ORGANIZATION, BUSINESS AND MANAGEMENT

THE FUTURE OF E-COMMERCE

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NOVA

Organization, Business and Management

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The Future of E-Commerce

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Preface

Developments in information and communication technologies have touched upon many facets of human society and offered a number of disruptive innovations. In the last decade, information technology has changed the way people buy goods and services. The emergence of low-cost smartphones and the availability of the internet has changed the lifestyle of people and traditional commerce has moved to e-commerce and more precisely m-commerce. People are now more attached the online retail platforms rather than the street corners. Interest in social media and reliance on online feedback have further fueled the large number of e-commerce platforms across the globe. The recent COVID-19 pandemic brought an unprecedented and exogenous shock to the normal life at large and forced the people to implement an online work culture. A number of sectors found big opportunities to out-perform all their past measures and innovate through e-commerce-based services. The futuristic outlook of e-commerce seems to be very lucrative as a number of researchers have estimated the growth in different e-commerce-based services. However, these predictions need innovative models to support the growth of e-commerce in the near future.

The present book provides a set of illustrative cases and business models to support the futuristic applications of e-commerce. Not only the growth but limitations have also been discussed along with the social and ethical perspectives. The book consists of 11 chapters written on various dimensions of futuristic e-commerce in the context of a number of different markets across the globe. The first chapter, "Web Analytics: The Present and Future of E-Business" elaborates on the adoption of web analytics by e-commerce vendors. The importance of web analytics along with its emerging applications for acquiring and serving the customers have been presented in the chapter. The author has talked about the different metrics being used in web analytics and the strategies to integrate web analytics into e-commerce platforms. Along similar lines, Chapter 2 talks about social media analytics and its applications to futuristic e-commerce. Social media analytics tools, which help in tracking

customers, analysing reports, tracking performance, and performing competitor analysis have been presented in this chapter.

The role of artificial intelligence in the growth of e-commerce has been presented in Chapter 3. The chapter highlights the significant role played by artificial intelligence in the whole customer lifecycle with customer acquisition, enhancement, and retention. A number of examples have been cited by the author with specific applications of artificial intelligence. Going deeper in the field, the machine learning applications in e-commerce have been illustrated by Md Iqbal. The chapter reviews the machine learning methods being deployed on e-commerce websites to analyse consumer sentiments and product recommendations based on consumer-product interactions. Going ahead, the adoption of mobile commerce and acquisition of customers with mobile commerce-based strategies have been presented in Chapter 5. The author has presented the mobile apps and web-based m-commerce business models considering the various stakeholders and business strategies.

The growth of e-commerce in South East Asia has been presented in chapter 6. A comparative analysis of the different countries has been presented along with the major business players in each country. A specific case of agriculture-based e-business has been presented in Chapter 7. This chapter highlights the futuristic scope of the e-agribusinesses in India and how e-commerce platform's scope, prospects & challenges can be addressed for agri-businesses in India. The author has given a lot of examples from India to illustrate the different aspects of agri-e-business. Taking up the perspective of customer satisfaction, the concept of customer loyalty has been presented in the next chapter. The author has presented a comprehensive literature review to discuss e-trust and e-satisfaction as important perspectives of future e-commerce.

Smart tourism as an application of future e-commerce has been presented in Chapter 9. The concept of sustainability with smart tourism has been discussed with a comprehensive literature review. This chapter aligns a direction for the destination development in alignment with smart sustainability as an application of futuristic e-commerce. Insights to the social and ethical aspects of E-commerce have been presented in Chapter 10. The author has suggested that social and ethical issues are present in both brick-and-mortar business as well as e-commerce, however, e-commerce offers a lot of opportunities to contribute to society and these must be harnessed. Safety measures for e-commerce platforms have been presented in Chapter 11 to

support the positive attitude of customers. This chapter conceptualizes the psychosocial effect on the customer attitude towards online shopping.

The book volume covers the different aspects of e-commerce's future in a comprehensive manner. We trust that the book will be a good resource for both the industry and academia and will lead to e-commerce-based innovations for the future. Learning from the book will give rise to the emergence of new business models to serve modern society in a holistic manner.

Acknowledgements

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We are thankful to all the authors for sending their scholarly work and working with the reviews as per the tight deadlines. We are indebted to the reviewers from academia and industry, who worked so hard to make this work a novel piece. We are especially thankful to all the Editorial Advisory Board Members for their valuable inputs and critical remarks on different aspects of the book. We appreciate the support of administrative and editorial staff from Nova Science Publishers (NOVA), USA, particularly for working with full interest and devotion for the timely launch of this book.

