

**THE SUBSTANTIAL IMPACT OF ARTIFICIAL INTELLIGENCE OVER E-COMMERCE PROGRESS WITH REFERENCE TO AMAZON ONLINE SHOPPING.**

**Dissertation**

**Submitted by**

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**Under the guidance of**

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**In partial fulfilment of the requirement for the Degree of**

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**ST. TERESA'S COLLEGE (AUTONOMOUS), ERNAKULAM**

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**ST. TERESA'S COLLEGE, ERNAKULAM (AUTONOMOUS)**

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**CERTIFICATE**

This is to certify that the dissertation titled "**THE SUBSTANTIAL IMPACT OF ARTIFICIAL INTELLIGENCE OVER E-COMMERCE PROGRESS WITH REFERENCE TO AMAZON ONLINE SHOPPING**" submitted to Mahatma Gandhi University in partial fulfilment of the requirement for the award of the Master's Degree in Commerce is a record of the original work done by **Ms. Mehna Shaiju**, under my supervision and guidance during the academic year 2020-23.

**Project Guide**

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**Viva Voce Examination held on....**

**External Examiner(s)**

## **DECLARATION**

I, MEHNA SHAIJU, final year M.Com students, Department of Commerce (SF), St. Teresa's College (Autonomous) do hereby declare that the dissertation entitled THE SUBSTANTIAL IMPACT OF ARTIFICIAL INTELLIGENCE ON E-COMMERCE PROGRESS WITH REFERENCE TO AMAZON ONLINE SHOPPING, submitted to Mahatma Gandhi University is a bonafide record of the work done under the supervision and guidance of Smt. Annie Merlyn Rodrigues, Assistant Professor, Department of Commerce (SF), St. Teresa's College (Autonomous) and this work has not previously formed the basis for the award of any academic qualification, fellowship, or other similar title of any other university or board.

**PLACE: ERNAKULAM**

**MEHNA SHAIJU**

**DATE:**

## ACKNOWLEDGEMENT

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**MEHNA SHAIJU**

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**CHAPTER 1**  
**INTRODUCTION**



## **1.1 INTRODUCTION**

Artificial intelligence has become increasingly popular with the advancement of information and communication technologies. It combines the field of computer science and substantial datasets, to facilitate problem-solving. Nowadays, AI is used in nearly every aspect of our digital lives. It has wide applicability and is presently considered as great tool for improving the performance of different sectors. No sector of the global economy is resistant to the impact of artificial intelligence (AI). The advancement of AI technology is transforming how we interact with the outside world, from VR gaming systems to AI robots in industrial manufacturing. One of the main industry which makes the most use of artificial intelligence is the e-commerce industry. AI not only has the ability to carry out jobs that were previously done manually, but also enhances the customer experience and provides the businesses with the data which helps them in taking wise business decisions. Artificial intelligence is being used on an increasing basis by e-commerce firms to enhance their analytical insights, personalize the customer needs, and boost their competitiveness. It further uses artificial intelligence to create a strong customer base by understanding the customer needs and doing real time research to influence behaviour.

Amazon is one of the e-commerce platforms which makes the best use of Artificial Intelligence. Amazon has always had a competitive edge as an early adopter of artificial intelligence and one of the first enterprise to structure their business on AI and machine learning. Amazon is one of the major players in E-commerce, cloud computing and AI. The use of artificial intelligence has helped Amazon become more efficient, improve customer experience and increase profitability. As AI technology advances, Amazon can continue to find new and innovative ways to use AI to improve its operations. This study tries to determine how the adoption of Artificial Intelligence have resulted in the progress of e-commerce platforms by specifically focusing on Amazon online shopping. It analyses the role of Artificial Intelligence in expanding the e-commerce industry with its significant features.

## **1.2 STATEMENT OF THE PROBLEM**

E-commerce has established itself as an essential component of the retail industry as people prefer making online purchases more frequently. In an effort to meet customer expectations, e-commerce businesses are utilizing artificial intelligence (AI) to predict consumer behavior and tailor their purchasing experience. The wide applicability of Artificial Intelligence in e-commerce sector facilitated rapid growth of different e-commerce platforms along with creation of huge customer base. Amazon is one among the early adopters of Artificial Intelligence in the field which helped them in increasing their business efficiency. Amazon employs AI in numerous of ways to better understand customer search queries and the motives behind their product searches. In order to make appropriate recommendations to a customer, an e-commerce company must not only know what the consumer searched for but also why they are seeking for a product with is gained through the application of Artificial Intelligence. Thus AI is changing the economic environment in ways that will benefit both the consumers and business owners in the long run. This considerable role of AI in the progress of e-commerce platform is the main focus of this study.

## **1.2 SIGNIFICANCE OF THE STUDY**

E-commerce industry is one of the main applicator of Artificial Intelligence by making effective use of the techniques like product recommendations, visual search, voice search, chatbot, facial recognition, prediction sales etc. to improve their performance and to create an extensive consumer base by influencing consumer behavior. The study analyses this drastic impact of Artificial Intelligence over the significant growth of e-commerce industry by focusing on Amazon online shopping platform. It helps in understanding the role of Artificial Intelligence in creating demand for products and in influencing the buying behavior of consumers. The study also provides an insight on how the application of Artificial Intelligence provided a better experience for both the consumers and the industry. In general, the research helps in identifying the effectiveness of implementing artificial intelligence in the e-commerce industry

### **1.3 SCOPE OF THE STUDY**

The study is conducted to identify the contribution of Artificial Intelligence towards the development of e-commerce industry. This was analyzed through collecting information from consumers who use Amazon online shopping platform to purchase products. The geographical scope of the study is confined to Ernakulam district. It helps in understanding the view of consumers towards the application of Artificial Intelligence in the e-commerce platform with special reference to Amazon online shopping platform. The study analyses how Artificial Intelligence influences the buying behavior of the consumers and attract them towards the platform in a unique way. It helps in understanding how the consumers and the company makes advantage of artificial intelligence for creating a better shopping experience.

### **1.4 OBJECTIVES**

1. To look over the personalized marketing role of Artificial Intelligence in Amazon.
2. To study the impact of Artificial Intelligence over buying behavior.
3. To identify the most used feature of Amazon.
4. To analyses the role of Artificial Intelligence in creating demand for products.

### **1.5 RESEARCH DESIGN**

#### **1.5.1 Type of Research**

This research is descriptive and analytical in nature. Descriptive research is used to describe the characteristics of a population or phenomenon being studied, whereas analytical research is used to test the hypothesis of the study.

##### **1.5.1.a Primary data**

Questionnaires in the form of google forms will be used to collect primary data from the consumers who encounters the application of Artificial Intelligence while shopping online. The target respondents include consumers who have used Amazon online shopping platform for their purchase. The primary data for the study is collected through a structured questionnaire focusing on the application of Artificial Intelligence in Amazon online shopping.

### **1.5.1.b Secondary data**

The data was collected from books, journals, websites, and other sources.

### **1.5.2 Population and sample size**

The target population for the study is confined to Ernakulam district. The target respondents include different segments of age, qualification, occupation, and income level, who are makes use of Amazon online shopping platform for their purchases.

### **1.5.3 Sampling method**

Convenience random sampling will be used for surveying the organization. The advantage of this type of sampling is the availability or quickness with which data can be gathered.

### **1.5.4 Tools for data collection**

Google forms was used to collect data from the respondents.

### **1.5.5 Statistical Tools for analysis**

The data has been analyzed using Pie charts as well as Bar diagrams.

## **1.6 Limitations of the study:**

1. The responses of the sample population could be biased as they might not share their genuine opinion.
2. Some of the respondents were not aware of the concept of Artificial Intelligence and its applicability in Amazon online shopping platforms.
3. The sample collected from only one region and thus might not reflect the overall perception of consumers as a whole.
4. Collecting information from consumers was time consuming.
5. The attitude of people towards technology can change from time to time which effects the accuracy of the study.

## **CHAPTERISATION SCHEME**

The study is organized into 5 chapters are as follows: -

Chapter 1 - Introduction

Chapter 2 - Review of literature

Chapter 3 - Theoretical framework

Chapter 4 - Data analysis and interpretation

Chapter 5 - Findings, suggestions and conclusion

Bibliography

Appendix

## **Review of literature**

**Ibharim Halil (2023)** carried out research on “Artificial Intelligence Marketing: The Effect of Artificial Intelligence on Purchasing Intent in Online Shopping”. Artificial intelligence is used in marketing to make predictions about future customer behaviour based on historical customer data. Businesses can save money and gain greatly from this technology. Unlike past studies, the study examined artificial intelligence marketing by taking into account the psychological and behavioural characteristics of consumers. From the viewpoint of rational action theory, this study investigates the influences of subjective norms, attitudes, hedonic values, and perceived utility values of consumers buying from artificial intelligence websites on purchase intention. Research results have shown that artificial intelligence can be a useful tool in online shopping sites. Finally, in the study, the extent to which the use of artificial intelligence affects purchase intention has been explained and contributed to by researchers, literature, and businesses.

**Aprit Sharma (2023)** did a research on “Analyzing the Role of Artificial Intelligence in Predicting Customer Behavior and Personalizing the Shopping Experience in Ecommerce”. With consumers increasingly favoring online purchasing, e-commerce has established itself as a vital component of the retail sector. Artificial intelligence (AI) is being used by e-commerce companies to anticipate client behavior and customize the buying experience in an effort to match customer expectations. The purpose of this research paper is to examine how AI affects e-commerce customer behavior prediction and personalization. The study starts with a thorough literature analysis that looks at the present state of understanding on consumer behavior, personalization strategies, and the various types of AI employed in e-commerce. We offer a thorough overview of this significant and quickly developing field of AI in e-commerce by evaluating the literature and examining pertinent case examples. The study discover that artificial intelligence has the ability to dramatically boost the precision of anticipating consumer behavior and to raise conversion rates through tailored recommendations. However, the ethical and privacy aspects of employing AI in e-commerce must be carefully studied, and it must be utilized responsibly and transparently.

**Prof. Yan lee, Mahabubur Rahman Miraj and Md Sazibur Rahman (2022)** conducted a study on the title “Artificial Intelligence for energizing e-commerce “. Artificial intelligence plays an undeniable role in every sector in the present world. The study deals with the analysis of application of artificial intelligence in e-commerce and how it has created an impact on energizing e-commerce industry. It further analysed the negative and positive aspects of artificial intelligence in the industry. The study concluded on how e-commerce is still not flawless with the application of artificial intelligence even though it had created a huge progress in e-commerce. It further suggests to understand the challenges and opportunities of Artificial Intelligence to overcome current and future problems.

**Halima Afroz, Kuhu Vaishnava, Manu K S (2022)**, did a research on “Artificial Intelligence in E-commerce: Applications, Implications and Challenges” The development of intelligent computers capable of doing activities that would ordinarily need human intelligence is the focus of the broad field of artificial intelligence (AI) in computer science. Three cognitive processes—learning, reasoning, and self-correction—are the main topics of AI programming. Artificial intelligence is being widely used by e-commerce companies to better understand their clients and fulfil their expectations. By the analysis of research publications from multiple sources, this paper primarily seeks to identify some important uses of AI in e-commerce. The study found that AI has a significant impact on enhancing the effectiveness of e-commerce businesses, and these businesses are investing more and more in the future to support the expansion and development of their businesses in recent years.

**DR. ANIL KUMAR KASHYAP, ITY SAHU, DR. AJAY KUMAR3 (2022)** conducted research titled “ARTIFICIAL INTELLIGENCE AND ITS APPLICATIONS IN E-COMMERCE - A REVIEW ANALYSIS AND RESEARCH AGENDA” This study has been directed to present a holistic view of AI technology in e-commerce. Study highlights AI and its subsets, e-commerce and application of AI in different e-commerce operations. The study comprised dual aspects of the field. Firstly, the technologies incorporated in the field and secondly, the utility of these technologies in e-commerce. The findings of the study indicate that the AI has more to offer in e-commerce. To sum up the literature reviewed here highlights that e-commerce can enhance its offering by embedding artificial intelligence.

