

EFFECT OF DIGITALIZATION & AUTOMATION ON GLOBAL TRADE -INDIA'S PERSPECTIVE

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ABSTRACT

A high degree of automation would be enabled by digitalisation and will bring drastic changes in our lives. At present the world has a rapid technology adoption, a lot has been digitized. Digitalisation will have far-reaching implications for major all the sectors, like the banking, corporate, household and public sectors. The spread of technology and data will also have a significant impact on economy of a country (Chaudhuri, P. & Kumar, A. 2015). However, cross-border trade is still parallel with paperwork. The development of blockchain, advanced robotics, and the availability of Internet shall bring a profound shift for the future. In this regard the paper tries to identify how digitalization and automation has impacted global trade and how global trade would look like in future?

Keywords: Digitalization, Automation, Blockchain, Robotics, Technology, Digital, Transformation, Global.

DEFINITION

Digital is not just about technology implementation. It comprises the transformation of business, enterprises and governments using technology, so as to make experiences better, communication effective and work simpler. Four aspects social media, mobility, analytics and cloud— commonly called SMAC, have characterized digital ("Digital bridge to growth", 2019) whereas digitalization refers to improving or transforming business operations, functions and processes by accessing digital technologies by infusing innovations and new ideas.

INTRODUCTION

In the second half of the 20th century, significant growths had taken place that altered the geography of trade movements. Reducing transport costs and demolishing most trade limits through GATT and later the WTO meant less confrontation in global trade. Also, technology and capital as production factors effortlessly moved worldwide. (Lower trade barriers, stronger global trading system can help end extreme poverty, 2015)

In the recent situation the world has very quickly accepted technology and a lot has been digitized. It is also significant to form the future of digital economy. Empowerment in the arena of digital business is the

newest economic requirement. It reduces obstacles and generates development opportunities. Though, cross-border trade is still hand-in-hand with paperwork. The growth of block chain, progressive robotics, and the accessibility of Internet shall fetch an intense shift for the future. Digitalisation will have extensive consequences for major all the sectors, like the finance, commercial, household and public sectors. The spread of technology and data will also have a noteworthy influence on GDP of a nation.

On 1st July, 2015 our honorable Prime Minister, Shri Narendra Modi took a lead towards "Making India Digital". This meant to join rural areas with high-speed internet system and develop its digital literacy. A high degree of automation that would be allowed by digitalisation will carry radical modifications in our lives. Prominently it would alter how things are being shaped and additionally this also would influence worldwide trade flows (Katakam, 2018).

GLOBAL TRADE OF GOODS

Global trade also recognized as international trade, which is the import and export of commodities and services through out intercontinental boundaries. Dialogue on global trade or international trade has constantly been around tariff, subsidized rates and changing policies and strategies of the government. Emphasis also desires to be towards the brighter side of

trade where the innovative technologies have brought a Fourth Industrial Revolution in global trade. It is transforming trade by creating the procedures more comprehensive and well organized (Schwab, 2016).

- **Digitalisation of Trade Documents:** With the development of shipping containers the foundation for globalization was set. More recently, technologies such as Optical Character Recognition (OCR) to read container numbers, Radio Frequency Identification (RFID) and QR codes to recognize and trace shipments, and basic digitization of trade documents have improved the reliability and competence of the international trade. By choosing these variations of trading, it can be made better organized, more comprehensive, and less expensive. Governments and trades need to comprehend the present trends in order to stay ahead.
- **Blockchain- Trust Machine:** To help make trade move faster to being paperless, Block chain could play a major role. It confirms instant, across-the-board transparency, and as transactions are added to the block chain they are time-stamped and cannot be simply altered. Block chain and blockchain-based distributed ledger technologies has great influence on the global trade supply chain. Block chain technology permits products and transactions to be traced effortlessly. It is also being used to shorten the long and tiresome process of procurement of Letter of Credit (LoC), a payment method used in international trade. A block chain is a decentralized, allocated record or “ledger” of transactions in which the transactions are saved permanently and cannot be altered by using cryptographic methods. Verification of transactions is attained through cryptographic means that controls the rules by which the ledger is updated. Participants in a block chain can access and check the ledger at any time. Therefore, the Economist call Blockchain as a “trust machine”. Block chain can digitalize and automate trade finance procedures and provide smooth supply chain finance. Block chain pilot projects are being run to check and provide for faster, simpler and inexpensive cross-border outflows, thus pressurizing the developed institutions to reconsider the way they have been doing trade. Pilot projects are inspiring, but a
- number of technical and regulatory issues need to be tackled before the technology can be used in a extensive manner (Ganne, 2018).
- **Artificial Intelligence and Machine Learning:** It can be used to enhance trade shipping routes, manage vessel and truck traffic at ports, and interpret e-commerce search inquiries from one linguistic into other language and reply with interpreted inventory. More than efficiencies gains and better consumer services, AI can also be used to make international trade sustainable.
- **Mobile payments:** From Apply Pay to Alipay to M-Pesa, mobile payments are changing the way we live and linking more and additional people to benefit market opportunities. According to the World Bank Global Inclusion Database, the amount of people who gained access to bank accounts augmented by 20% between 2011 and 2014, and mobile money accounts were a main drive for financial inclusion, particularly in developing economies.
- **Trading Services via Digital Platforms:** It's progressively easier to trade services online or digital platforms like Upwork which let users discover service providers from all over the world for a extensive range of services, and can find anybody from a web developer in Serbia, to an bookkeeper in Pakistan, to a virtual assistant in the Philippines. Meanwhile, startups such as the international learning platform VIPKID pairs up American educators with Chinese children to educate English online. These digital platforms flawlessly attach the customers with service providers, in a way that wasn't happening before when such expert services were brought in person.
- **Digital Goods:** Today numerous goods that used to be traded in physical formats - such as books, magazines, and movies, are now sent in digital format throughout the Internet with practically no distribution and transportation costs. Customers can select from a near-endless supply of games, movies, music, books, journals, and tabloids from anywhere in the world. Although most digital goods are consumed in the country where they were shaped, a rising share is to customers in foreign countries. For instance, Netflix, delivers movies and television shows online, has become an progressively

