



5G TECHNOLOGY & DIGITALISATION

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Abstract:

With rising population of the world, rising world income, growing demands for varieties of goods & services & growing globalisation, there is huge potential for business to grow. However the decision on what, how, how much to produce & whom to sell in this globalised world Industry 4.0 needs the support of Information & communication technology. ICT plays very important role in collecting & analysing information of the market which helps industries in rational decision making about production, sales, use of resources in the production etc. Global consumers with greater income in the hands are looking for better quality unique products along with better quality customer care services. This all needs a direct information transmission from customers to producers. If the world wishes to see 4th industrial revolution with limited resources, demand for better quality customised good & services then we need technological revolution to support it. A shift from fordist to post fordist era has made world to experience a shift from assembly line of production to decentralised project based production process. This new production system is data intensive & so we need technology which can collect, process & analyse data fast so as to bring changes in the production accordingly. The latency and speed limitations of current technologies (4G and wired networks) are the predominant reasons hindering the ability of enterprises to move toward a decentralized workforce. 5G can fully support a decentralized workforce and thereby reduce the non-productive workspace and support real time interactions.

Introduction:

Most of the countries especially developed countries are operating with 4 G technology but industries now need 5th generation of wireless network to support further industrial growth. Covid 19 have highlighted the pressing need of 5G technology. Covid 19 crisis have made us realise that how deeply we rely on internet in every aspects of our modern life. Our activities in day to day life can be performed even better with the help of internet. Countries like China, Republic of Korea, Japan, USA & Europe has already taken steps to create <http://www.ijaar.co.in/>

infrastructure & awareness about 5 G technology. Taking view of the benefits 5G can bring to the entire value chain across consumer and business, Government of India (GoI), through Department of Telecom (DoT) has released the Draft National Digital Communication Policy (DNDCP), and emphasised on creating an actionable plan for the rollout of 5G application and services. To address timely development of 5G infrastructure, DoT has also setup a high level forum '5G India 2020' to develop the roadmap for operationalising 5G services in India by the year 2020.(Deloitte Report 2018) The current businesses & industry are using AI, IOT, Big data these are impossible to perform efficiently in the absence of 5G technology. The 5th Generation Wireless Network brings with it impressive data speeds and latency rates thereby benefiting many sectors in the economy. Some of the benefits to the sectors are as follows:

Benefits of 5G to business –

Business can explore their potential better by using IOT, Big Data which can be supported by 5G. 5G helps in impressive data speeds & Latency rates. Businesses can take the benefits of 5G technology in its digital marketing. 3G & 4G technology were not able to support mobile video advertising. But 5G technology enable quicker & easier loading of content allowing for seamless integration across various social media platforms. Thus businesses now need to create innovative content creating technologies including AR & VR. 5G will also help in improved personalisation & customization as this technology will help in collecting user data in real time.5G will also allow more interactive experience for consumers & producers. Interactive advertisement are heavy & data intensive. Thus existing digital technology can be made more accessible with the help of 5G technology.

Benefits to industry –

Introduction of new technology in production like use of robotics which can perform labour intensive work requiring precision as well as work in hazardous environment with better process quality & less time in production.

Benefits to agriculture & allied industry- India is although called an agrarian economy, this sector is however able to explore only 50-60 % of its

potential. The main causes for the remaining unrealised potential can be attributed to uneven agro climatic conditions, mismanagement of water & land resources, infrastructural bottleneck, asymmetric information & lack of data capture & analysis. Introduction of digitalisation with IoT, Big Data, AI & Drones will help in overcoming most of the above obstacles in efficient production & distribution of farm output.

Benefits to automotive industry –

In automotive industry where one vehicle with other elements like devices, infrastructure, other vehicles etc. could enable real time traffic routing, emergency breaking. To use all these potentials of this industry however needs high speed network. 5 G technology can definitely support growth of such industry.

Benefits in terms of sustainable global growth-

Use of 5G technology with digitalisation of energy sector will enable better utilisation of energy resources helping in attainment of environmental sustainability. Smart power generation, smart meters for homes, remote sensing of energy sites to avoid human error & identify energy leakages are some of the benefits that will accrue with digitalisation associated with 5G technology.

