

Latest Technologies used in Industries for Better Production: An Extensive Review

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Abstract

Technology had grown very fast in recent years in terms of all types of techniques used in various industries. Various types of trends can be observed in almost all sorts of technologies being used in various fields of the market. The utilization of new technology and its trends had become very interesting and making the functioning of the works smoother and more comfortable also reduced the utilization of more man power and reduced the problems faced with manpower. The utilization of such technology trends is giving proper market analysis and also better business processing applications. The trends of the market can be observed or understood within minutes by the utilization of such advanced technologies. In the current article, an attempt has been made to provide the details about the latest technologies and their trend of utilizing in industries for manufacturing and their future scope of development and their utilization in the current day applications.

Keywords: Technology, Trends in Research, Utilization of the Latest Technologies, Market Trends, Business Applications, Markets, Fields, Trends in Technology

1. Introduction

The utilization of various devices and their functioning had been made the life of the people more comfortable and smooth. The technology had to increase a lot day by day in almost all the parts of the world and the utilization of such technology-based developed devices also growing a lot[1][2]. The people are much addicted to these sorts of devices for their day to day life works and other things of the time. The utilization of mobile phones had increased a lot in the world today. As a result, communication between the people had increased a lot and also become faster. The number of people purchasing mobile phones or using mobile phones is increasing a lot. The features of such mobile phones are also being changing from time to

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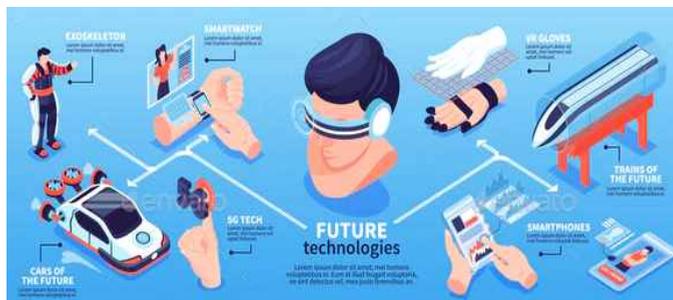
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time. Nowadays, the mobile phone had become as one of the essential devices or component in the life of a common man or a businessman or a billionaire. Almost all the public are using these mobile phones for various purposes.

As a result of this tremendous growth in technology, especially in mobile technology, televisions, music systems and other devices, the life of a common man were becoming more comfortable and more joyful life. The people are addicted to them very much as a result of such issues, and the problems are being increased. The utilization of these phones had also given a life of identifying the criminals, identifying the persons who were the actual users of such devices or not, the government had to identify the persons with the device data by sending the messages like the identification number to the registered mobile numbers, banks are using the registered mobiles for identifying the actual customers by sending one-time password procedures etc.[3][4]. The people can be identified quickly and also some times, and the people can be faced some serious problems also with the growth of this technology. Very few people are intended to misuse such beautiful technologies. Still, almost all the other sorts of people are getting excellent benefits and suitable employment and other good profits to the companies and also for the government.



[Fig. 1] Future Technologies Model Example[2]

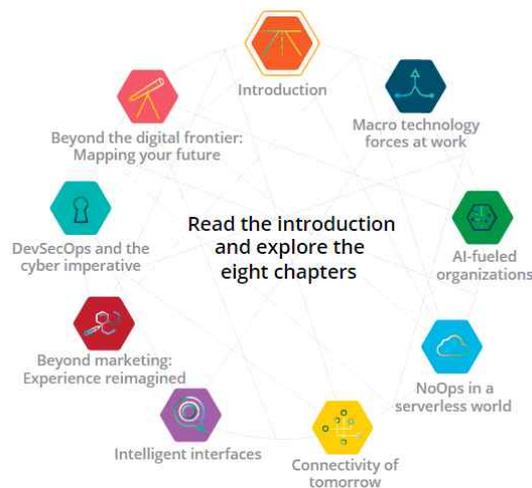
The other vital technologies are the facilities that were being embedded in these mobile phones and other devices. Nowadays, we can think of a mobile phone as a small computer in our hands. This device can be used not only for making calls and to receive calls. It can be used to process the data, internet connectivity and all financial and other tasks can be processed with these mobile phones with the presence of internet connectivity. Providing internet facility to such devices was the excellent facility created. With such technology of provision, today almost all the day to day things of a human being can be processed or can be completed by using such mobile phones. The images, photos, videos, movies, songs, transactions, bank transactions, data transfer, Bluetooth transfer likewise almost all types of