international business. By the end of 2015, nearly one-third of its streaming customers lived outside the US, an evidence to the speed at which firms can ascertain a world wide footmarkis due to the extensive digital technologies.

- **Digital Education:** Even teaching has become a digital good that can be worldwide traded, through the increase of online training and educational courses. The development of Massive Open Online Courses (MOOCs) may not complete lyeradicate the need to travel to become a distant student, but they allow people everywhere the world to tap into world-class information. Khan Academy, a non-profit provider of free learning around the world, reports that 25 percent of its users are from countries outside the US. More over it propose more than 600 free online courses in 12 languages. Closelythree-quarters of Course users come from countries other than the US, and nearly one-third are from India, Brazil, Russia, and China.

Thus, the Fourth Industrial Revolution has the potential to increase the global income levels and also improve the quality of life of the people around the world(Schwab, 2016).In the Figure 1 given below we can see how the people have been receiving the salaries in their account directly.

Except in low-income economies, most people getting government payments receive them into an account

Adults receiving government payments in the past year (%) 2017

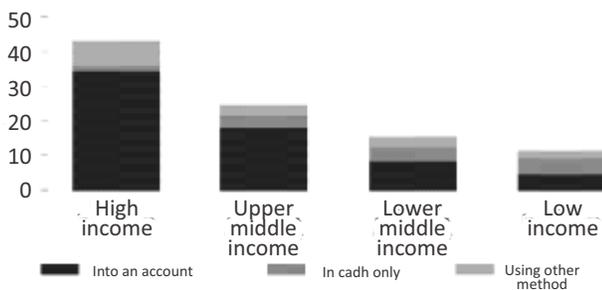


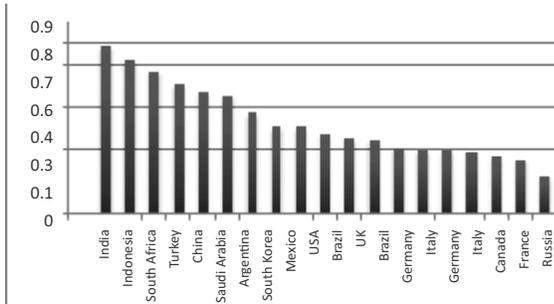
Fig. 1 Source: Global Findex Database

HOW DIGITAL TRADE IS TRANSFORMING GLOBALISATION

- Initiallydigitisation has allowed physical flows through the use of “digital wrappers” around traditional products — such as sensors implanted in goods as they flow through the global value chain. This creates their flow more effective and valuable. These sensors are critical enablers for the (Internet of Things) IoT(Fan &Chiffelle, 2018).
- Furthermore, with the formation of online platforms for manufacture, exchange, and consumption. This stages range from e-commerce sites, including Amazon and Alibaba to the UK Government's G-Cloud or Airbnb, which provide individuals and minor businesses global spread for their goods and services. Digital stages are empowering whole new methods of cross-border exchanges, opening up new possibilities of globalisation.
- Thirdly, the studies have forecasted that there would be enormous influence of 3D-printing on global trade. Once high-speed 3D-printing is accepted by the masses it would be inexpensive, consequential in reduction in global trade by as much as 25%. 3D - printing needs fewerlabor and reduces the needs for imports. 3D printing will in future be able to manufacture products through computer-aided design (CAD) files, which will be conveyed electronically. These RAM technologies have the potential to alter the way the products are manufactured. In its place of raw materials being shipped around the world, the CAD files will be electronically conveyed and used in the 3D printers to manufacture products (Albright, 2017).
- Over a period of time, these technologies will entirely shift the competitive advantage away from high volume low cost manufacturers in emerging countries toward advanced countries, which are becoming digitalised. It is exciting to note that 98% of hearing aids universal are being manufactured using 3D printing. The 5 main industries consuming 3D printing are in Medical Appliances, Aerospace, Automotive, Consumer product industry and Industrial machinery (3D printing: a threat to global trade, 2017).
- The increasing powers of digital giants like Google, Apple, Facebook, Amazon and Alibaba will further make regulatory dilemmas. There is a crucial

