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COVID-19 IMPACT ON E-COMMERCE

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Abstract: Electronic communication commonly known as e-commerce has been a boon for modern businesses. E-commerce involves buying and selling of goods and services, transferring of funds thus refining relationships for value creation over an electronic media, predominantly the internet. E-commerce has created such a disruption in the traditional way of doing businesses that no single business, how large or small, was left untouched by it. It has revolutionized the way how businesses are done and how transactions used to take place between two parties. While offering every service a traditional business offers, e-commerce has fulfilled all the drawbacks and challenges. It had improved the customer service, transaction speed, balancing the difference between supply and demand and bridged the gap between the retailer and consumer drastically. While e-commerce revolution has significantly impacted the business practices, expanding its foot to every nook and corner by bringing all types of businesses online it came to a standstill when COVID-19 started impacting the world. E-commerce which ruled over the business practices came to a halt overnight due to the logistical problems which occurred due to the complete shutdown of transportation due to COVID-19 restrictions. But when the COVID-19 restrictions were lifted, and transportation resumed there was once again a boom in the e-commerce businesses and so did the crime over the internet. This is where machine learning came into play. In this paper we will be talking about E-Commerce business trends and how they are evolving and the security problems that are occurring in the e-commerce. What is the future of e-commerce with machine learning and how COVID-19 impacted the e-commerce.

Index Terms - E-commerce, Internet, Artificial Intelligence, Technology, COVID-19.

I. INTRODUCTION

E-commerce or electronic commerce describes the process of buying, selling, transferring, or exchanging products, services and information through the computer networks which principally is the internet. It can also be defined as the sharing of business information maintain business relationships and conducting business transactions using telecommunication networks [8]. E-commerce is leaning a complete change in the traditional way of doing business. Rather e-commerce is more than just another way to boost existing business practices, it is the new way of doing business in the new world.

In e-commerce, all major retail brands have an online presence. Electronic commerce as a way of doing business offers significant advantages which all the major organizations are fully embracing by using E-commerce as a means of expanding their business overseas, improving customer satisfaction, reducing costs, and thus enhancing productivity and profits. Consumers can now get the complete information about the goods they wish to shop online. Price of goods with all the relevant pictures and the complete in-depth description about the product along with the reviews of other customers are now available at ease providing the consumer to make informed decision by going through all the available options. Also, e-commerce is making business transactions easier and cheaper irrespective of the distance between the seller and buyer which is a major barrier in the otherwise traditional practice.

Coming to the categories of e-commerce, based on the parties that involve in exchange and buying, it is divided into four types [9]:

1. Business to business.
2. Business to consumer.
3. Consumer to consumer.
4. Consumer to business.

Business to Business: In business to business the dealings are in between the manufacturers, distributors, partners, wholesalers, and retailers. This is in the sense every exchange involves business at both ends. B2B transactions generally have a longer sales cycle, but higher order value and more recurring purchases [9].

Business to Consumer: This is the most common business model. It involves the sale of goods and services by manufacturers to the consumers directly by using the means such as websites and apps allowing the consumers to shop without the need of physically appearing at the store. It also allows to make payments online through payments portals. Anything you buy in an online store as a customer is done as a part of B2C transaction [9].

Consumer to Consumer: This includes all transaction of goods and services between consumers at both ends. This business model can be implemented directly, as well through a third party (Mediator). E-portals such as eBay are the first ones who pioneered this business model in the early stages of internet in India. Consumers use this to put second-hand goods for auction and conduct any other transactions between the consumers themselves where they have the option to bargain and then pay for the product which then gets delivered to them [10].

Consumer to Business: Like Business to Consumer, the Consumer to Business model also involves interaction between the businesses and consumers but with their roles reversed. The consumer creates value for the business and then gets paid for the same. It is a little unusual model of e-commerce as consumer defines price on goods [10].