**Luísa Vitorino, Edirlei Soares (2022)**, did a study on “An Evaluation of Artificial Intelligence Components in E-Commerce Fashion Platforms”. The potential for success in every area we are aware of today has been boosted by technological innovation and the democratization of artificial intelligence (AI), and more is still to come. The study analyses how artificial intelligence (AI) advancements in the fashion industry, especially in e-commerce fashion brand platforms, are influencing the personal lives of consumers, particularly the decision-making of young (Gen-Z) consumers. AI-driven touchpoints influence and enrich each stage of the decision-making process, whether more positively or negatively, allowing businesses to not only improve their supply and customer demand but also to offer a shopping experience that goes beyond the mechanical "select and buy."

**Ransome Bawack, Samuel Fosso Wamba, Kevin Daniel, Shahriar Akter (2022)** did a research on the title “Artificial intelligence in E-Commerce: a bibliometric study and literature review”. The study on artificial intelligence (AI) in e-commerce is summarized in this paper, and it also makes recommendations for how information systems (IS) research might contribute to this research stream. In order to achieve this, the novel strategy of combining bibliometric analysis with a thorough literature study was employed. 4335 documents' bibliometric data were examined, and 229 articles from prestigious IS journals were evaluated. According to the results of the bibliometric study, recommender systems are the main subject of research on AI in e-commerce. As the primary research topics, sentiment analysis, trust, personalization, and optimization were determined. Additionally, it identifies Chinese schools as pioneers in this field of study. Additionally, computer science, AI, business, and management journals published the majority of study papers on AI in e-commerce. The literature review identifies the primary study themes and approaches.

**Atul Nimbalkar(2022)** conducted a research on “The Increasing Importance of AI Application in E-Commerce”. Building intelligent machines capable of carrying out activities that typically require human intelligence is the focus of artificial intelligence (AI), a broad area of computer science. Online merchants employ artificial intelligence in the e-commerce sector in addition to product recommendations to offer Chabot services, analyses user reviews, and offer tailored services to online customers. The study deals with the usage of catboats or virtual assistants, intelligent product suggestions, personalisation, and inventory management which are the main applications of AI in e-commerce. In conclusion, retailers



are making significant investments in technology to stay competitive and relevant. AI has multiple significant applications in e-commerce.

**Hasan Beyar and Hatem Garamoun (2022)** conducted a study on “The Effect of Artificial Intelligence on End-User Online Purchasing Decisions Toward an Integrated Conceptual Framework”. This study looked into how particular artificial intelligence tools and factors affected end-user purchasing intentions for practical and shopping-related items among Saudi Arabian consumers. The element that the researcher attempted to directly link to the online purchase intention variable was the consideration set. The machine learning, purchase duration, social product suggestion, and social media reliance were the chosen AI tools and methodologies. These four were used as the indirect factors since the consideration set variable was used to assess their impact. The unified theory of acceptance and use of technology (UTAUT) and the theory of reasoned action made up the theoretical framework that guided this study. The researchers chose to use the structural equation modelling (SEM) method to analyze their findings. The results showed evidence of correlation with a set of three independent variables under examination, namely purchase length, machine learning, and product recommendation. The study also showed that end-user purchase decisions for online clients are influenced by customer consideration sets.

**Manasa R, Jayanthila Devi (2022)**, conducted a case study on “Amazon's Artificial Intelligence in Retail Novelty - Case Study”. The main goal of research and development in artificial intelligence is to provide a means for making deliberate decisions. Giving computers the ability to do intellectual tasks like decision-making, problem-solving, environment perception, and communication understanding is the main objective of artificial intelligence (AI). Amazon is well known for deploying robots in their distribution centers; there are about 30,000 of them. The corporation now has a mechanical autonomous organization, enabling the robots to work on their own. The study analyzed that a company may benefit from artificial intelligence (AI) in three key areas: the automation of business processes, the discovery of new information through data analysis, and the engagement with customers and employees. AI will liberate people to concentrate on the 20% of non-routine jobs that currently exist.

**Andreea Tamaduianu (2022)** carried out a study on "Artificial intelligence at the service of e-commerce". E-commerce, which is a technology-based business, has many applications for AI. In order to show the impact of AI as a technological phenomenon in e-commerce, this study will provide a thorough definition of artificial intelligence, along with details regarding its three stages, and will discuss various applications of AI in the e-commerce processes, such as market research, market stimulation, inventory management, picking orders and prioritizing them, delivery, customer support services, and ways to attract more customers. This article will also discuss some of the difficulties businesses have integrating artificial intelligence into their operations and possible future directions for this area of study.

**Gangzhi Guo (2021)** did research on "Application of artificial intelligence technology in the field of live streaming e-commerce". Today, the network as a new form of social interaction is gradually altering how people live their lives. With the emergence of mobile Internet platforms for social networking and technical support, live streaming e-commerce has gradually emerged as the hottest method of online shopping. Whether it takes place on a traditional shopping platform or a popular short video platform, live streaming e-commerce has entered a phase of untamed expansion. Artificial intelligence technology offers strong technical support for the growth of live streaming e-commerce with its technical benefits. Starting with the idea of artificial intelligence technology and live streaming e-commerce, the paper concentrates on the use of artificial intelligence technology in the field of live streaming e-commerce.

**Gururaj P (2021)** conducted a research titled "Artificial intelligence - application in the field of e-commerce". Modern society is heavily reliant on artificial intelligence. Although this idea has been around for a while, advancements in the field of artificial intelligence have continued since the concept's inception. Intelligent system development is making human job more convenient, time- and effort-efficient, and easier. The paper focuses on studying and discussing in detail from the perspectives of Artificial Intelligence Assistant (chatbot), Intelligent Logistics, Recommendation Engine, Warehouse Automation, Visual Search, and Optimal Pricing Application through the research of e-commerce Intelligent Operation. This paper simply describes the current state of e-commerce development and AI technology prospects, analyses the current state of AI technology application in the field of e-commerce.

**Amber Srivastava (2021)** carried out a study on “The Application & Impact of Artificial Intelligence (AI) on E-Commerce” The world is currently experiencing the most advanced technologies due to AI. The E-commerce sector has also changed how businesses operate in India. The use of AI in the e-commerce sector has significantly increased during the past ten years. AI is being used by the e-commerce sector to process a sizable database of forward-thinking clients, engage with them via Chabot’s, and assist with searching, sorting, and selecting the right product. Competitors in the e-commerce industry are utilizing AI to improve consumer recommendations, develop a more effective sales process, establish a customer-centric search, combat fraudulent reviews, etc. The proposed study will provide insight into how artificial intelligence is being used in the online retail sector and how it affects online shopping portals.

**Harikumar Pallathadka, Edwin Ramierz, Karthikeyan Kaliyeperumal (2021)** conducted research on “Applications of artificial intelligence in business management, e-commerce and finance”. With the main objective of designing standard, dependable product quality control methods and the search for new ways to reach and serve customers while maintaining low cost, AI has been implemented in the financial and e-commerce industries to achieve better customer experience, efficient supply chain management, improved operational efficiency, and reduced mate size. One of the most widely used AI techniques is machine learning, specifically deep learning. These models are used by people, companies, and government organizations to foresee needs and gain knowledge from information. There is currently work being done on developing machine learning models for the complexity and variety of data found in the food business. Applications of artificial intelligence and machine learning to business administration, finance, and online shopping are covered in this study.

**Prateek Kalia (2021)** in his book “Artificial Intelligence: Fundamentals and Applications” mentioned the way that businesses handle their marketing, discovery, transaction processing, and product and customer service procedures has changed as a result of new internet-based technologies. Artificial intelligence (AI) is a major technology that has partially or entirely replaced humans in the performance of tasks. The uses of AI in a technology-driven sector like e-commerce are countless. The book went over the role of AI in e-commerce business processes like market research, market stimulation, terms negotiation, order selection and priority, order receipt, order billing/payment management, order scheduling/fulfillment delivery, and customer service and support in order to explain the impact of AI as a

technological phenomenon on the companies involved in e-commerce. The study concluded on how the applications of AI changed the face of business.

**Laith T Khrais (2020)** conducted a study on “Role of Artificial Intelligence in Shaping Consumer Demand in E-Commerce”. The use of artificial intelligence (AI) has emerged as a crucially new tool for product personalization and customization to satisfy particular needs. Although AI systems have a significant impact on e-commerce, this research reveals that there is debate about whether they are ethically sound, particularly when it comes to the explainability idea. To get a thorough knowledge of the concept of explainability as it has been applied by scholars in the area of AI, the study employed the usage of word cloud analysis, voyance analysis, and concordance analysis. This study is driven by a corpus analysis, laying the framework for a consistent front and advancing the development of Explainable Artificial Intelligence (XAI) models. According to this study, ML models need be enhanced to make them more interpretable in order to deploy explainable XAI systems.

**Hedia Jegham, Ines Belgacem (2020)** carried out a study titled “Revolution of Artificial Intelligence on E-Commerce”. Several Artificial Intelligence implementations are concerned with the entire e-commerce supply chain, from production and storage to marketing, distribution, and delivery up to after-sale service. This chapter focuses on the theoretical and technical foundations of specific AI approaches used to create chatbots and recommender systems, such as artificial neural networks and natural language processing. Based on success criteria, four significant Middle Eastern e-commerce websites were chosen for this study's purposes in order to demonstrate how artificial intelligence is transforming the e-commerce sector. The objective is to encourage submissions on how AI paves the way for e-commerce sites to become more appealing and profitable in the industries of the MENA region.

**Xia Song, Shiqi Yang, Ziqing Huang, Tao Huang (2019)** carried out a study on the title “The Application of Artificial Intelligence in Electronic Commerce”. Artificial intelligence (AI) applications are becoming increasingly widespread due to the rapid advancement of science, technology, and economic civilization. The development of AI has a significant impact on our way of life and way of working. AI technology has also been effectively deployed and produced positive outcomes in the e-commerce sector. This paper analyses the current state of the application of AI technology in the field of e-commerce, focusing primarily on study and discuss in detail from the aspect of assistant of AI, intelligent logistics,

recommendation engine, and the optimal pricing application through the research of e-commerce intelligent operation.

**R.Vignesh, Dr.S Vasantha (2019)** conducted a study on “Significant Developments of Artificial Intelligence In Indian Ecommerce Industry In 2019”. Since the beginning of the last decade, the Indian e-commerce market has been expanding, and by 2034, it is anticipated to overtake the US market to become the second-largest e-commerce market in the world. The ability of artificial intelligence to scale up the global e-commerce industry has greatly improved. The past few years have seen the beginning of the benefits of the decades' worth of investment in artificial intelligence research and development. The majority of businesses have been struggling with the recent economic slump, but the e-commerce sector has been steady because of reliable Supply and Demand predictions made using AI ideas. The article provides a detailed explanation of the most current advancements in artificial intelligence in the e-commerce sector in 2019.

**CHAPTER 3**  
**THEORITICAL FRAMEWORK**

## E-COMMERCE



Electronic commerce, or e-commerce, is the exchange of products and services, or the transfer of money or data by means of an electronic network, mainly the internet. It includes a wide range of information, programmes, and resources for online purchasers and sellers, such as mobile shopping and encryption for online payments. These are usually carried out as Business-to-Business (as represented by websites like Shopify), Business-to-Consumer (as represented by websites like Amazon), Consumer-to-Consumer (as represented by websites like eBay) and Customer-to-Business (as Google AdSense). Over the past two decades, e-commerce has grown exponentially, revolutionizing the way people shop and conduct business. E-commerce can be traced back to the 1960s, when businesses began to use Electronic Data Interchange (EDI) to share business documents like purchase orders and invoices with each other. In the 1990s, the advent of the World Wide Web made it possible for businesses to sell their products directly to consumers, and e-commerce as we know it today began to take shape. Since then, e-commerce has grown to become a multi-trillion-dollar industry, with giants like Amazon, Alibaba, and eBay dominating the space. A single website or a variety of online channels, including social media and email, can be used to operate an

online store. Customer support representative, shipping clerks, packing agents, software developers, general operation managers and delivery drivers are considered as e-commerce workers. One-way people buy and sell goods in the retail sector is through e-commerce. While some businesses simply sell things online, others incorporate it within a larger marketing plan that also includes physical stores and other avenues of distribution. In either case, e-commerce enables start-ups, small enterprises, and established firms to sell things widely and connect with people everywhere.