works can be completed with these sorts of devices. At the same time, the vulnerability of attacks from other users from various locations to these devices is also critical[5][6]. They can be easily hacked or tracked by any user without proper protection.

The working of these advanced technologies for communications had grown from various generations of technologies. The generations had started from the first generation of the communications to the second, third and fourth generation of the communication technology. This fourth-generation can be termed as 4G technologies. In all these technologies, the difference was the growth of the data transfer speed, communication to the customers, communication to the users, utilization of other resources etc. Now the latest trend for utilizing such technologies is the 5G communication networks. Now the world is behind the utilization of such fast and reliable network technologies to make the network communication more fast and reliable for public utilization. The other technologies are the presentation of the material in the 3D model, and the technology can be called as the 3D printing. The other technology was the block chain technologies, Artificial Intelligence and its applications, machine learning and its applications, data analytics and its applications etc.

2. About Various Latest Technologies

In the current section, a detailed analysis of the list of various technologies that were gaining the critical day to day and their importance had increased a lot[7][8]. Some of those technologies which were making an impact on the business and other issues in the market today are discussed in detail in the section.



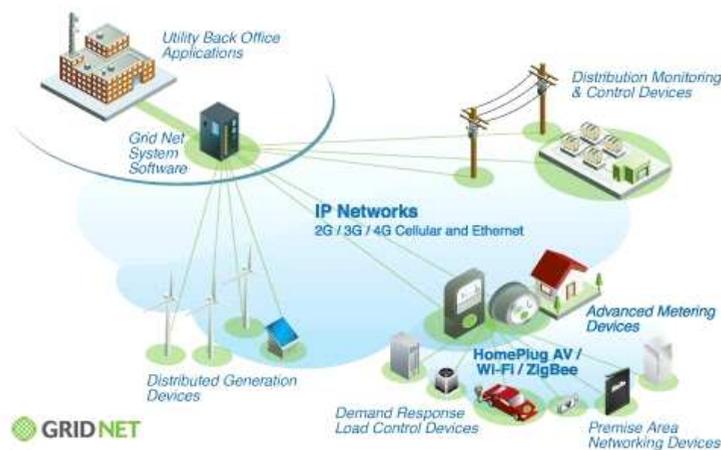
[Fig. 2] A Cyclic Model of Latest Technologies

The list of technologies considered are,

- A. 5G Networks
- B. Artificial Intelligence
- C. Automatic Devices
- D. Block chain technologies
- E. Data Analytics

2.1 5G Networks

5G networks are the new generation and advanced generation of mobile communications developing mainly in recent years. This network model provides fast internet connectivity, more speeds of data transfer and other faster communication model networks[9]. Combining the current latest research models and the new technologies will give better outputs and other results. With this current network model, the operating speeds of the network will be increased a lot. By the utilization of these networks, the utilization of current trends and current technologies will increase the usage of the Internet of Things and other technologies. The infrastructure for these networks also has to be established and forgetting the better results, and these networks should be installed and established in a more significant way[10][11].



[Fig. 3] 5G Network Model[3]

The growth of this technology will be breakneck speed due to the reasons that the people are habituated with the usage of fast internet. The speed of the current networks will be increased to the next level of faster networks like the speed in Gigabits. The current networks are working with a speed not up to the range of Gigabits, but in 5G networks, the networks