II.COVID-19 IMPACT ON INDIAN E-COMMERCE

II. With the fear of rising cases of COVID-19, which has no vaccine available, the government decided to impose a nationwide lockdown on 24th March 2020 bringing the 1.38 billion people and all the services to a complete standstill by imposing strict regulations and taking severe actions on the people who leaves their homes [11]. People are only allowed out for a time frame of few hours, early in the morning, to gather all the daily essentials needed from their local shops. With all the transportation coming to a complete shutdown which is the most prime essential for any online business all the e-commerce businesses in India had to suspend their services. Even Amazon, the largest e-commerce company, had to shut down its delivery in all the areas where lockdown was initiated. There was no movement of goods and some of the companies even fired their employees. During Covid-19 many people even lost their jobs in the field of e-commerce and there was also a decrease of 8 per cent around the world.

III. As humans, we respond to the crisis in different ways when faced with uncertain risk situation over which we have no control. We tend to try whatever we feel to have some control. It becomes even more clear that how infectious is COVID-19 that some shoppers have raised safety of receiving their orders online. It is unlikely that COVID-19 would survive on purchased items from the time they were packed to the time you received your package.

IV. According to the CDC, there is likely very low risk to spread from products or packaging that are shipped over days or weeks at ambient temperatures.

V. A survey data shows that women are more likely to be concerned about the effects of COVID-19. One third of men compared to 25% of women reported the pandemic affecting how much they spend on products annually.

VI. The loss of sale during the 21-day lockdown period for the online sector is estimated to be around 1 billion dollars. Even prior to the lockdown the first two weeks of march has took a severe hit for online business. Cabs, auto, bike services went down by 40-50 percent from the first 15 days of February. Even hotel bookings, movies, events, and the online food-delivery saw a major decline of 65 per cent, 80 per cent, and 10-20 per cent respectively during this period [14].

VII. All this data in Fig 1, points to the same thing saying the sentiments of the people using online e-commerce services has taken a huge blow. People stopped shopping, ordering, or using any mode of online service as compared to before as they are in dear mode of the unforeseen pandemic.