requirement for the developing countries to rapidly grow their capacities for facing the rising challenges of the digital economy. (Fan & Chiffelle, 2018)

G 20 Nations Mobile Usage@ of internet usage from Mobile



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Fig.2 Source: <http://gs.statcounter.com/press/india-amongst-world-leaders-in-use-of-mobile--to-surf-the-internet>

Table 1 provides us with the G-20 Nations using Internet and Figure 2 provides us with the graphical representation of G-20 Nations using Internet

Table 1. G- 20 Nations Mobile Usage

| Countries | % of internet usage from Mobile |
|--------------|---------------------------------|
| India | 79.00% |
| Indonesia | 72.30% |
| South Africa | 66.70% |
| Turkey | 61.10% |
| China | 57.20% |
| Saudi Arabia | 55.40% |
| Argentina | 47.10% |
| South Korea | 40.60% |
| Mexico | 40.50% |
| USA | 37.20% |
| Australia | 35.00% |
| UK | 34.80% |
| Brazil | 30.70% |
| Germany | 29.60% |
| Italy | 29.60% |

| | |
|--------|--------|
| Canada | 28.50% |
| France | 26.40% |
| Japan | 25.50% |
| Russia | 17.80% |

Source:<http://gs.statcounter.com/press/india-amongst-world-leaders-in-use-of-mobile-to-surf-the-internet>

Table 2. No of Internet Users World Wide

| Countries | No. of Users in Millions |
|-----------|--------------------------|
| 2005 | 1024 |
| 2006 | 1147 |
| 2007 | 1367 |
| 2008 | 1547 |
| 2009 | 1729 |
| 2010 | 1991 |
| 2011 | 2184 |
| 2012 | 2424 |
| 2013 | 2631 |
| 2014 | 2880 |
| 2015 | 3170 |
| 2016 | 3417 |
| 2017 | 3650 |
| 2018 | 3896 |

Table 2. provides the No of Internet Users World Wide from 2005 to 2018

IMPACT OF DIGITIZATION ON INDIA

Digitization is playing a very noteworthy part in serving the Indian economy to flourish. It is generating job prospects for young generation. Everyone in the country is discussing about information technology. Also, the “Make in India” initiative fortified the youth to start enterprises and this turned them into dynamic entrepreneurs. Digitization has made this feasible. Through demonetization government has taken a robust step in order to confine the flow of black money in the nation and avert the related difficulties.

Finance Minister Arun Jaitley has said in his budget

speech that the government has a target of 2,500 crore digital transactions for this fiscal year. Total payments via digital instruments are expected to hit \$500 billion by 2020 (Digital India Statistics- 1 Trillion Digital Opportunity for Growth, 2019).

Among 201 countries India is ranked at 127 in terms of internet penetration (Internet Live Stats 2016). The country has the second-largest number of users worldwide, although its internet penetration is only 13.5%. According to the latest estimates, around 35% of the Indian population access the Internet using multiple devices (Internet Live Stats 2016). India is thus considered to be one of the fastest growing online markets, and thereby part of the strategic focus of many internet-based companies (Mukerji, 2019).

A study by, Rashmi Banga of UNCTAD assesses India's digital infrastructure and value addition by digital services using data from the World Input-Output database. In her findings she states that while India has made substantial progress in digital infrastructure, it lags behind internationally. India's software developer population was estimated to surpass that of the US and hit 5.2 million in 2018, but contributed only 2% of global software products in 2017. Internet users have increased from 0.1% of the population in 1998 to 36.5% in 2016, but India ranked 134 out of 176 countries in the UN's Information and Communication technology development index(Alexander, 2019). In comparison to China, India's progress in big data analytics, AI and robotics have been lacking behind. Our robot density stands at 3 against China's 68. India ranks third in the world in one area that is the value added by digital services for exports(Banga, 2019).