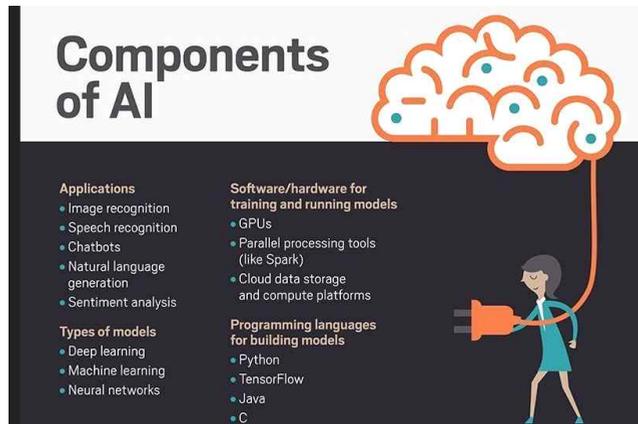
are equipped with very high and fast networks. The transfer of data in either features will be processed in high volumes, and high range like the other models and the transfer of data will be very speed. The downloading speeds also increased a lot such that the download speed cannot be observed by even the users[12]. The network models are designed in such a way the networks will work faster and quiet conversations and faster processing of data and transfers.

2.2 Artificial Intelligence

One of the latest technology and technology model applications developing in the area of computer science was Artificial Intelligence. This area of applications is increasing from day today. The utilization of these model applications is increasing day today. The features of this application area are used in various fields of applications like the automatic driving, automatic processing of applications, robotic applications, machinery design and manufacturing and other essential areas of the market. It is the process of making human resources, and the intelligence of the humans will be used by the machines to perform a particular task[9][10].

Some of the applications and other areas where the utilization of this technology can be used are like the machine vision, machine learning, expert systems etc.,. The process of designing the machines with various models with various numbers of both software and hardware components and their working can be defined and processed is an expensive process. The acquiring process and the training process for such devices and the utilization of such devices is always an expensive issue. The working can be made easy by making the machines, and the people who were using such machine should be given specialized training such that the devices can be performed or processed at very less operating costs and other benefits[12-14]. Some of the essential topics and other issues to be studied for the better functioning and working of the current models and applications are observed as follows,

Some of the essential classifications or the types of artificial intelligence models can be observed in the current day trends are like the limited memory, reactive machines, theory of mind and self-awareness. The applications and the processing of all these sorts of applications can be considered for the better understanding, and the functioning of such applications can be useful for the better results and better utilization[11]. The memory should always be useful, and the limited memory may not be sufficient. Enough memory should be given to the machine for storing massive data and for further processing of such data.



[Fig. 4] Artificial Intelligence Applications[4]

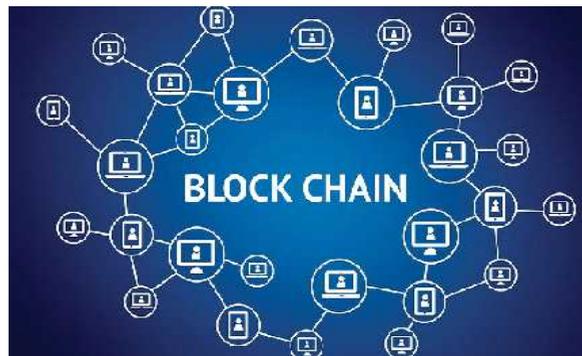
2.3 Automatic Devices

The other applications to be considered for the growth of recent technologies are the development and utilization of automatic devices in almost all fields of work. By the introduction and development of such applications might increase the more safety and more comfort to the people in the current day society. Several devices are developed such that to make the tasks easier[14][15]. The ticket vending machines at stations will reduce the congestion at stations and also the work can be processed in a faster way. The human intervention and the processing time can be reduced and saved or better utilization.

The automatic identification of the vehicle speed and to control the vehicle speeds at proper time intervals and also to control the vehicles for the safety of the public in the vehicles and public on the roads. The speed of the vehicles can be controlled by keeping the Speedometers at various locations can be controlled. The automatic drink content verification was one of the other essential tasks to be verified for the other set of applications. The automation process of manufacturing units also can be used for the safety of human beings also reduces the operational costs and also saves human lives. The automation process also increases the productivity of the industries and also reduces the threats to human lives. The other device is like the mobile phones which are making the processing of payment of various bills through mobile devices and will reduce the human standing in lines to pay their bills and also reduces the congestion at various locations of the society[15]. Nowadays, the people are trying to automate the taxis which will drive themselves to the locations such that the users can go their locations without any hassles and without any drivers such that the operational costs of such vehicles will be reduced a lot.