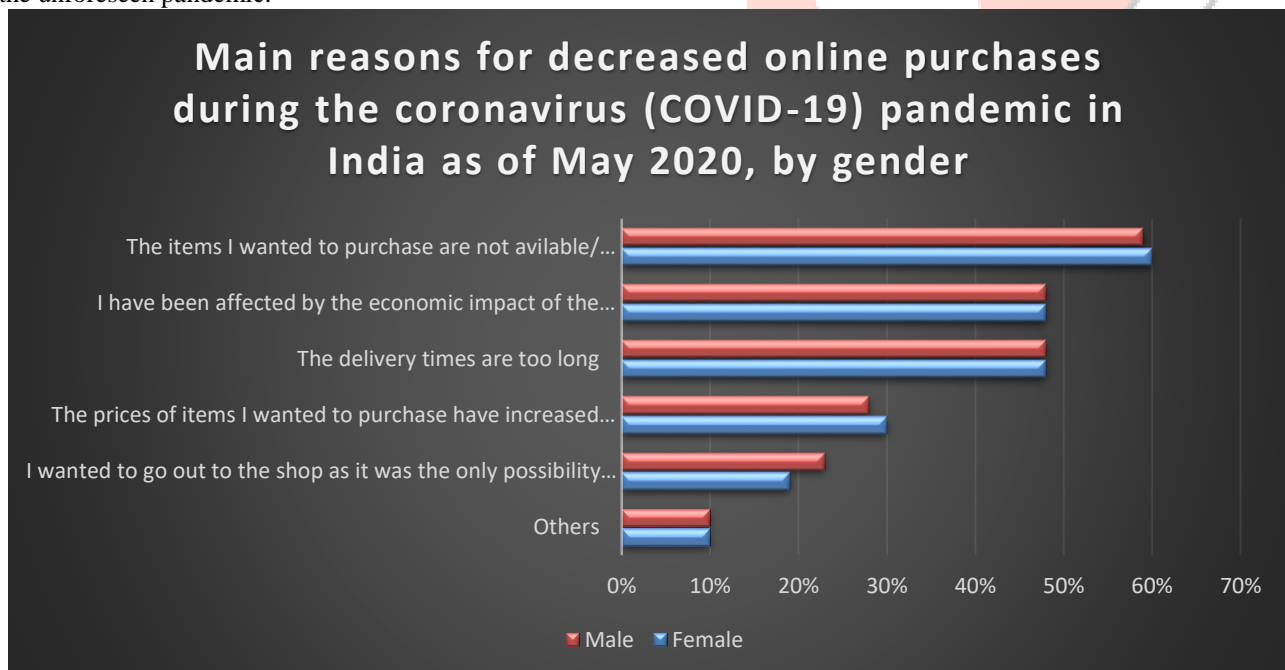


Fig 1: The above graph represents the main reasons which resulted in the decreased online purchases during pandemic[1].

A survey conducted on 3,700 consumers in nine emerging and developed economies shows us the COVID-19 pandemic has changed the online shopping behaviors of consumers forever [2].

The survey, entitled “COVID-19 and E-commerce”, examined how the pandemic has changed the way consumers use e-commerce and digital solutions. The survey conducted by the UNCTAD and Netcomm Suisse eCommerce Association tells us that the online purchases has raised but the consumer spending falls [2].

The average spends that consumers used to spend online, as shown in Fig 2, for their purchases has taken a serious hit. As the restrictions have stopped the Tourism/ Travel the spends too have gone downhill significantly. Consumers stopped spending on products that doesn't serve their daily needs. The economic hit for the people has also resulted in the less or no spending on products online.