A firm that makes revenue by selling goods or services online is known as an ecommerce business. An e-commerce business might, for instance, offer web design services, clothing, software, or housewares. Ecommerce links buyers and sellers using variety of electronic means. One need a channel, like a website or social media, for instance, so that buyers can find products and services to buy. E-commerce can take on a number of different forms, encompassing various corporate and consumer transactional relationships as well as the exchange of a variety of goods. It includes

- Retail: which includes the direct sale of a product by a company to a customer without the use of a middleman.
- Wholesale: The sale of goods in large quantities, frequently to a retailer who subsequently offers them to customers directly.
- Drop shipping: which is the practice of selling goods that have been produced and delivered to customers by different companies.
- Crowdfunding: The process of collecting funds from customers before a product is really available in order to raise the startup money required to bring it to market.
- Physical goods: Any tangible items that must be physically transported to clients as orders are filled and inventories are refilled.
- Subscription: an automated, ongoing purchase of a good or service up until the subscriber decides to discontinue.

Mobile commerce, also referred to as "m-commerce," is the act of carrying out online transactions through a mobile device such as smartphones and tablets. This includes mobile shopping, banking and payments. Mobile chatbot make online shopping easier and allow consumers to complete transactions via voice or text chats. Given the prevalence of mobile

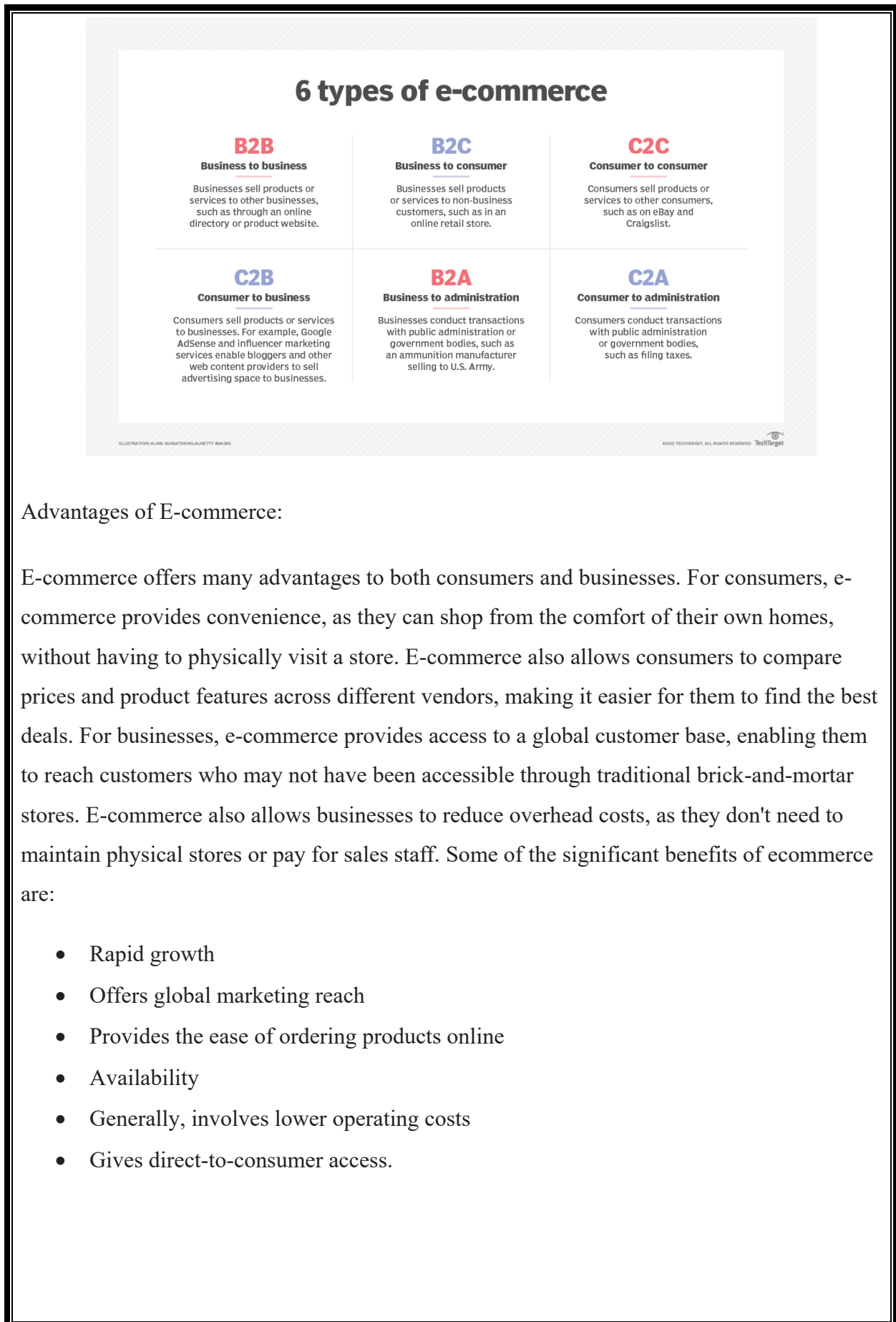


devices among customers globally, it makes sense that m-commerce will represent over 43% of all retail e-commerce sales in 2023 (an increase of about 2% from 2022).

E-commerce comes in as many different forms as there are different ways to shop online.

Some of the more common business models shaping the world of e-commerce include:

- Business-to-business (B2B): - where electronic exchange of products, services or information are carried out between businesses, rather than between businesses and consumers.
- Business-to-consumer (B2C) is where the businesses sell products, services or information directly to consumers.
- Consumer-to-consumer (C2C) is a type of electronic commerce where consumers exchange products, services and information online. These transactions are usually conducted through a third party that provides an online platform for transactions.
- Consumer-to-business (C2B) is a type of e-commerce where consumers offer their products and services online for businesses to bid on and buy.
- Business-to-administration (B2A) refers to online transactions between businesses and public administrations or government agencies. Many branches of government depend on various electronic services or products. These products and services often relate to legal documents, records, social security, tax information and employment. B2A services have grown significantly in recent years due to investments in e-commerce.
- Consumer-to-administration (C2A) refers to online transactions between consumers and public administrations or government agencies. The government rarely buys goods or services from private individuals, but individuals often use electronic resources in areas such as social security, health and taxes.



### Advantages of E-commerce:

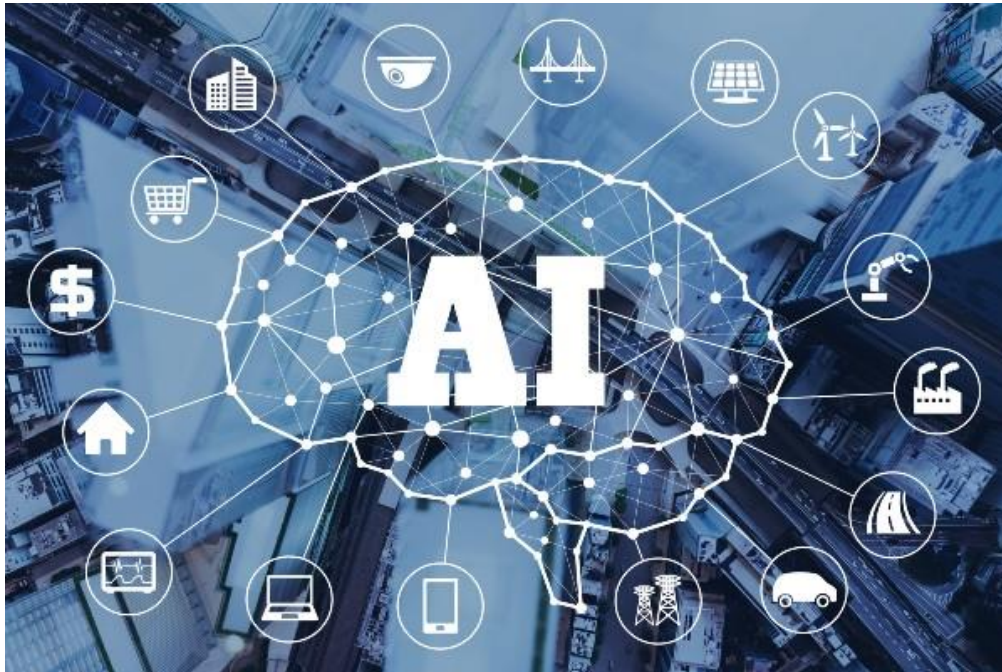
E-commerce offers many advantages to both consumers and businesses. For consumers, e-commerce provides convenience, as they can shop from the comfort of their own homes, without having to physically visit a store. E-commerce also allows consumers to compare prices and product features across different vendors, making it easier for them to find the best deals. For businesses, e-commerce provides access to a global customer base, enabling them to reach customers who may not have been accessible through traditional brick-and-mortar stores. E-commerce also allows businesses to reduce overhead costs, as they don't need to maintain physical stores or pay for sales staff. Some of the significant benefits of ecommerce are:

- Rapid growth
- Offers global marketing reach
- Provides the ease of ordering products online
- Availability
- Generally, involves lower operating costs
- Gives direct-to-consumer access.

## Challenges of E-commerce

- Limited face-to-face interaction: The queries of the customers in retail stores can be clarified by the salesperson, cashier or store manager while it is difficult to solve customer queries in e-commerce as the website may only offer support at certain times, and its online service options may be difficult to navigate or may not be able to answer a certain question.
- Technical difficulties: Technological challenges can negatively impact sales. Just as hiccups in the supply chain can prevent products from being delivered on time, internet or hard drive problems can cost you time and money.
- Data security: Skilled hackers can create genuine-looking websites that claim to sell well-known products and send customers fake or counterfeit products or simply steal credit card information. Legitimate e-commerce sites also carry risks, especially when customers store their credit card information which could be stolen by the actors in the threat. A data breach can also damage a retailer's reputation.
- Challenges of shipping and fulfilling orders at scale.

## ARTIFICIAL INTELLIGENCE (AI)



Artificial intelligence is the performance of human-required tasks by machines and technologies. Artificial intelligence uses computers and machines to mimic the problem-solving and decision-making abilities of the human mind. This includes the application in many sectors like education, healthcare, Science, technologies etc. by means of robotics, computers, gaming and many more. AI have developed through the continuous advancement in the field of science and technology, in which computers contributes a major role. The growing needs and wants of humans have paved the way for artificial intelligence. Now Artificial Intelligence is the advanced version of technologies with utmost accuracy. In future, there may or may not be a replacement for this.

