrepreneurship Toward Leadership

Since decades, involvement of digital technology was on progress for harmonizing the trending demand for techno-solution. The fast growing techno-innovation has found a drastic change in business dynamics forces, significantly remodelling the business through techno-solutions. The developed techno-pattern has raised the potential of advanced emerging technology, thereby changing entrepreneurial work activities (Elia et al., 2020). Major roles are played by ICT in uplifting and making a road-map for incorporat-

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ing novel inventions for entrepreneurial achievements and activities (Ben-Oni Ardelean, 2023). The intersection of digital technology and entrepreneurship has transformed a business into a new species of entrepreneurs launching new operations and projects. Developed entrepreneurs have changed the scenario of business market.

New era business roadmap, consist of convergence of artificial intelligence and secured cloud computing. These tools enable the teams to collaborate with each other more effectively rather than previous working environment, empowering industries to enter new market globally. Now let us analyse how emerging technology influences businesses and develop entrepreneurs as a techno-leaders. Impact of emerging technology toward present leaders (Holger Arians, 2023) and entrepreneurship developments is as follows

- **Manage projects and employees:** Days are left behind when decisions were kept pending due to unavailability of managers/ executive authorities. With the access of software on multiple devices such as tablet, laptop, mobiles, leaders can manage conducting meetings and make effective decision online/virtually.
- **Embrace Diversity:** Language is the biggest challenge for industries while expanding their business overseas. Talents and developed market remain unexploited due to difference in english ascent and proficiency. But due to the availability of translating tools/software, business can be explored, establishing it branch office globally.
- **Flexibility to the Employees:** In the fast going working environment, many industries offer same package benefits to their employee. But the work style of the employees becomes a key differentiator for their loyalties. As all the departments in modern business are decentralized it is not necessary for different team members to stay back in the office. Various software share real time date and maintains strong collaboration with different departments working on same projects. Thus, employees have the flexibility to work in comfort zone outside office i.e. work while staying with their families at homes or outstation, thereby increasing work productivity.
- **Data-driven Decision Making (DDDM):** For business, it is critical to take decision on external factors. Data fulfil many roles. Data analysis is important for decision making and achieving a competitive edge of their business in the market (Muslim Ameer, 2023). Businessman should consult data analytics as key tool for their business opportunities. It serves as benchmark to the present existence, allows understanding the impact of decisions taken for your business. Data are concrete and logical and are always correct in making decisions. If process of data collection and interpretation are synchronized, then decision made on data can never be wrong (Tim Stobierski, 2023). Data may reflect some specific pattern or suggestions for your business outcome.

Data driven decision making means that on the basis of the facts found on research, strategies are framed to achieve their goals. In this process analysis is done on the real time data collected by marketing research, sketching the layout for the benefit of the business or organization (Devan Grant, 2023). Data-driven decision-making, function the same way as heart does in human body. Decision making with no real ground facts may cause tremendous harm to business and consumers also.

- **Artificial intelligence (AI):** The evolution of artificial intelligence is changing the landscape of entrepreneurship. Most important is that the technology is making simpler and easier to examine big data. Entrepreneurs can immediately comprehend big data with the utility of AI-powered ana-

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lytics solution, enabling them in making decision faster and better. With the help of AI-powered assistants, entrepreneurs can launch new products and provide better services to the customers rather than previous (Muslim Ameer, 2023).. Chatbots can provide 24/7 personalised consumer assistance in upraising both product and service (Muslim Ameer, 2023).s.

- **Cloud computing (CC):** Cloud computing is another tool for entrepreneurs. Entrepreneurs switching towards cloud computing have the benefits of enhanced adaptability, reduced cost and efficient data security. One can use the software along with data information from any place; collaborate with their teams immediately, speeding up their procedures by storing them in the cloud.

Previously entrepreneurs used to invest large capital on their infrastructure, estimating future requirements and ensuring proper significant investments. This burden is eliminated by cloud computing, permitting business to scale up their store, network, and real time resources with computing efficiency.

Entrepreneurs can do remote work and check their employee updates. CC is flexible and reliable, uplifts performance and increase efficiency and reduces IT costs. It also helps in improving innovations, permitting organizations to attain faster market values. In this modern world, cloud computing has made access of data fast, and can handle crucial business application from any location with internet connections globally. Today business has squeezed up in air with a single laptop or tablet with specific software application.

4. 2023 G20 NEW DELHI SUMMIT

The 2023 G20 New Delhi Summit was the eighteenth meeting of G20 (Group of Twenty). The symbolic representation design of G20 Submit is shown in figure 13.

Figure 13. Symbolic representation design of G20 Submit 2023



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It was held in Bharat Mandapam, an International Exhibition–Convention Centre, Pragati Maidan, New Delhi on 9–10 September 2023 under the theme ‘Vasudhaiva Kutumbakam or “**One Earth · One Family · One Future**”’. The concept of Vasudhaiva Kutumbakam originates from Hitopadesha, termed from Sanskrit scripture the Maha Upanishad. Vasudhaiva Kutumbakam has its own significance i.e. “The world is one family”. In other words it emphasizes global unity. 2023 G20 New Delhi summit focus toward earth under single umbrella for future growth as shown in figure 14. It was the first G20 summit held in India.