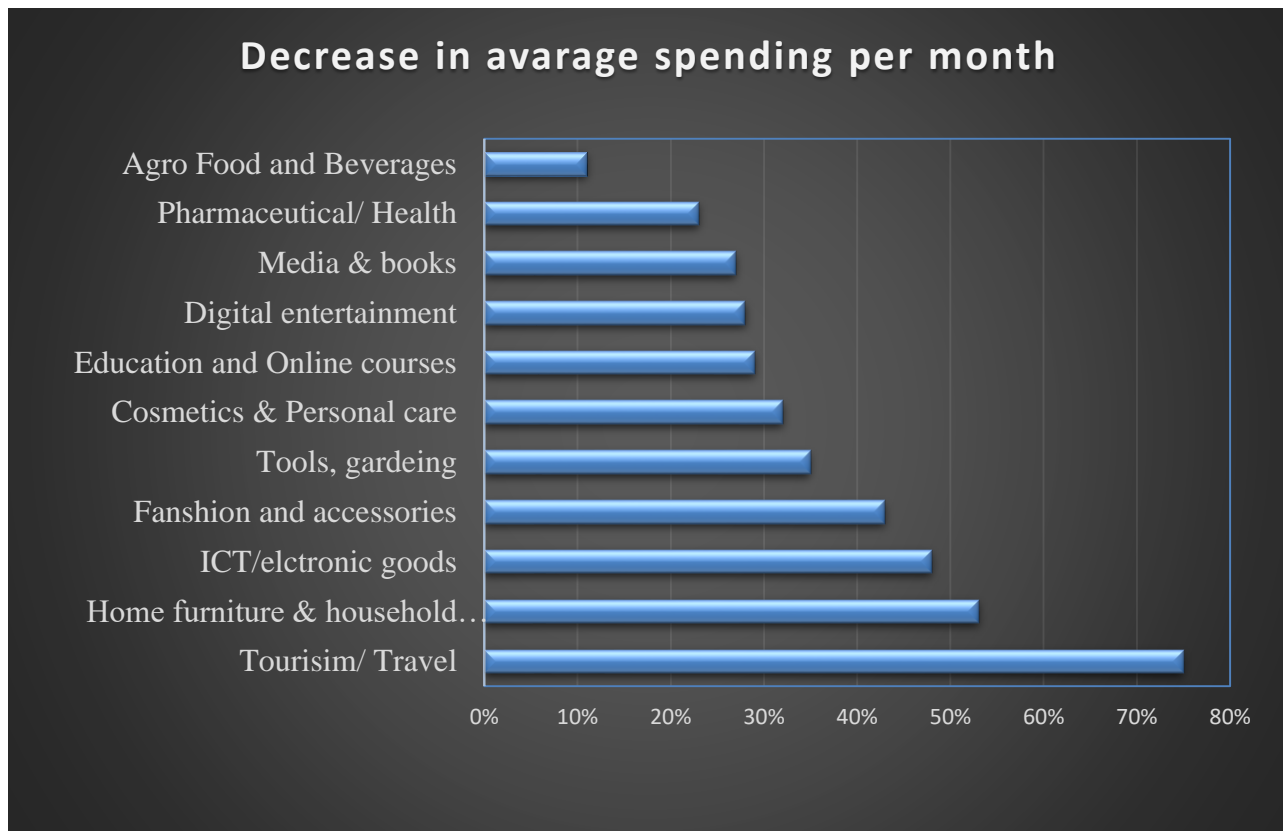


Fig 2: This above graph represents decrease in the average spending per month per person[2].

III. RISE OF E-COMMERCE AMID COVID-19

The first few weeks of the COVID-19 country wide lockdown had resulted in the complete shutdown of the e-commerce business. But as the number of cases of COVID started declining the government resumed the activities in a phased manner lifting of the travel restrictions in a systematic manner to certain locations to both resume the essential activity and bring up the nation economy that is in a spiral fall. This allowed the users and companies to resume their online activity.

Prior to the pandemic, consumers had broadly clear distinctions between those whom it was a matter of convenience be it groceries or staples or recreational items. The pandemic has created a shift in the way consumers behave and carry out their activities, directly affecting the e-commerce industry. The companies made only essentials and essential medical supplies available for the consumers and people are not inclined to spend money beyond their necessities.

As everyone started working from home, people started sticking to the basics and are inclined to step out to buy essentials which made them constantly worry about the risks of getting infected in crowded places like markets and risking their entire household when they return. When the e-commerce deliveries resumed people started ordering the essentials online as it eliminated the need for them to step out. Also ordering online all the necessities reduced the risk of them getting affected. The companies also started delivering the packages with more security measures like sanitizing before the delivery made sure the packages that the consumers ordered are safe. Even the delivery people were made to take all the required steps and were subjected to daily medical checkups. This resulted in a massive spurge in the online orders which was completely out of the blue.

According to a survey in Fig 3, 86 per cent of respondents say their online revenues increased and only 4 per cent says it decreased [12].