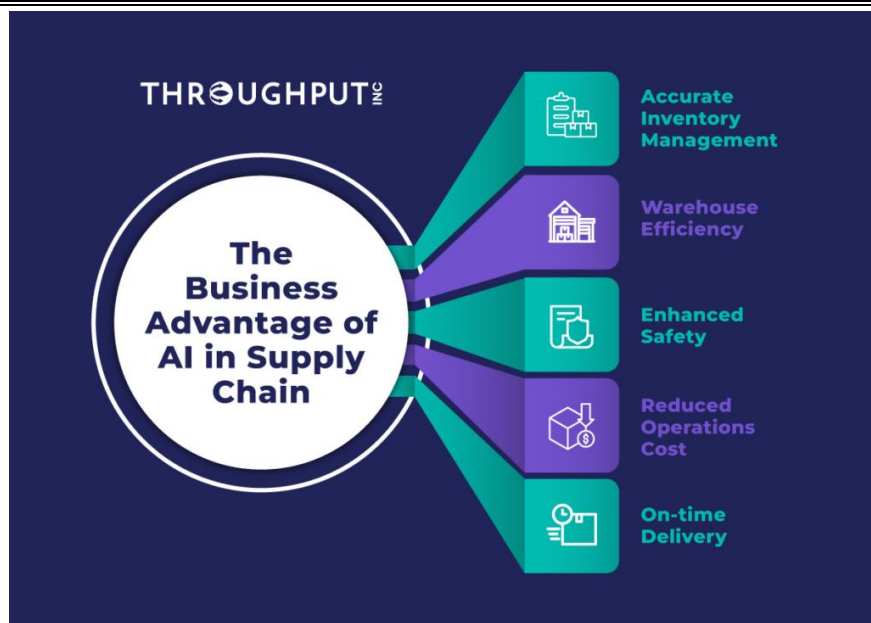
Machine learning and deep learning are used to build Artificial Intelligence, which enables algorithms to comprehend trends, behaviour, and patterns and make predictions based on the data. It primarily concentrates on the data and patterns, where each data point produces a distinct result. Every profession can benefit from AI since it makes tasks simpler and more accurate. Doctors can use it to prescribe the best medications, organise the course of treatment, and choose the best diagnostic equipment. An industry can achieve everything with AI's assistance. Healthcare, finance, manufacturing, transportation, retail, education, entertainment, and many other sectors can all benefit from the application of Artificial Intelligence.

Artificial Intelligence can be classified as weak AI and strong AI. Weak AI is also called Narrow AI or Artificial Narrow Intelligence (ANI). Most of the Artificial Intelligence we use today is weak AI. It is trained to focus on performing specific tasks. It enables some of the very powerful applications like Amazon Alexa, Apple's Siri etc. Strong AI consists of Artificial General Intelligence (AGI) and Artificial Super Intelligence (ASI). Artificial General intelligence is a theoretical form of artificial intelligence where machines have the same intelligence as humans which makes it capable of solving problems, learning and planning for the future through self-aware consciousness. Artificial Super intelligence (ASI), also known as superintelligence, would exceed the intelligence and capabilities of the human brain. Although strong AI is still entirely theoretical, with no practical examples, this does not mean that AI researchers are not also studying its development. Recently, Artificial Intelligence is under a massive growth with the intervention of large language models such as ChatGPT. This resulted in enormous change in AI performance and its potential to drive business value.

Artificial Intelligence is primarily used in retail or e-commerce platforms to identify consumer buying trends and patterns to recommend products based on their preferences. It plays an inevitable role in improving better customer experiences and bringing innovative solutions in the e-commerce industry. According to reports, the number of businesses which adopts AI increased by 270%. Artificial intelligence is thus constantly changing the electronics industry. It affects how an online store offers and sells products to its customers. By providing a highly personalized shopping experience through virtual shopping assistants, AI improves the online shopping experience for customers and retailers. This technology advancement offers certain ways to identify customer behaviour and analyse big data to help online stores engage, segment and retarget customers. Consumers will receive recommendations based on their most recent searches, purchases, and preferred price range. The success of e-commerce business depends on the efficiency of personalised customer experience. Using Artificial Intelligence, everything can be filtered, including the preferred brand, colour, and more. AI applications can identify and analyse consumer data to predict future purchasing patterns and make product recommendations based on consumer browsing habits. The algorithms used for this purpose is created by Artificial Intelligence using the data set made from our prior searches and purchases. Retail businesses make informed decisions using this information to more effectively predict future outcomes and adjust marketing

campaigns accordingly. Artificial intelligence is thus useful for today's online retailers to provide the best customer and user experience in e-commerce and make smart business decisions using customer data.

Artificial intelligence in supply chains can provide the powerful optimization capability needed for more accurate capacity planning, better demand forecasting, improved productivity, lower supply chain costs and higher output, while promoting safer working conditions. AI thus helps in improving supply chain management and the consumer experience. In today's digitally connected world, maximizing productivity while reducing uncertainty is a top priority for all industries. In addition, increasing expectations for supersonic speeds and operational efficiency further emphasize the need to leverage the capabilities of artificial intelligence (AI) in supply chains and logistics. The pandemic and subsequent disruptions have shown the dramatic impact of uncertainty on supply chains and the need for smart contingency plans to help businesses manage this uncertainty in the right way. This was facilitated with the implementation of Artificial Intelligence in supply chain and logistics. Artificial intelligence can be implemented for better inventory management which facilitate proper flow of items in and out of the warehouse. This can help prevent overstocking, understocking, and unexpected inventory depletion. However, the inventory management process involves a number of inventory-related variables (order processing, picking, and packing) that can make the process both time-consuming and highly error-prone. This is where AI-based supply chain planning tools with the ability to process big data can prove to be very effective. These intelligent systems can quickly analyse and interpret huge data sets and provide timely guidance to forecast demand and supply. Some AI systems are so advanced that they can even predict and discover new spending patterns and predict seasonal demand. This level of AI application helps predict future customer demand trends and minimize the cost of carrying unwanted inventory.



Even though AI is found to be a boom in society, it has many negative sides too. The biggest and most obvious disadvantage of using artificial intelligence is its high development cost. The price varies depending on what you need the AI to achieve. Once AI is fully installed and helps improve workflow, the cost will eventually be recouped. However, the initial costs can be daunting, if not overwhelming. We can observe that AI is slowly replacing human skills. In such a way there is a high probability of increasing unemployment worldwide. Yet AI's inability to make decisions using emotions and creativity becomes its next drawback. Due to its lack of creativity, AI cannot provide unique solutions to problems or excel in any highly artistic profession. AI can be programmed to produce "new" thoughts, but not truly original thoughts at this stage of development. People are better equipped to provide a solution when a company is looking for a unique or imaginative solution to a problem. Another serious problem is about safety and security. As a result of the rapid development and application of technology, many ethical concerns have arisen in relation to the use and further development of artificial intelligence. Concerns about the protection of consumer data are among the most cited ethical concerns. Data sustainability presents many challenges to the informed consent of data owners. AI can also gather information about people without direct access to their personal data, as it is excellent at spotting trends. Since there is a high vulnerability of attack, which gives high further negative consequences. This creates a need to properly handle the implementation of Artificial Intelligence.

Artificial intelligence has enormous potential to create a better place to live. Ensuring that artificial intelligence is not overused is critical to the future of humanity. Therefore, understanding the advantages and disadvantages of AI is a key issue for developers and businesses. AI has already brought benefits both large and small in recent decades, and exciting innovations and discoveries can be expected as computing advances. These sophisticated machines made business more efficient and daily life a little more convenient. From Alexa to big data warehouses and industry-leading speech recognition technology, AI applications are likely to improve over time. Artificial intelligence technology also has some disadvantages that researchers and experts must consider when developing new applications.

## **Amazon**



Amazon is a multinational technological company which was founded by Jeff Bezos from his garage on 5<sup>th</sup> July 1994. Initially it was just an online platform where we could sell books. Later in 1998 it started to sell music and videos. Afterwards they expanded their business to United Kingdom and Canada. Sooner they started to sell consumer electronics, home improvement items, games, and toys. After the starting of 21<sup>st</sup> century they stepped into providing APIs to web developers to build web applications through Amazon Web Services (AWS) in order to provide cloud space, storage and computing power. It also flourished into Alexa web information services. In 2006 amazon allowed other small business or individuals (3<sup>rd</sup> party members) to sell products through their platform. In 2017 they acquired Whole food market. About 2.14 billion people worldwide buy goods and services online, and the number of Prime members who shop at Amazon stores now exceeds 200 million.



Logistics and distribution are always Amazon's strength and that is one of the major reasons for their successful run. The company has a lot of distribution hubs and maintains a good channel of connection to the customers. The company gives high preference to consumer values and gives importance to faster shipping and they also use AI technology, robots and drones in order to make their operations more effective.

Amazon is one of the major players in E-commerce, cloud computing and AI. The future seems quite bright to them as they have all the advanced technologies. Amazon has many products and services: Retail goods, Amazon Prime, Kindle, Amazon Pay, Amazon Game Studio, Alexa, Amazon Drive etc.

Amazon Online store is their most important business and they started it by selling books through it and later they expanded it. Now Amazon sells more than 12 million products. Amazon has its own products and it also allows 3<sup>rd</sup> party producers to sell their product through this platform. To purchase through Amazon platform first we need to start an Amazon account through mail id or mobile number. Afterwards we could search the products which we need and we will get the products from different brands and price ranges and we can select from it. We could filter the product category or price which we need to get, so that we could sort out products easily and conveniently. Amazon's online store made shopping easier for everyone by purchasing everything in one click with great offers and price. The experience offered by Amazon was really new to the consumers. During the lockdown Amazon's business increased rapidly and online retail stores market was so high. Users can easily browse and buy things on Amazon's online store because of its user-friendly layout. Customers can conduct product searches by brand, category, price range, or particular keywords. Users may make informed selections about what to buy thanks to the website's product information, reviews, and ratings.

The Prime membership programme is one of the most well-liked aspects of Amazon's online business. Members have access to streaming services like Amazon Prime Video, music, and special offers, as well as free two-day shipping on qualifying products. In some places, same-day and one-day shipping alternatives are also available to Prime members. The vast majority of Amazon's third-party vendors use the website to market their goods. Customers now have access to a large variety of goods, including uncommon and difficult-to-find things. Additionally, Amazon's marketplace platform gives sellers the freedom to determine their

own prices, fostering a market with competitive pricing that is advantageous to consumers. The business is known for providing some of the best discounts on the internet. Amazon attracts customers from all over the world with its substantial discounts on a variety of products during big shopping holidays like Black Friday and End of season sales.

Along with its online store, Amazon has entered other e-commerce markets. These include Amazon Fresh, which delivers groceries, and Amazon Go, a network of cashier less convenience stores. The business has also entered the entertainment sector by launching Amazon Studios, where it produces and streams its own unique content.

Algorithms for machine learning and artificial intelligence are used to power Amazon's online business. These technologies allow the business to provide clients personalised suggestions based on their browsing and purchasing history. This feature makes shopping more individualised while also assisting clients in finding things they are interested in. Overall, the way people shop has been revolutionised by Amazon's online store. It has grown to be one of the most well-liked e-commerce platforms in the world thanks to its broad product range, affordable prices, and top-notch customer service.

### **AI application in Amazon**



Amazon is one of the largest technology corporations in the world. It primarily emphasises the operational aspect. Amazon is well known for its operations and supply chain. In order to function significantly better and more easily, it has also integrated AI into its operating system. For the purpose of enhancing customer service and other processes, the corporation has invested in AI technologies like machine learning.

Amazon builds much of its business on systems based on machine learning. Without ML, Amazon would not be able to grow its business, improve customer experience and selection, or optimize the speed and quality of logistics. Amazon launched AWS to allow other companies to enjoy the same IT infrastructure with flexibility and cost advantage, and now it continues to democratize ML technologies into the hands of every business. The structure of Amazon's development teams and their focus on ML to solve complex, pragmatic business problems lead Amazon.com and AWS to develop easy-to-use and powerful ML tools and services. These tools are first tested in Amazon's scale and mission-critical environment before being released as AWS services that any business can use like any other IT service. Amazon primarily employs AI in its product recommendation feature, which suggests products to customers based on their search and browsing history and other factors. When recommending a product to a customer, an algorithm takes into account search searches, purchase history, and user reviews. The use of algorithms to propose products accounts for 35% of Amazon's revenue. So, AI plays a major role in the success of amazon and its revenue generation. The application of Artificial Intelligence in Amazon can be briefed as the following:

- **Personalised Recommendations:** Amazon's personalised product recommendations is one of the well-known way in which amazon uses Artificial intelligence. By effectively anticipating customer demands through personalized product recommendations, Amazon can maintain customer satisfaction while gaining greater market share. Customers are shown a list of suggested products when they visit the Amazon website or app based on their prior purchases and browsing behaviour. These suggestions are produced by machine learning algorithms and services that examine client data to find patterns and trends. Amazon uses inter-entity collaborative filtering to make this feature work.
- **Supply Chain Optimization:** Millions of products are sent to clients worldwide by Amazon through its extensive and sophisticated supply chain. Amazon employs AI to optimise its supply chain in a number of ways to manage this process effectively. This

entails predicting product demand, maximising stock levels, and sending orders to the most effective fulfilment facilities. In order to predict which products will be popular in the future and to modify its inventory levels accordingly, Amazon, for instance, employs AI and ML. This facilitates waste reduction and guarantees that consumers receive their products on schedule.