- The Indian government is encouraging the public to cease relying too much on cash dealings. The goal of this initiative is making Indians accept digital payments. Digital dealing induce people stand by the law, which is helpful for the economy. By consuming plastic money, people can enjoy freedom and safety because it functions on technical grounds. Digital payments are helpful in any part of the world. People who involve in terrorism and money laundering activities mostly use cash to transact. Consequently, consuming digital payments is a decent way to reduce terrorism and money laundering.
- The Indian society issensing the influence of digital

economy in terms of employment and role to the gross domestic product. Digitization in India has made it easier for citizens to access high speed internet and simplified mobile banking. Attainment of the Digital India scheme is now simpler because a Common Service Center is accessible in the cloud, where you can assign secretive data. The cloud is safe and secure from cyber crimes (Alexander, 2019).

- Digitization contributes enterprises to streamline their procedures by deleting the need of paperwork. Banks are one of the main beneficiaries of digitization. They can now use certain processes to allow their staff to do additional work.
- Digitization also makes it simpler for the nation to grow by promoting the use of e-services. It has made it easy-going for citizens to use many government services. By promoting digitization efforts, the government is also moving to growth. It is generating fresh openings in terms of technology, jobs and transparency. Digitization has also helped streamline the method of filing taxes("Digital bridge to growth", 2019).
- This idea can transform India into an economic powerhouse by minimizing their use of paperwork and reducing their dependency on government employees. This can help to reduce corruption (Anooja, 2015).

Table 3. Digital India by the numbers

| | |
|---------------------------|---|
| Digital identity (Aadhar) | 1.2 billion |
| Smartphone users | 298 million devices and 468 million connections |
| Ration cards | 100% digitized |
| Mobile phone users | 1.18 billion |
| Internet users | 450 million |
| Social media users | 250 million |
| Books | 0.7 million books in 70 languages in National Digital Library |

Source – digitalindia.gov.in (Ministry of Electronics & Information Technology, Government of India)

Table 3 provides for Digital India by the numbers

FUTURE OF DIGITALISATION AND GLOBAL TRADE

Technology is playing a very vital role in changing the global supply chain. In 2017, 13% of the EU businesses used RFID (Radio Frequency Identification) to broaden the reach to the market, increase the location and shipment transparency and to accelerate efficiency. A study conducted in 2018 by Pay Pal in the six largest e-commerce market i.e. China, US, UK, Germany, Australia and Brazil it was found that \$307 billion will be spent on cross border business with 130 million shoppers using websites (DMCC, The Future of Trade, 2019).

The size of the digital economy is estimated to be around 32% of global economy, amounting to around \$ 23 trillion. Of this, around \$ 1.6 trillion is assessed to be the share of cross border e-commerce. Approximating the shares of countries in the cross-border e-commerce market, it is found that only three countries, namely China, USA and UK have taken around 70% of the cross-border e-commerce market. It has also been analyzed that 3D printing could cut world trade by a quarter in little over forty years. Its extraordinary potential impact is huge (Albright, 2017).

It is also predictable that there would be lower cross-border trade in industrial machinery, automotive and consumer products which may lead to overpowering world trade as these sectors are front runner industries in 3D printing and have a substantial portion in cross-border trade. 3D printing is good news for government that are worried about their trade shortfalls. As the share of trade in GDP declines, so will their deficits. It would help in reducing the total deficit, 3D printing will particularly reduce the politically subtle US trade deficits with China, Mexico and Germany. (3D printing: a threat to global trade, 2017). It has also been estimated that by 2060, 50% of the manufactured goods will be printed which would further almost reduce quarter of world trade.

World Trade Report 2018 has projected that the share of service in global trade is projected to grow from 21% in 2016 to 25% in 2030. The developing and less developed economies share in global trade is predicted to grow from 46% in 2015 to 57% in 2030 and further predicted to rise by 51%. (World Trade Report 2018 highlights transformative impact of digital technologies on trade, 2018).

CONCLUSION

Digital economy has raised an opportunity in cross border trade. Though, given the fresh trends in digitalization and the rising power of digital giants along with the rising share of few developed countries in e-commerce trade, the future of small and medium sized enterprises (SMEs) in developing countries seems to be narrow. Manufacturing tasks are becoming progressively digitalized and the manufactured Digital Products are fast reaching the trade competitiveness of the developed countries. (World Trade Report 2018 highlights transformative impact of digital technologies on trade, 2018).

Thus, there is a vital need for the emerging countries to rapidly grow their abilities for facing the rising challenges of the digital economy. In order to sustain their competitive edge in their manufactured products, new digital industrialization policies need to be designed and regulatory and policy space needs to be preserved in order to face the upcoming technologies.

To sustain a business, a sustainable supply is required. With the decline of natural resources the consumers are demanding ethical sources and environmental friendly goods. As various governments around the world look for resource efficiency policies, digitalization and sustainable policies will have advantage in years to come.

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