2.4 Block Chain Technologies

The method of the process of block chain explained in detail in simple terms as a series of data that is being moved to the process of computers that can be managed by a group of computers and those computers which cannot be owned by any single authority or any company or a firm. The data can be sent in the forms of the block, and the data embedded in such block cannot be accessed by any other persons as they are encrypted with some principles of encryption. The main advantage of this model or this method was the network of this block chain has no central authority[13][14]. The primary unit that can be controlled by this unit was not at a single point. As the data can be shared with handy units and the data can be used and useful for each and everyone in the network with proper login credential data.



[Fig. 5] Blockchain Model Example[4]

The main advantage and the most critical factor for the current model were by using this technology and its applications, the transaction cost for all the transactions which will be processed under his model can be done at low cost and in some cases no cost of operation. In the current technology, the data can be transferred from a source node A to the other node of destination node B in a fully automatic mode and safely transferred. The clients of both parties and anyone who is going to participate in the transaction will initiate the transaction by creating a new block. When this block of data is being transferred in the network, and it crosses to various numbers of nodes and the other number of places and locations with millions of nodes and in and around the network.

The block of data that was added to the chain which will be stored across the network by creating a unique record with a history of creating it. If the data in the record will be a small change, the data content in the entire network will be made changed such that the changes

need to be updated to all the nodes in the entire network with which a large number of questions will be generated and will take a lot of permission and message will be a big problem to the people who made such changes[15][16]. Bitcoin is one of the critical feature of these models such that to create and process the financial transactions.

The best example for the current application was the ticket booking concept in a railway counter or through online. In general, the tickets will be booked and confirmed in a railway website or through a web application. In general, for processing such a ticket through credit card, the company takes the processing charges for such ticket booking. By using the current technology of this application, the entire processing of ticket booking will be considered to the entire block, and the ticket has been added to the ticket booking block chain. As a result, the ticket will be processed securely as a standard ticket to the customer and for a specific route and the entire train network[17-20].

2.5 Data Analytics

As the data about various applications are growing day by day and the need of processing such data for better understanding and better conclusions are increasing a lot. For the current applications, the requirement of such applications and their processing is highly needed for the researchers and also the customers with various features of ideology. The people may have different opinions about various objects and can be defined in a better way for better understanding. As a result of such things, the day to day utilization was increasing a lot. Nowadays, the utilization of various algorithms and other models are used in a better way for analyzing the data and to get better results for analyzing the data. In general, the techniques followed in these methods will reveal some important and exciting data trends and changes such that the results optimized in a better way to increase the overall efficiency of the considered system or the considered model[12][13].

The critical processes to be involved in the process of data analytics and analyzing of the critical data are as follows,

The first and most crucial step to be followed was the collection or identifying the requirements of the data and primary data requirements. The grouping of data is also done in the first stage, and the resultant data was might be either is categorized as a model or in the form of numerical models. The data can be classified into various forms with various attributes like the gender of a person; the income of a person or age of a person is some demographic values[14][15]. The other step to be followed was the collection of data with a variety of

methods or the steps like online websites, online stores, environmental sensors, computers etc. After the completion of data collection, the data to be organized in the form in such a way the data can be processed or can be implemented in a conventional way of fashion. After the completion of the collection of data, the steps or the methods to be implemented on such applications and the data was analyzed in the requirements of the users or the form of the requirements of the users.

3. Conclusions

In the current article, an attempt has been made to provide various technologies that were being used in industries in recent years which had made a revolution in the industry especially in manufacturing. These technologies had changed the industry and also had improved the production of the industry. How these technologies might change further more in industries had discussed in detail and their impact on the society also had discussed. The researchers who were in thought of learning about the current trends in recent technologies can go through this content and can be helpful for further research more in-depth into these topics.

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