Benefits to health care industry –

Use of 5G technology in healthcare industry will help in attaining inclusiveness of health care sector in remote areas where medical facilities can not reach easily. Doctors can remotely diagnose patient & thereby provide quick expert treatment to cure patient's illness. Online consultation with high data speed will help to reduce long waiting time for the patients. During covid 19 Vaccination data was centralised & drive was successfully implemented because of digitalisation of its administration. We could have reduced no. of death due to lack of supply of oxygen cylinder wherever required if we would have digitalised this data with high speed network

Benefit to Media & entertainment sector –

This sector is very sensitive to consumer preference. Thus maintain the quality of service is the main task of the business in this sector. Increasing

popularity of Netflix, Sonyliv with increasing numbers of short films & web series entertaining viewers is showing bright future for media industry. However, all this needs low latency period & high internet speed which can be fulfilled by 5G technology. People enjoy watching IPL match on television as it provides enriching experience to viewers through it features like replay, real time language translation, players view from different angles etc.5G network will enable live streaming of events which will help in increasing viewers & thereby media business.

Benefit to retail industry –

With growing income, living standards & consumerism retail industry is likely to have bright future. Consumers with high income but less time available for shopping in crowded city, retail industry can explore its potential business through online shopping. Even interactive magic mirrors in the shopping mall can help in sending customised alerts regarding discounts or most suitable product for every particular customer on real time basis which helps in enhancing shopping experience & boost sales. Thus 5G will enable online retailers to gather more data & create more business opportunities, increase revenues & sales & gain consumer loyalty.

Benefit in terms of smart cities –

Rising national income with rising per capita income creates pressing demand for better quality of life by citizens. Video surveillance & analytics, GPS, intelligent traffic & transport management, smart grid & metering system, intelligent solid waste management are assumed to be features of smart city. Attaining all these features of smart city needs use of 5G technology. Digitalisation with 5G technology of such smart city will help in reducing operating & maintenance cost & improve the quality of municipal services of such cities. Given all these benefit of 5G technology in this digital world, every country needs to build up infrastructure to enable 5G technology to function. India has already stepped in 2017 to develop 5G technology. Government of India is also seen keen to undertake various measure for the implementation of 5G

technology. However India faces following challenges in implementation of this technology. They are as follows:

Lack of uniformity in policy framework-It has been observed that in different states of India, different levies & charges are imposed on telecom service providers. Non uniform policy framework hampers the rolling out of optical Fiber Cables & towers. As mentioned above the benefits of 5G technology to so many sectors, it necessitates extensive infrastructural development which is delayed due to lack of public funds.

Limited giga backhauling – To bring 5G technology in India, a strong backhaul network is required which needs support of broadband network, IoT, Big data, cloud. But all these are capital intensive in nature. India atleast need approximately USD 8 billion to provide tower assets in cities. E band & V band which are cost effective solutions for 5 G technology are yet to be introduced in India.

Lack of digital literacy – Implementstion of 5G technology is hindered by lack of digital knowledge among employees. Education system of the country need to transformed to suit the need of job market so as to supply digitally intelligent workforce to the market. Along with this India suffers with digital divide between rural & urban India which may reduce its uses.

Human factors – lack of political will, ego,fear of losing jobs & skepticism are some of the human barriers in the implementation of 5G in India.

Conclusion:

India having rising national income with rising standard of living of people, there is scope for India to benefit from 5G technology. India being a part in global supply chain may lose its share if it does not upgrade with 5 G technology. Indian government need to carefully plan with cost benefit analysis the implementation of this technology. With lack of resources, Govt needs to population & end users to be covered, identification of cities for rolling out of 5G, provision of cybersecurity, minimization of cost of digitalisation etc.

References:

1. Deloitte report (2018) “ 5G – The Catalyst to Digital Revolution in India”

2. Fangwei Zhao (April 2020)” Imagination of Mobile Media Through Advertising: Thematic Analysis of 4G and 5G Ads in China and the US”
3. <https://economictimes.indiatimes.com/tech/internet/indias-internet-economy-to-reach-250-billion-by-2020-report/articleshow/58065967.cms>
4. Report of World Economic Forum (Jan 2020)“Impact of 5 G – Creating New Values across Industries & Societies”