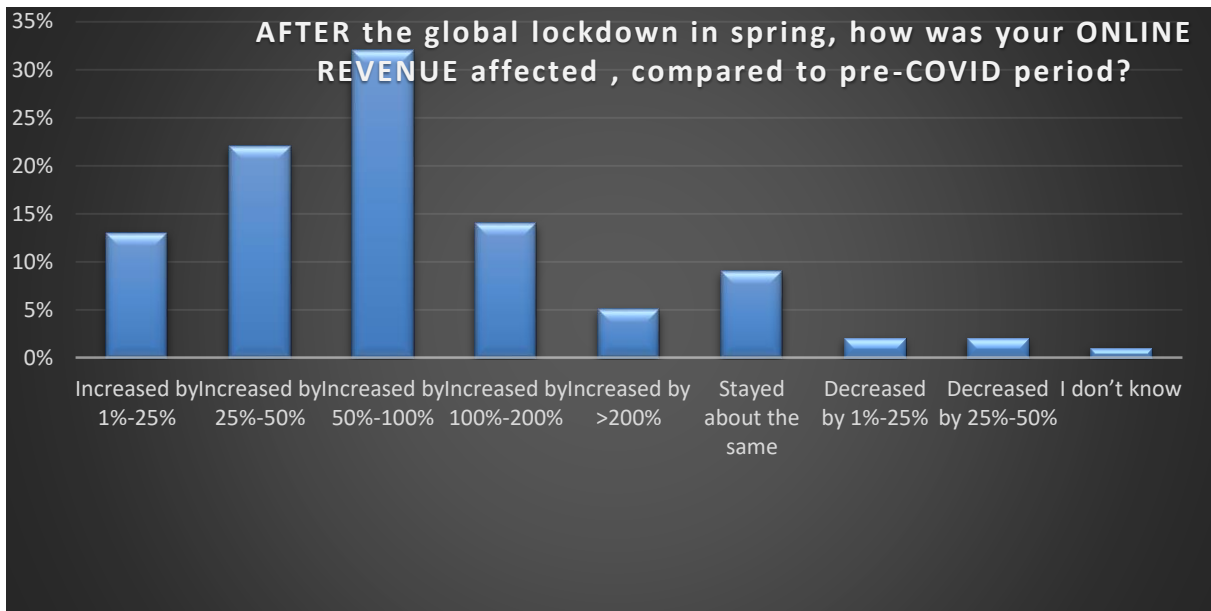


Fig 3: The above graph represents the opinions of business owners regarding how their business was affected by COVID [3].

As to when the lockdown ends completely isn't clear, people are getting used to stay-at-home lifestyle. With little things to do at home to keep themselves entertained people are relying on the technology to spend their leisure time thus increasing the demand for mobile phones. Since the shops remain closed following the guidelines of the government people started relying on the e-commerce sites such as Amazon, Flipkart to shop. Same is the case with the apparel, cosmetics and other day-to-day products. A survey conducted by the Facebook and Boston Consulting Group found that digital influence could increase up to 70 per cent for mobiles, up to 60 per cent for apparel [13].

The report also states that some of the trends are likely to stay beyond the coronavirus pandemic. They also found that 90 per cent of consumers who have made purchases of apparel and beauty products online are most likely and willing to continue this practice [13].

With people spending more time on social media is also helping this practice. Many brands are cashing on this trend. More and more companies are leaning towards online advertising over the traditional way in the attempt to attract more customers and boost up their business. A significant acceleration has happened on the back of social media, and with 400M+ Indians connected on the Facebook family apps [13].

In a recent survey by Limelight Networks, people in India are spending on an average of five hours and sixteen minutes per day consuming online video content.

Samsung stated it is aiming to target local consumers digitally, making purchasing of Samsung products easier. Many companies are using this new trend to target the audience in an efficient way. The sales of mobile phones in Fig 4 had reached to new record-breaking heights in Q3 of 2020 and the shipments were greater than that of the previous year 2019.