G20 India has put forth six agenda priorities for the G20 dialogue in 2023:

- Green Development, Climate Finance & LiFE
- Accelerated, Inclusive & Resilient Growth
- Accelerating progress on SDGs
- Technological Transformation & Digital Public Infrastructure
- Multilateral Institutions for the 21st century
- Women-led development

On 26 August 2023, Honourable Prime Minister Modi expressed optimism about the G20 countries’ evolving agenda under India’s presidency, shifting toward a human-centric development approach that aligns with the concerns of the Global South, including addressing climate change, debt restructuring through the G20’s Common Framework for Debt, and a strategy for regulation of global crypto currencies.

Indian Prime Minister Mr. Narendra Modi welcomed the African Union to take a seat as a permanent member at the start of the G20 summit in New Delhi, marking the first expansion of in a group of 20 major economies, in 1999.

The invitation of African Union in G20 by India had made the biggest achievement of its G20 presidency till now. The participation of African Union in G20 has turned to G21, marking a bench mark, making India a current leader at International level.

Figure 14. Vasudhaiva Kutumbakam or “One Earth, One Family, One Future”, G20 Summit



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RESULTS

The statistical analysis done shows organizational success hinges on effective leadership capable of steering its workers to endeavour toward common goals. With this view, it is imperative to facilitate leadership development training programs to equip, would-be leaders with the requisite skills to sustain and improve their competencies, analyse situations, prepare a plan of action, and influence the manner in which activities are conducted in a work unit (Baron, I., Agustina, H., 2017). To measure the effectiveness of leadership skills training being applied at the corporate level, the facts and figures surrounding the impact of organizational or corporate leadership training programs are explored. The result of Leadership Training Statistics for 2024: Data, Insights & Predictions (Imed Bouchrika, 2014) are highlighted below:

- i. **State of Leadership Training:** Statistic data in Table 1, shows that companies are increasing their budget on leadership training programs.
- ii. **Benefits of Leadership Training:** After undergoing leadership training, participants were found to have a 25% increase in learning and 20% in overall job performance (Lacerenza, et. al., 2017). This signals that a lot of programs are centered not only on leadership theories and practices but also on how they can be applied to the office setting.
- iii. **A Modern Approach to Effective Leadership Training:** Leadership training has to evolve to account for technology’s entry into business as well as the preferences and behaviours of today’s leaders (Deloitte, 2019). Research suggests that innovating on traditional techniques has contributed to a 9% improvement in organizational growth, profit, productivity, and transformation (Towards Maturity, 2019).

Table 1. Global investment in leadership training program

| Year | Training Budget (\$) |
|------|----------------------|
| 2010 | 271.7 |
| 2015 | 355.6 |
| 2018 | 366.2 |
| 2019 | 370.7 |
| 2020 | 169.4 * |

*Showing training budget during COVID-19

Table 2. Performance improvement due to leadership training

| Year | Performance in %age |
|-------------------------|---------------------|
| Leadership Behaviour | 28 |
| Learning | 25 |
| Organizational Outcomes | 25 |
| Overall job performance | 20 |
| Subordinate outcomes | 8 |

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Table 3. Leadership style change in 21th century

| Training Approach | Leadership Style Change %age |
|---|------------------------------|
| New Technology | 75 |
| The pace of change in workspace | 66 |
| A change in employee demographic and expectations | 57 |
| Changing custom expectation | 53 |

CONCLUSION

Technologies play an important role in entrepreneurship developments. In current scenarios, multinational companies are awakened by the facts that social media and networking platforms will play major tools for future success, as these tools encourage new inventions and collaboration globally. Small to medium scale trades are also climbing high on board as technology has more benefits with affordable amount.

The impact of technology towards leadership is considerable and beneficial. Important and challenging to all the leaders is to choose right technology at right time and implement it in right direction along with reduced human efforts. Technology has not only changed the working and operating style but it has also produced new leadership style. Leaders now adapt new inventions and utilize technology to lead their teams and work. We expect to see even bigger technology transformation in influencing business towards techno-leadership.

Several studies have proven leadership training’s effectiveness in producing not just strong leaders, but also stewards of positive outcomes (Lacerenza, et. al., 2017; Mandachian, et al., 2016; Baron & Agustina, 2017). The program’s benefits include significant increases in learning, leadership behaviors, and organizational outcomes. It also contributes to a slight increase in subordinate outcomes (Lacerenza, et. al., 2017)..

It is important to note that technology and its advanced solutions have penetrated the global business sphere, so creating a leadership training program that resolves the aforesaid concerns, alone, won’t be enough to produce the desired results. Leadership development organizations understand the evolving requirements of leadership in the modern setting. These organizations emphasize the development of tech-savviness, the ability to discern ideal solutions through analytics, and the creation of a collaborative environment among leaders and teams. By partnering with leadership training organizations, businesses can ensure comprehensive and tailored leadership programs that address the specific needs of the digital age and foster effective leadership practices in a rapidly evolving business landscape.

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