- **Voice-enabled shopping experience through Alexa:** Amazon claims that their voice assistant, Alexa, enables customers to browse products, make purchases, and manage the checkout process without needing to click or touch a screen. This allows users to conduct their checkout procedure without needing to use their hands. This AI application aims to make Amazon shopping more convenient for users and provide its customers with an offline shopping experience by enabling users to create shopping lists and get Alexa recommendations.
- **Fraud Detection:** Amazon is vulnerable to fraud because its platform processes millions of transactions every day. Amazon employs AI for detecting and preventing questionable account activity, identifying and eliminating fraudulent listings, and protecting both its customers' and its own interests. For instance, the AI system might alert suspicious behaviour if a customer's account is accessed from a different location and demand identity verification before enabling them to make a purchase.
- **Customer Service:** Alexa, Amazon's virtual assistant, employs artificial intelligence to give customers prompt and precise responses to their inquiries. Alexa may be used to place orders, answer queries about items, and provide information about the weather, traffic, and other things. It is integrated into a number of Amazon products, including the Echo smart speaker. Amazon is able to relieve the workload on its human customer support personnel and offer customers a more effective and pleasant experience by employing AI to handle customer service issues.
- **Image and Video Analysis:** Amazon uses AI to analyse images and videos to improve the accuracy of product recommendations and to identify and remove inappropriate or offensive content from our platform. For example, if a customer uploads a photo of a product they are interested in purchasing, an AI system could analyse the photo to identify the product and suggest similar products that the customer might be interested in. Similarly, when a customer uploads a video, if it contains inappropriate or offensive content, the AI system may flag that video for review by a human moderator.

- **Predictive Maintenance:** To keep our fulfilment centres running smoothly, Amazon uses predictive analytics to predict when equipment is likely to fail. By analysing data from sensors and other sources, AI systems can identify patterns that indicate early equipment failure. This allows maintenance to be planned before problems occur, reducing downtime and increasing efficiency.

The use of artificial intelligence has helped Amazon become more efficient, improve customer experience and increase profitability. As AI technology advances, Amazon can continue to find new and innovative ways to use AI to improve its operations. With the use of AI, Amazon intends to use drones to transport items in the future. Amazon uses AI heavily for its use and proper function. But AI uses lot of personnel data and other data in order to predict as per the algorithm so it may also have issues related to safety and privacy. There will be high chance of information leakage so they need to properly maintain and kept safe. Storage of data and privacy is one of the main issues faced by most of the companies. There will be large data available and the chance of it being misused is really high. Through including AI to customer services or operation the aim is to improve the functionality but privacy is also important. Companies try their maximum to safe keep their data. So with proper maintenance of data, AI can be used to good cause and can improve the efficiency of the firm.

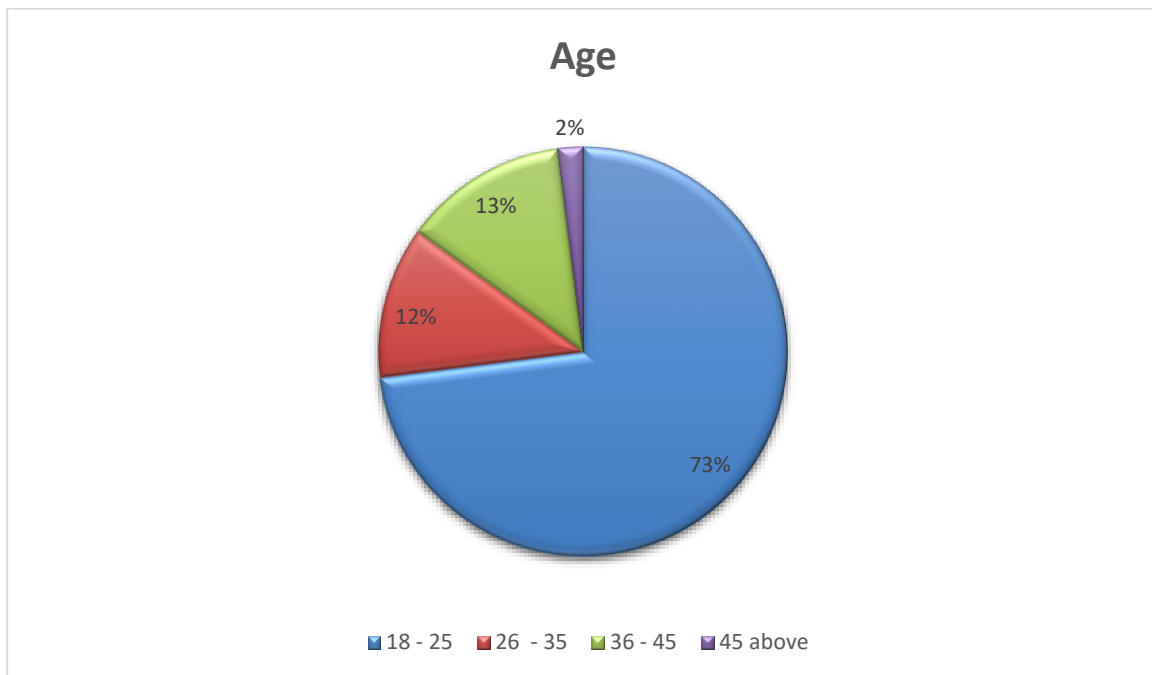
**CHAPTER 4**

**DATA ANALYSIS AND INTERPRETATION**

Table 4.1 shows the age of respondents

Age	Frequency	Percentage
18 - 25	73	73
26 - 35	12	12
36 -45	13	13
45 Above	2	2
Total	100	100

Chart 4.1 shows the age of respondents



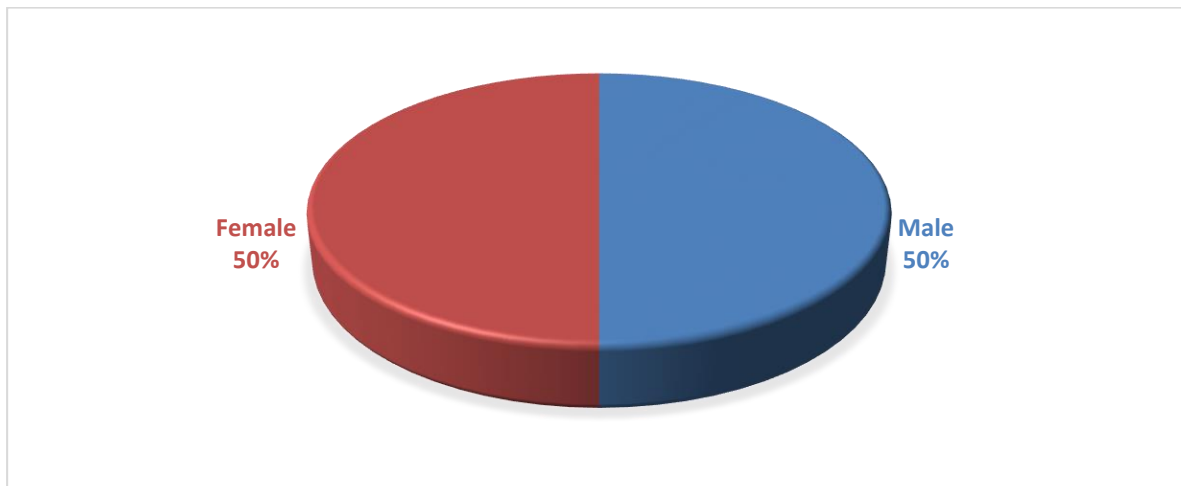
#### Interpretation

Table 4.1 shows that majority of the respondents belongs to the category of 18 -25 which has 73 percentage of the respondents.13 percentage belongs to 36 – 45 category.12 percentage belongs to 26 – 35 category and 2 percentage of respondents belongs to above 45 age category

Table 4.2 shows the gender of respondents

Gender	Frequency	Percentage
Male	50	50
Female	50	50
Other	0	0
Total	100	100

Chart 4.2 shows the gender of respondents



#### Interpretation

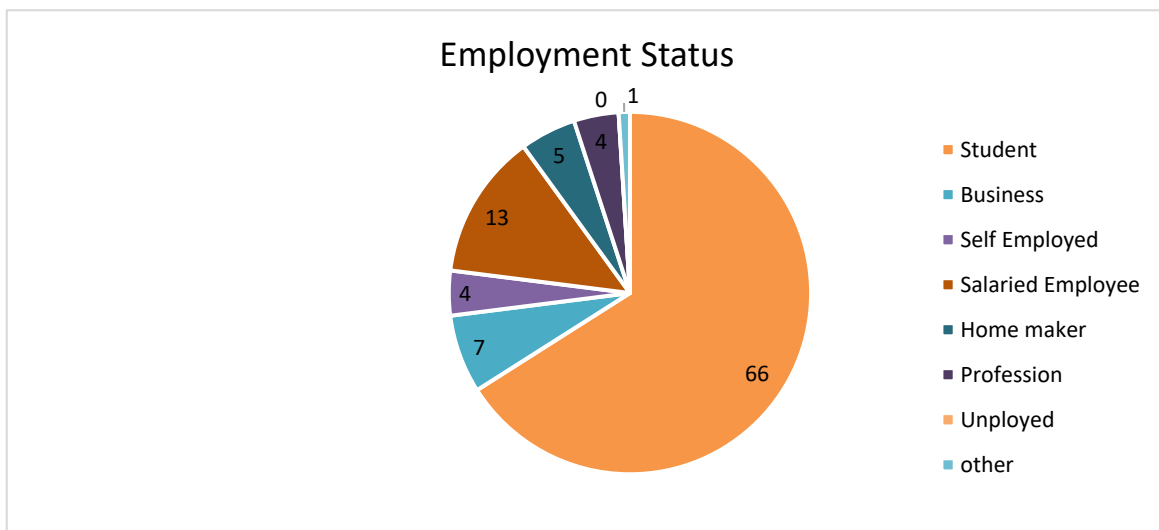
Table 4.2 shows that out of 100 respondents 50 percentage of the respondents belongs to male category and the rest 50 percentage of respondents belongs to female category.