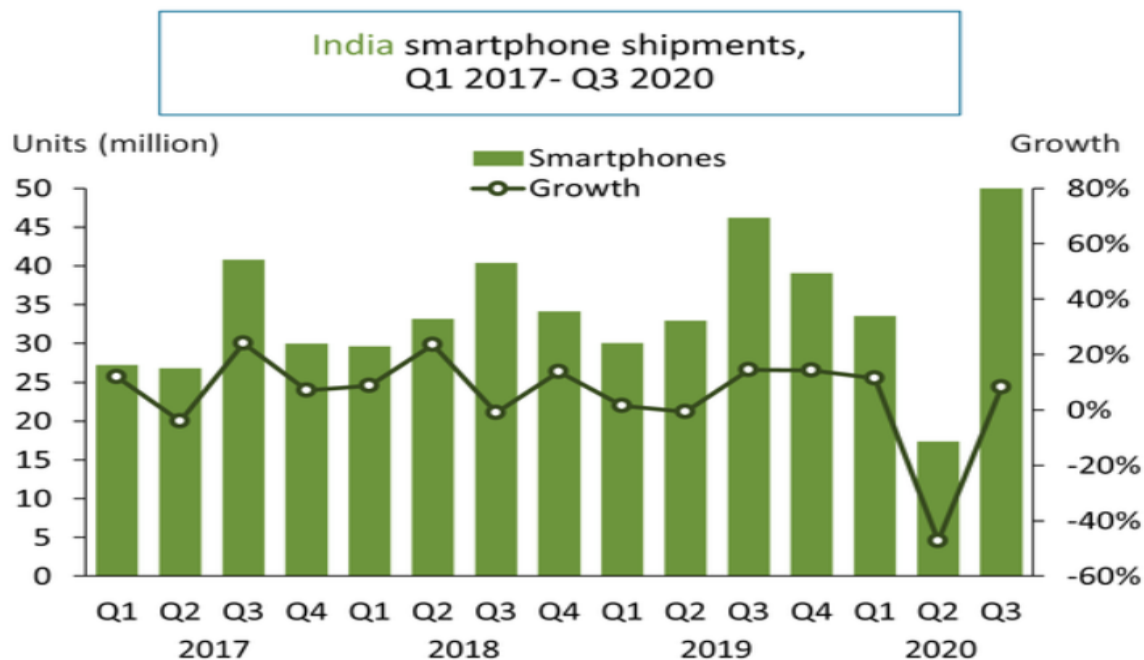


Fig 4: The above graph represents Indian smart phone shipments on Q3 of 2020[4].

“Smart phone vendors are definitely bullish,” said Canalys Analyst, Adwait Mardikar. “The government, slowly but surely reducing restrictions on movements after a three-month lockdown, has created a perfect atmosphere for sustained growth.” He said [4].

Although the first half of 2020 has been a major setback for the e-commerce industry the pandemic allowed the people to adopt to online practices for their daily needs thus increasing the activity of e-commerce online.

In a research conducted by Searchnode shown in Fig 5, 63 percent of the companies said they consider 2020 a financially successful year for them.

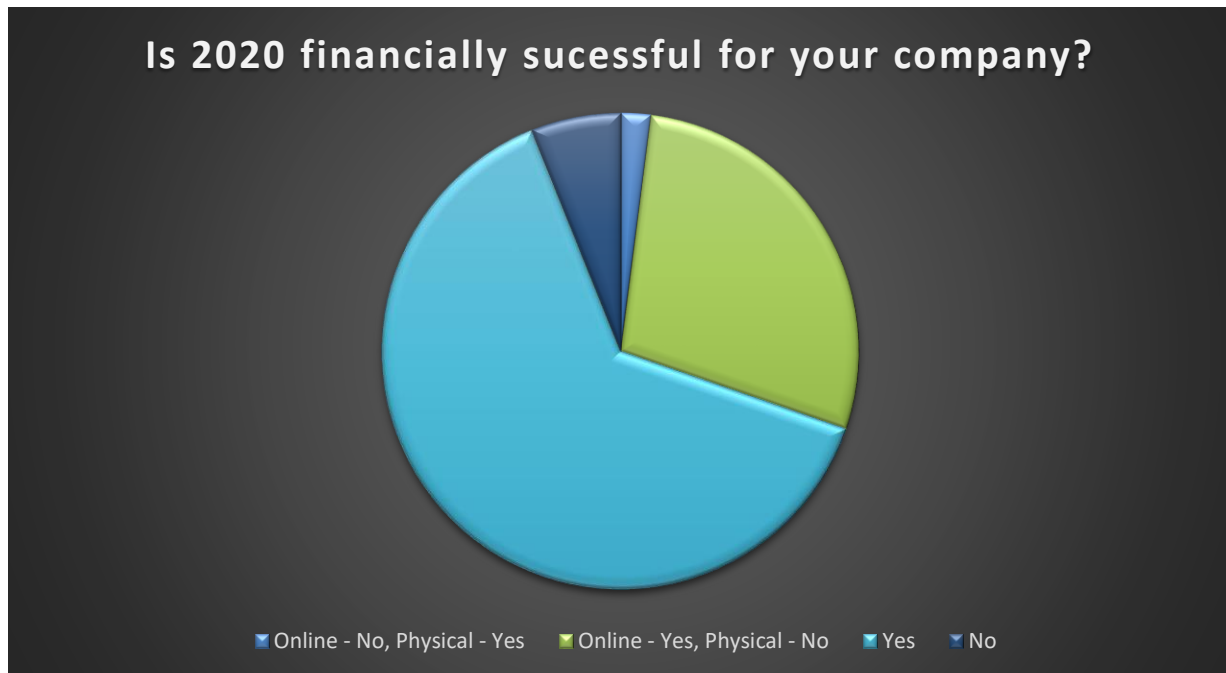


Fig 5: The above diagram represents the opinion of company owners whether their company was financially successful in 2020[5].