Table 4.3 shows the employment status of respondents

Employment status	Frequency	Percentage
Student	66	66
Business	7	7
Self employed	4	4
Salaried employee	13	13
Home maker	5	5
Profession	4	4
Unemployed	0	0
Other the	1	1
Total	100	100

Chart 4.3 shows the employment status of respondents



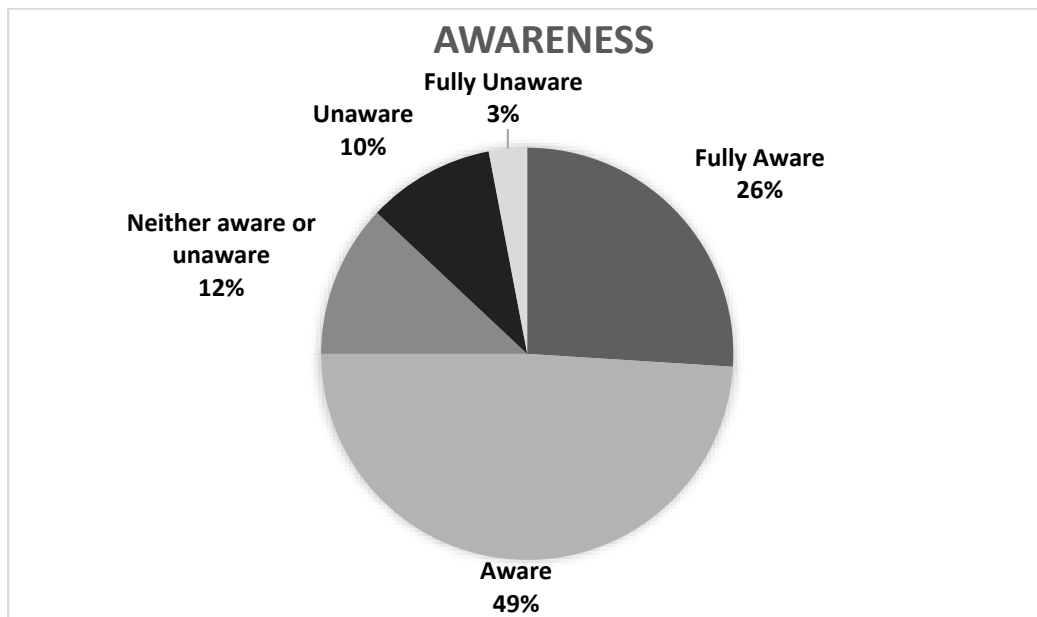
#### Interpretation

Table 4.3 shows that out 100 respondent's majority were belonging to student category. 13 percentage of the respondents belongs to salaried employee category and 7 percentage belongs to business category.

Table 4.4 shows the Awareness on Amazon's use of AI in its products service

Awareness	Frequency	Percentage
Fully aware	26	26
Aware	49	49
Neither aware or unaware	12	12
Unaware	10	10
Fully unaware	3	3
total	100	100

Chart 4.4 shows the Awareness on Amazon's use of AI in its products service



#### Interpretation

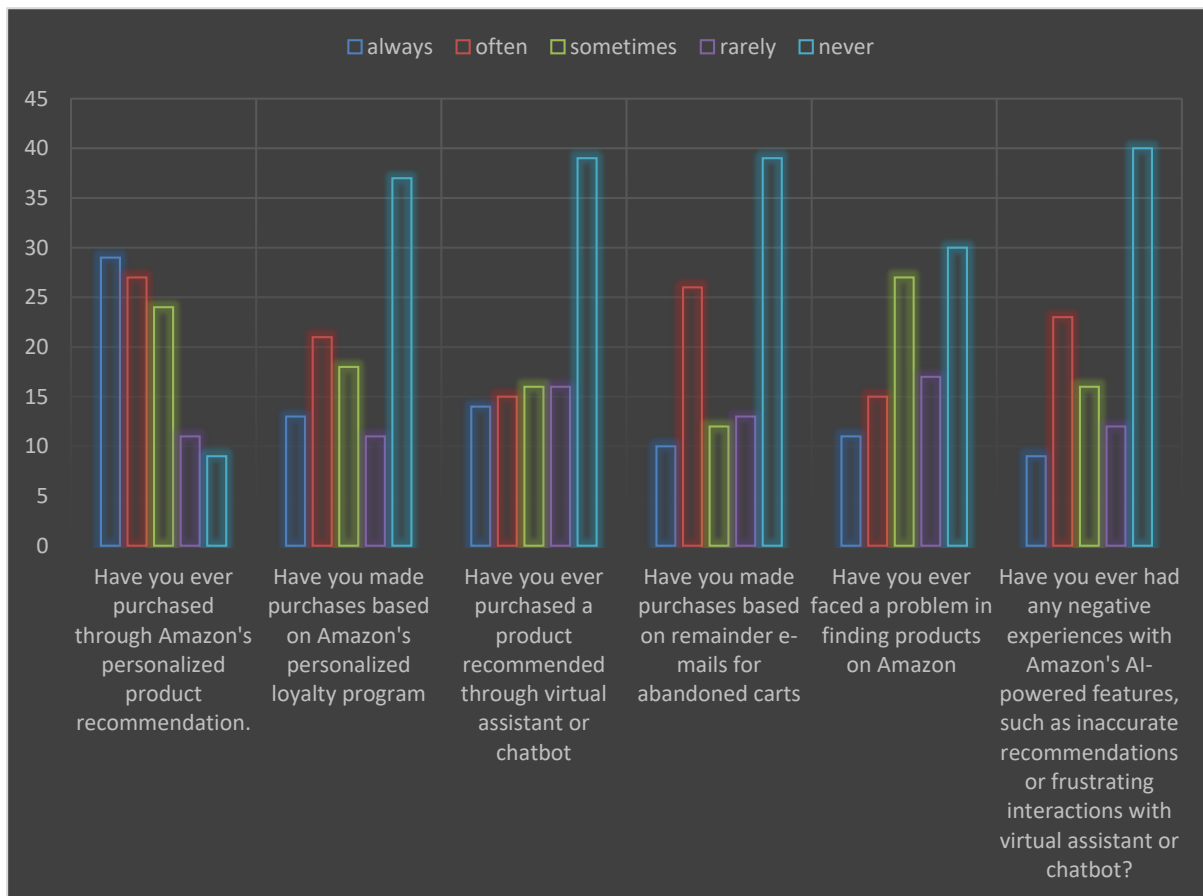
Table 4.4 shows that out of 100 respondents most of the respondents were aware of Amazon's use of AI in its products service and 26 percentage of the respondents are fully aware of the same. 12 percentage of the respondents are neither aware or unaware and 10 percentage of the respondents are unaware. Rest 3% of respondents are fully unaware how Amazon uses AI in its products and service.

Table 4.5 shows ranking based on consumer's experience

	Ranking				
	Al ways	Oft en	Som etimes	Rar ely	Ne ver
Have you ever purchased through Amazon's personalized product recommendation.	29	27	24	11	9
Have you made purchases based on Amazon's personalized loyalty program	13	21	18	11	37
Have you ever purchased a product recommended through virtual assistant or chatbot	14	15	16	16	39
Have you made purchases based on remainder e-	10	26	12	13	39

mails for abandoned carts					
Have you ever faced a problem in finding products on Amazon	11	15	27	17	30
Have you ever had any negative experiences with Amazon's AI-powered features, such as inaccurate recommendations or frustrating interactions with virtual assistant or chatbot?	9	23	16	12	40

Chart 4.5 shows ranking based on consumer's experience



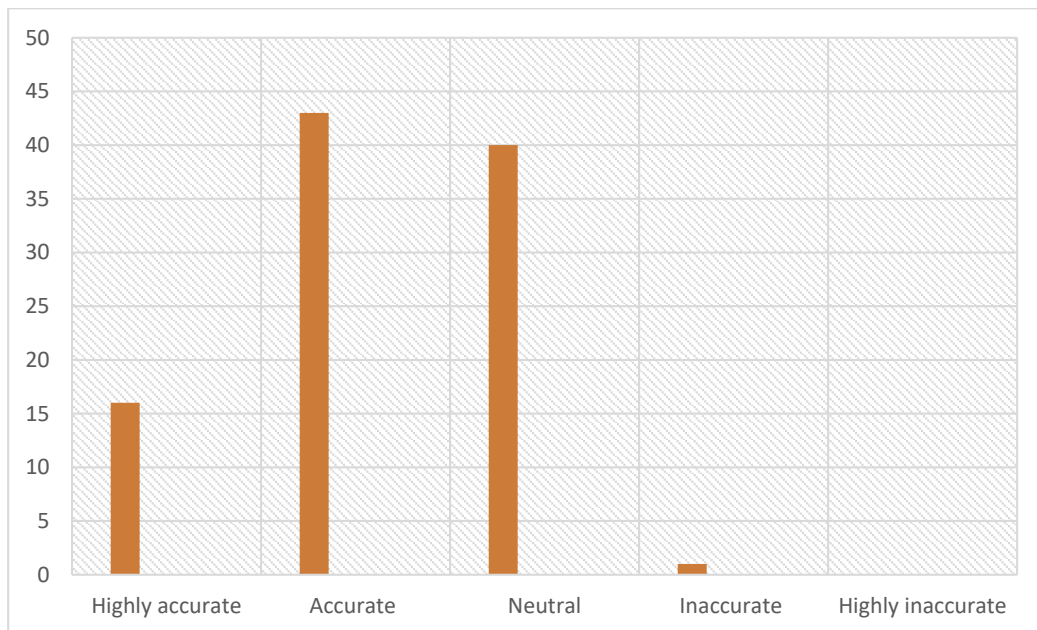
### Interpretation

The chart shows that Majority of the respondents (29%) have purchased through Amazon's personalized product recommendations. 37% of respondents consisting the majority have never made any purchase based on Amazon's personalized loyalty program. Most of the respondents consisting 39% have never purchased any product recommended by virtual assistant or chatbot and have also not made any purchase based on e-mail reminders on abandoned carts. 30% of the respondents have never faced any problem in finding products on amazon and the majority 40% have also never had any negative experience with amazons AI powered features.

Table 4.6 shows the accuracy of Amazons product recommendation

Accuracy	Frequency	percentage
Highly accurate	16	16
Accurate	43	43
Neutral	40	40
Inaccurate	1	1
Highly inaccurate	0	0
Total	100	100

Chart 4.6 shows the accuracy of Amazons product recommendation



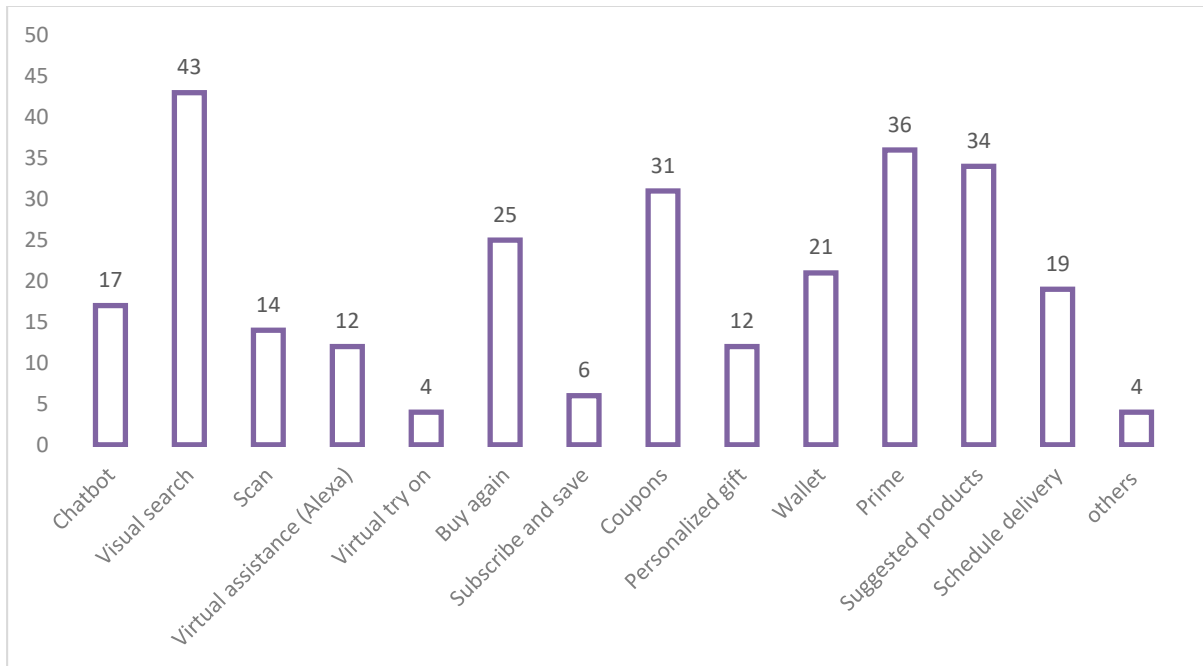
#### Interpretation

Table 4.6 shows that out 100 respondents' majority of them thinks Amazon's product recommendations are accurate. 40 percentage of the respondents are neutral about Amazon's product recommendations and 16 percentage thinks Amazons product recommendations are highly accurate. Rest 1 percentage of the respondents thinks that amazon's product recommendations are inaccurate.

Table 4.7 shows the most used features of Amazon

Features	Frequency	Percentage
Chatbot	17	17
Visual search	43	43
Scan	14	14
Virtual assistance (Alexa)	12	12
Virtual try on	4	4
Buy again	25	25
Subscribe and save	6	6
Coupons	31	31
Personalized gift	12	12
Wallet	21	21
Prime	36	36
Suggested products	34	34
Schedule delivery	19	19
Others	4	4

Chart 4.7 shows the most used features of Amazon



### Interpretation

Table 4.7 shows the most used features of Amazon is visual search with a percentage of 43. Prime is the second most used feature of Amazon by 36 percentage of the respondents. 34 percentage of the respondents use suggested products feature and 31 percentage of them uses coupon. Buy again feature is used by 25 percentage and wallet is used by 21 percentage of the respondents. 19 percentage of respondents use scheduled delivery and 17 percentage uses chatbot feature of Amazon while they make purchase. The scan feature of Amazon is used by 14 percentage and visual search and personalized gift feature is used by 12 percentage of the respondents. The least used features by the respondents are subscribe and save (6%), virtual try on (4%) and other features (4%).

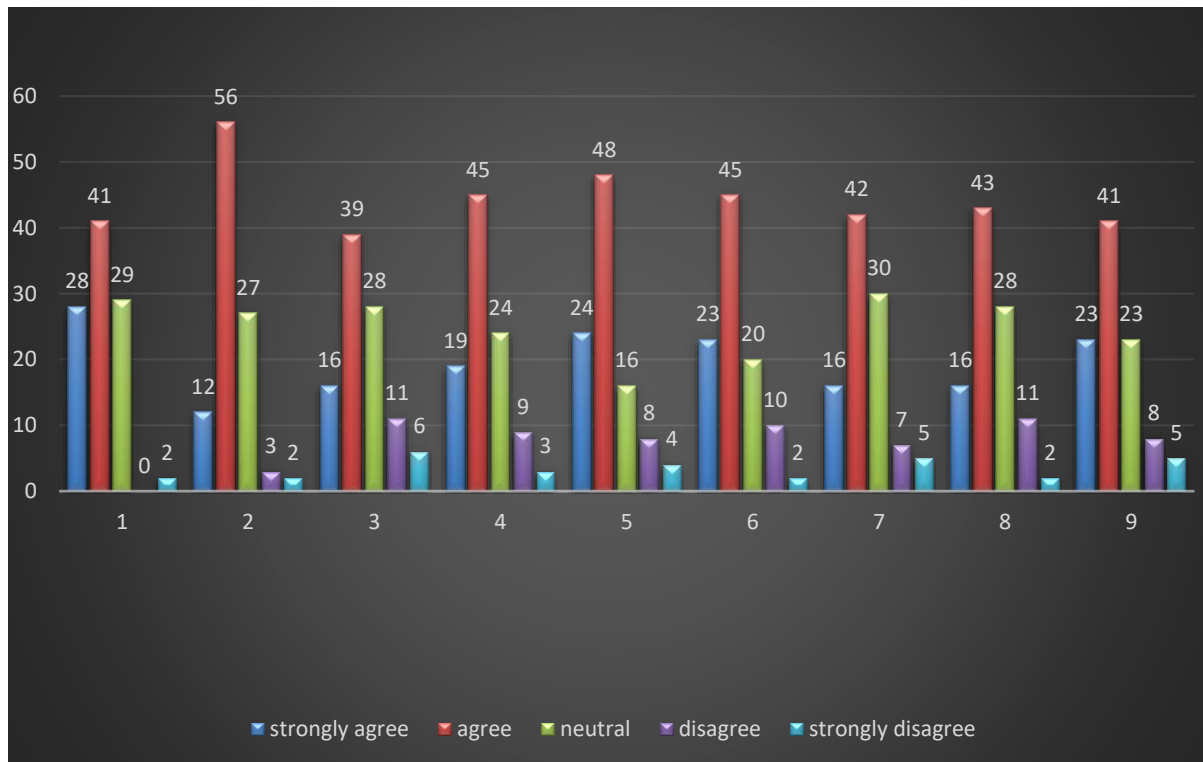


Table 4.8 shows consumers ranking as per their judgement over Amazon’s application of Artificial Intelligence

Statements	Ranking				
	strongly agree	agree	neutral	disagree	strongly disagree
1) Amazons use of AI in its product recommendation has improved shopping experience	28	41	29	0	2
2) Amazon's use of chatbot has improved its customer service	12	56	27	3	2
3) E-mail campaigns are effective in creating demand for products	16	39	28	11	6
4) Virtual try on feature of Amazon have made shopping more convenient	19	45	24	9	3
5) Personalized pricing offers creates a sense of	24	48	16	8	4

<b>urgency to buy products.</b>					
<b>6) AI powered product recommendations are more effective than traditional recommendations</b>	23	45	20	10	2
<b>7) Chatbot understand and cater to customers unique needs and preferences</b>	16	42	30	7	5
<b>8) AI powered recommendations creates demand for products that customers would not have purchased otherwise</b>	16	43	28	11	2
<b>9) Amazon's use of AI has impacted your buying behavior</b>	23	41	23	8	5

Chart 4.8 shows consumers ranking as per their judgement over Amazon’s application of Artificial Intelligence



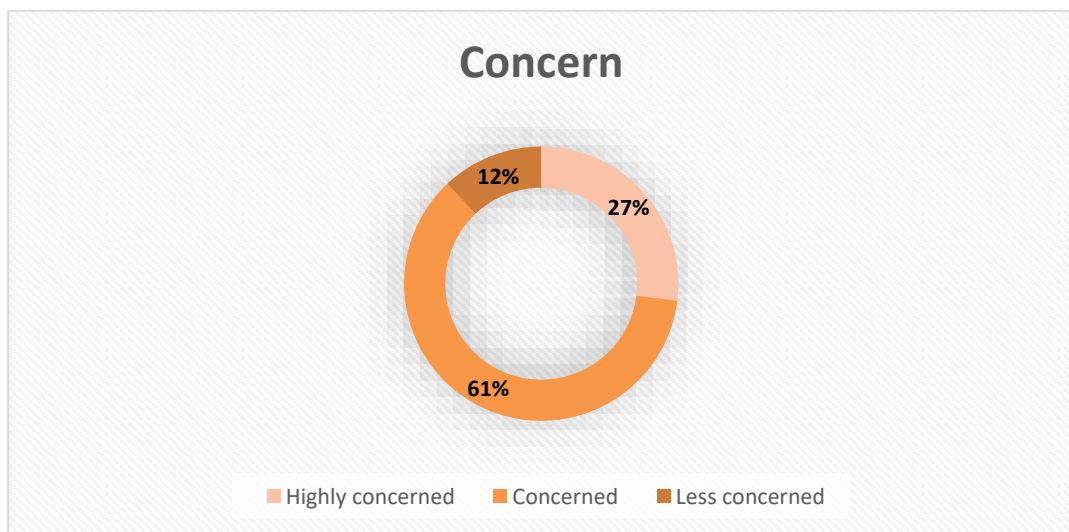
### Interpretation

The chart shows that majority of the respondents (41%) agree that amazon’s use of Artificial intelligence have improved their shopping experience. 56 respondents agree that chatbot have improved amazon’s consumer service and 39 of them agrees that e-mail campaigns are effective in creating demand for products. 45 respondents agree that virtual try on feature of amazon have made shopping more convenient and also felt AI powered recommendations to be more effective than traditional recommendations. Majority of the respondents (48) agree that personalized pricing creates an urgency to buy products and 42 of them agree that chatbot can cater to customer’s unique needs. 43 of them agree that AI powered recommendations creates demand for products that they would not have purchased otherwise and 41 of them agrees that Amazon's use of AI has impacted their buying behavior.

Table 4.9 shows the respondents concern towards the potential privacy implications of Amazon while using AI, such as data collection and analysis.

Concern	Frequency	Percentage
Highly concerned	27	27
Concerned	61	61
Less concerned	12	12
Total	100	100

Chart 4.9 shows the respondents concern about the potential privacy implications of Amazon's use of AI, such as data collection and analysis



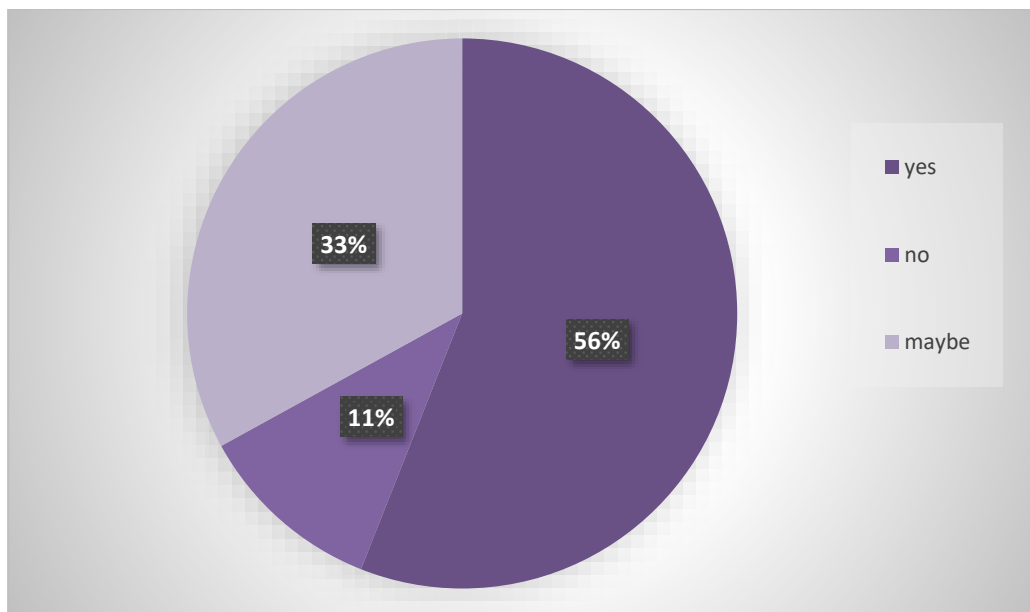
#### Interpretation

Table 4.9 shows that out of 100 respondents 61 percentage of the respondents are concerned about the potential privacy implications of Amazon's use of AI, such as data collection and analysis and 27 percentage of respondents are highly concerned while 12 percentage of the respondents are less concerned.

Table 4.10 shows the respondents thought on improving Amazon's use of AI to better serve its customers.

Suggestion	Frequency	Percentage
Yes	56	56
No	11	11
May be	33	33
Total	100	100

Chart 4.10 shows the respondents thought on improving Amazon's use of AI to better serve its customers



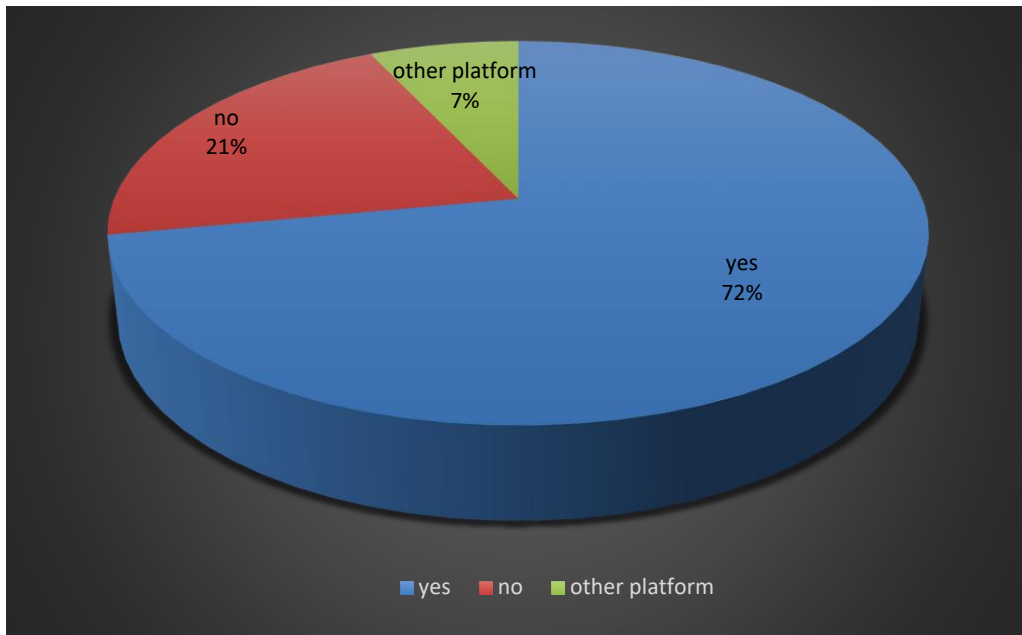
#### Interpretation

Chart 4.10 shows majority of the respondents thought that Amazon could improve its use of AI to better serve its customers .11 percentage of the respondents think there is no such need to improve and 33 of them thinks that Amazon can maybe improve its AI to better serve its customers.