IV. EMBEDDING ARTIFICIAL INTELLIGENCE INTO E-COMMERCE

In order to cut down finances and save the businesses from facing losses many companies have fired their employees and started replacing them with AI by embedding it into their services. With rapidly increasing technology and the unforeseen demand caused by the COVID made companies search for efficient solution and innovative, which is where AI entered the picture.

“Artificial intelligence can automate, quality assure and optimize processes, analyze huge amounts of data, solve previously unsolvable problems or come up with new value creating features for companies and customers. AI augments human capabilities but also eliminates routine work, which allow human workforces to do more meaningful and value creating work,” Lars Ritland, AI expert at Cosignor says [15].

Machine learning also offers business benefits to E Commerce especially to online retailers. There are a number of machine learning applications for almost every area of e-commerce operation. From inventory management to customer experience machine learning truly delivers business benefits like increased conversions where machine learning algorithms can deliver smart search results via natural language processing and product recommendations. Machine learning smarter algorithms can analyze the behavior of visitors to their site which is how when you visit Amazon you will see things related to those you recently bought or looked at.

Artificial intelligence also helps to run more relevant marketing campaigns to consumers depending on the location, past activity with their business and the most bought products in their locality and many other factors. Machine learning's valuable algorithms can understand the customer behavior and suggests highly relevant services the business has to offer. It also helps to run retargeted campaigns for example, if a visitor might have browsed a shirt of polyester material, then the algorithm suggests items to the user which is in the same range or same material in this way the visitor is retargeted [16].

A survey conducted with 250 executives who were familiar with their companies use of cognitive technologies to learn about their goals for AI initiatives. More than half shown in Fig 6 & 7, said their goal was to make existing products better. Reducing head count was mentioned by only 22 per cent [6].

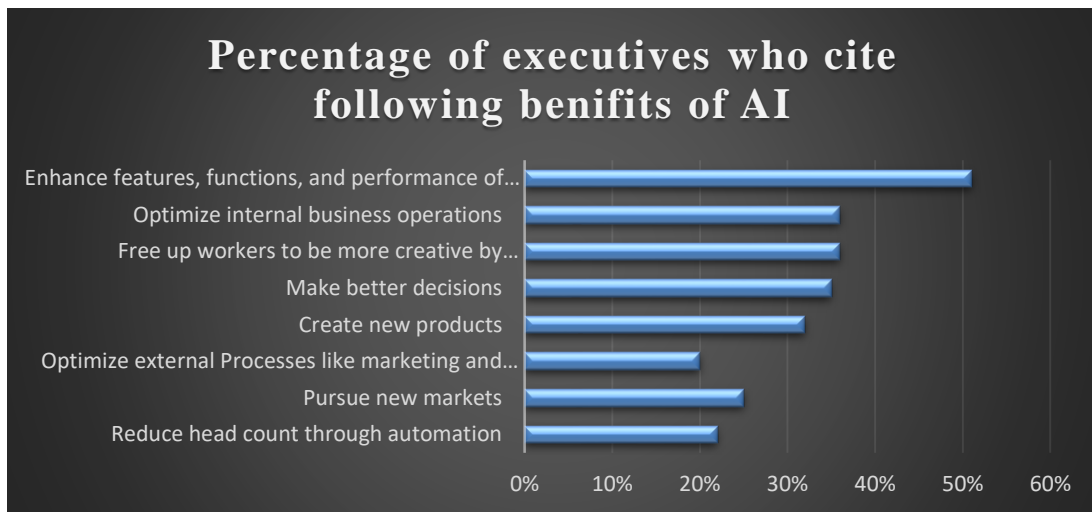


Fig 6: The above diagram represents percentage of executives citing flowing benefits[6].

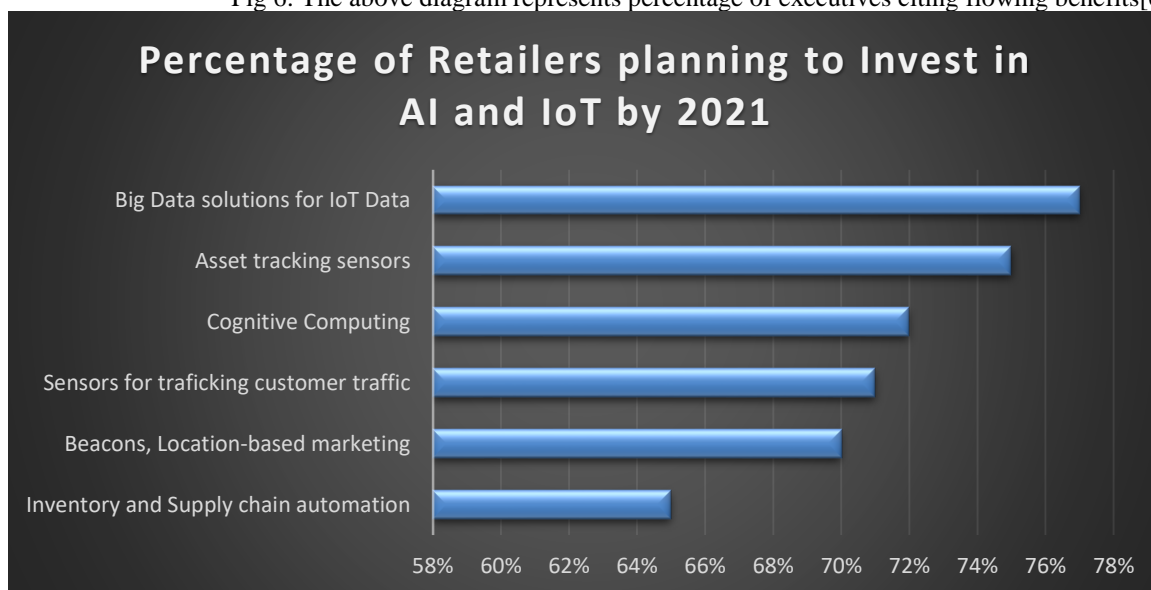


Fig 7: The above diagram represents planning to invest in Artificial Intelligence[7].

V.CONCLUSION

The COVID-19 pushed the world into unforeseen circumstances, affecting every industry and touching all the lives equally, globally. India is no exception and the E-commerce, which was on the rise, because of the high-speed internet revolution, was sent into a spiral fall. The unanticipated circumstances pushed every business to shut down their operations until the conditions become favorable to resume them. Due to this shutdown, economy fell, jobs were lost as companies fired employees to stop businesses from going bankrupt. The COVID has caused irreplicable damage to businesses interests in India.

After couple of weeks of lockdown and strict regulations in places, the severity of COVID has been under control and the permission to resume e-commerce was given. This is when the boom happened beating all the odds and forecasts. People started shopping online. From the basic needs at home to, electronics, cosmetics, even education and consultation for medical care services were being used by consumers. People started going online for their every need and the demand was towered over the supply. With newer services being introduced by the businesses the number of people using online services skyrocketed; a surge never seen before. This allowed e-commerce to take over most of the market share once again from the traditional businesses.

Seeing the boom in the user base, companies started turning over to AI to make their businesses to offer better and easy services to their customers. Businesses started integrating AI into their services to better understand the customers and offer more personalized service by analyzing the history and the past data of the customer. Suggesting items which the user may want to buy based on their previous shopping list, the geographical area of the customer, and the searches they made over their site. All this to make the consumer more relatable to their businesses and to offer more personalized experience.

While COVID has made some serious and long-lasting damages to the e-commerce, it also made businesses to search for more alternatives and made them innovate for smarter solutions. It opened new opportunities and was also responsible for the major internet revolution bringing more people online.

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