Table 4.11 shows if the respondents would recommend Amazon or use different platforms

	Frequency	Percentage
Yes	72	72
No	21	21
Other platforms	7	7
Total	100	100

Chart 4.11 shows if the respondents would recommend Amazon or use different platforms



#### Interpretation

Table 4.11 shows that out of 100 respondents 72 percentage of the respondents will use and recommend Amazon to other based on its use of AI .21 percentage of the respondents will not recommend Amazon to other based on its use of AI and rest 7 percentage of respondents will prefer to use other platforms.

**CHAPTER 5**

**FINDINGS, SUGGESTIONS, CONCLUSION**

## **FINDINGS**

- Majority of the respondents of the study were from the age group of 18 – 25 which shows that the people in this age group is more into online shopping.
- Half of the respondents were male and the other half was female which indicates that people prefer AI powered platforms irrespective of the gender.
- The data shows that people with different employment status uses AI powered platforms.
- Majority of the respondents were aware of Amazon using Artificial Intelligence while almost 13 percentage of the respondents were not aware of the use of Artificial Intelligence in Amazon.
- Most of the respondents have made purchases based on Amazon’s personalized product recommendations which shows the influence of AI over consumer buying behavior.
- Majority of the respondents have never made a purchase based on Amazon’s personalized loyalty program which thus indicates an area where Amazon needs to improve.
- The data collected indicates that most of the respondents have not made any purchase based on products recommended by chatbot or virtual assistant. This shows that the people are not fully influenced by AI recommendations.
- As per the study, majority of the respondents have not made any purchase based on e-mail reminders on abandoned carts which shows that the people care less about e-mail reminders.
- The study analyzed that Amazon makes a good use of AI as majority of the consumers have not faced any difficulty in finding products on Amazon and have never faced any difficulty with or negative experience with Amazon’s use of AI.
- Majority of the consumers feel that amazon’s product recommendations are accurate.



- The most used AI powered feature of Amazon as per the study is visual search followed by prime and suggested products.
- Most of the respondents agree that amazon's use of AI have improved their shopping experience.
- Majority of the respondents agree that chatbot have improved amazon's consumer service and caters to consumer's unique needs and preferences.
- The study shows that Artificial Intelligence helps in creating demand for the products through e-mail camping's and consumers tend to purchased product through recommendations that they would not have purchased otherwise.
- As per the data, the consumers agree that AI powered recommendations are more effective than traditional recommendations.
- The study indicates that use of Artificial Intelligence in e-commerce has influenced the buying behavior of consumers.
- Majority of the people are concerned about the potential privacy implications of Amazon's use of AI, such as data collection and analysis.
- The consumers think that Amazon could improve its use of AI to better serve its customers.
- Most of the respondents prefer to use amazon and would recommend it to others, which shows the effectiveness of the platform in satisfying its customers.

## **SUGGESTIONS**

- Amazon can improve its AI to better serve its customers
- The data collection and privacy implication concern of the consumers can met in an effective way
- Amazon can use AI to provide accurate products to avoid consumers receiving wrong products.
- It can use AI to identify fraud and defective products.
- It can be transparent in the data it collects to reduce the tension in the minds of consumers

## CONCLUSION

Amazon have made tremendous progress enhancing its operations and customer experience with the implementation of Artificial Intelligence. Personalization, recommendation engines, logistics and supply chain management, fraud detection, and natural language processing are just a few of the areas where Amazon uses AI. Amazon has been able to improve customer experience, increase productivity, and streamline operations with the adoption of Artificial Intelligence. Additionally, by recommending products to customers based on their browsing and purchase history, AI-powered recommendation systems have assisted Amazon in increasing sales. The study reflects the positive attitude of the consumers towards the application of AI in Amazon. The consumers experienced better shopping experience with the assistance of Artificial Intelligence. The success of Amazon through its implementation of Artificial Intelligence reflects the substantial impact of Artificial Intelligence over the drastic progress of e-commerce platforms. However, there are certain issues with Amazon's usage of AI as well. The consumers are concerned about the collection of personal data by the company and thinks that Amazon could improve its use of Artificial Intelligence for better customer support.

Even though Artificial Intelligence provides a great opportunity for e-commerce platforms to prosper, the cost of installation and technical knowledge required for implementing Artificial Intelligence is immense. Besides the challenges to deal with, the implementation Artificial Intelligence has clearly made an impact on the drastic progress of e-commerce industry. Artificial Intelligence has been a major factor in Amazon's success. Despite the company's impressive achievement in using AI to enhance operations and customer satisfaction, there is still space for improvement in how it addresses worries about the use of AI.

# **ANNEXURE**

## QUESTIONNAIRE

1. E-mail:

2. Age:

18 – 25

26 – 35

36 – 45

Above 45

3. Gender:  Male  Female  Other

4. Employment status

Student

Business

Self employed

Salaried employee

Home maker

Profession

Unemployed

Other

5. Are you aware of how amazon uses AI in its products and services?

Fully aware

Aware

Neither aware or unaware

Unaware

Fully unaware

6. rank the following based on your experience

Question	Ranking				
	Always	Often	Sometimes	Rarely	Never

a) Have you ever purchased through Amazon's personalized product recommendation.					
b) Have you made purchases based on Amazon's personalized loyalty program					
c) Have you ever purchased a product recommended through virtual assistant or chatbot					
d) Have you made purchases based on remainder e-mails for abandoned carts					
e) Have you ever faced a problem in finding products on Amazon					
f) Have you ever had any negative experiences with Amazon's AI-powered features, such as inaccurate recommendations or frustrating interactions with virtual assistant or chatbot?					

7. How accurate do you think amazon's product recommendations are?

highly accurate

accurate

neutral

inaccurate

highly inaccurate

8. Which of the following feature of amazon do you use the most?

- Chatbot
- visual search
- Scan
- Virtual assistance (Alexa)
- Virtual try on
- Buy again
- Subscribe and save
- Coupons
- Personalised gift
- Wallet
- Prime
- Suggested products
- Schedule delivery
- other

9. Rank the following based on your judgement.

Statements	Ranking				
	strongly agree	agree	neutral	disagree	strongly disagree
1) Amazons use of AI in its product recommendation has improved shopping experience					
2) Amazon's use of chatbot has improved its customer service					
3) E-mail campaigns are effective in creating demand for products					

4) Virtual try on feature of Amazon have made shopping more convenient					
5) Personalized pricing offers creates a sense of urgency to buy products.					
6) AI powered product recommendations are more effective than traditional recommendations					
7) Chatbot understand and cater to customers unique needs and preferences					
8) AI powered recommendations creates demand for products that customers would not have purchased otherwise					
9) Amazon's use of AI has impacted your buying behaviour					

10. Are you concerned about the potential privacy implications of Amazon's use of AI, such as data collection and analysis?

Highly concerned

Concerned

Less concerned

11. Do you think Amazon could improve its use of AI to better serve its customers?

Yes

No

Maybe



12. Would you recommend Amazon to others based on its use of AI, or would you prefer to use a different platform with different AI features.

Yes

No

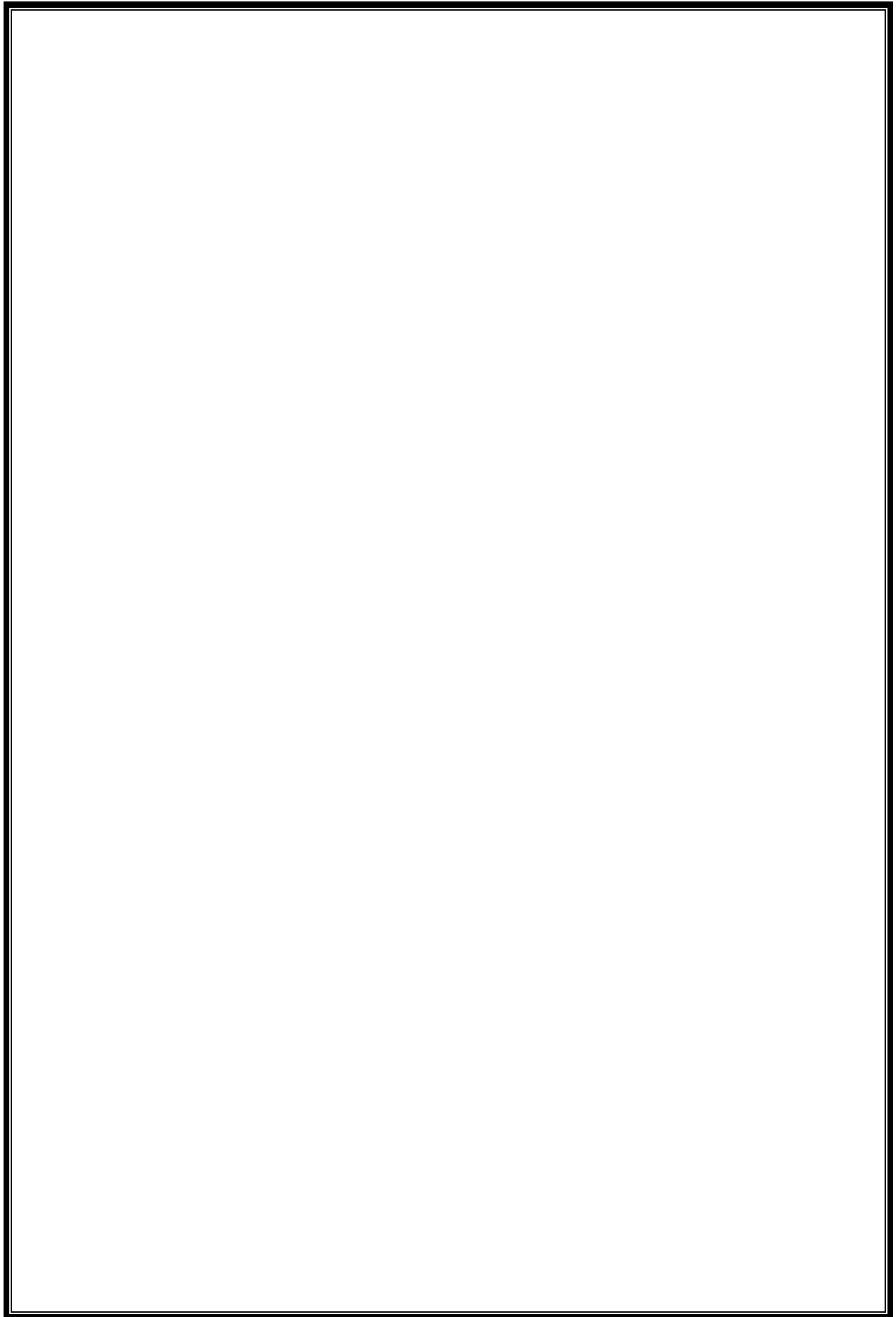
Other platform

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