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Chapter 1

Web Analytics: The Present and Future of E-Business

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Abstract

With the futuristic trends of e-commerce, it is becoming increasingly important to measure the performance of a specific website as precisely as possible. This has become more critical as the Internet's popularity continues to expand and as new uses for the internet are discovered and created. Due to the Internet, competition has shifted, with goods, supply chains, and even markets altering. Because of its democratization, consumers now have more influence, which might be viewed as a threat by companies. However, the emerging knowledge gained from digital media has the potential to contribute to tailored services, innovation, and engagement with customers on a real-time basis, among other things. This article, which is based on a number of case studies, attempts to establish a complete implementation of web analytics to accomplish these business goals and, as a result, to help organizations gain a competitive edge.

Introduction

In terms of communication and information sources, there has been no larger expansion than that of the e-business, which has seen one of the most

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important expansions in human history. Heterogeneous media with the largest dispersion have the potential to exist at some point in time. Electronic commerce (e-commerce) has been made possible by the digital revolution of today, which includes the Internet and widespread usage of websites around the world (Jahan & Martin, 2019; Lata & Kumar, 2021a). The effect of this is that e-commerce can now be found in a wide range of formats and situations (Kumar & Ogunmola, 2022). According to all estimates, the company's sales are predicted to expand at an exceedingly quick rate over the next several years. This is dependent on the idea that computer operating capacity and data transmission rates across communication systems will both expand greatly in the future, so that a considerably better payment system will be established in addition to the enhancement of a much-improved payment system. Electronic commerce is vital for companies to remain competitive in the information era because it helps them to enter new market segments, increase the speed at which their enterprises grow, increase the flexibility of their commercial policies, cut their provisioning, sales, and advertising expenses, and simplify their procedures, among other things (Kumar & Ayodeji., 2021). Even if it is fundamentally an economic concept, e-negative commerce's influence on society is lessened by the following factors in the way it affects economic processes: "decreased operating costs; improved access to market information; increased competition; better allocation of resources; improved competitiveness of enterprises; improved capacity of companies to produce value on this basis (Mohammed & Abdullah, 2018). A total of 7.7 billion people lived on the planet as of 2019. According to Statista's e-commerce figures, there were 1.92 billion online buyers in 2013, representing roughly one-quarter of the world's total population. There will be a rise of internet shoppers between 2014 and 2021, according to the same study (Statista, 2021). So, the number of people shopping online increased to 1.32 billion in 2014 and increased to 1.46 billion the following year. By 2016, the number of online consumers had surpassed the 1.5 billion mark (1.52 billion), and the total number of digital shoppers throughout the world had reached 1.66 billion. The amount had climbed to 1.79 billion in the past year, according to statistics (Statista, 2021). Additionally, as per eMarketer, the worldwide e-commerce sector is forecast to have 2.05 billion online shoppers in 2020, and the industry is likely to have an even bigger growth in digital buyers in 2021, with a sum of 2.14 billion online customers expected in that year. By examining yearly online shopping data, we can see that the number of individuals who purchase online increased by around 7 percent between 2014 and 2019 (eMarketer, 2021). It is projected that these values would continue to rise at a slow and

steady pace in the future. It was a triumph for PipeCandy when they set out to determine how many firms in the e-commerce sector existed throughout the world in 2017. According to the conclusions of their study, there were between 2 million and 3 million e-commerce firms in the globe two years ago, barring China, per the researchers. The source also claims that 1.35 million e-commerce enterprises are situated in the United States and Canada alone, with the majority of them in the former. For the new entrant to improve its efficiency and competitiveness in the cutthroat industry, Web analytics has become a strategy that has been globally implemented to give them a fighting chance.

Web Analytics is the art and science of improving websites in order to enhance their productivity by improving the website experience of their customers. A science because it makes use of statistical tools, data mining methods, and a systematic process. It is considered an art as, like a talented artist, the analyst or advertiser must choose from a broad palette of color schemes (data sources) in order to identify the optimal combination that will generate actionable insights for the organization. Improved websites require a high level of creativity, as well as the ability to balance user-centric architecture, promotions, content, pictures, and other aspects of a website's overall design. Furthermore, the analyst is constantly treading a tight line between website designers, information technology employees, marketers, senior management, and customers. Nowadays, e-business website managers are well conscious that customer acquisition is a multi-faceted operation that involves the use of a variety of strategies such as email, direct mail, affiliate marketing, and, of course, search engine optimization (Mittal & Kumar, 2022). With each new option, they have become more adept at identifying the most appropriate visitors to direct to their websites. In the case of websites, everyone today does have a Search Engine Optimization (SEO) strategic plan in place to assist them to rank highly in search engine organic results. Furthermore, they are mindful that Pay-Per-Click (PPC) adverts can be efficient in attracting targeted visits to a website (Zhao et al., 2020). Rather from being the end of the process, as several marketers believe, acquiring users is only the beginning of it. This study is a descriptive study that explores the present-day scenario and the future application of web Analytics. It is an attempt to highlight the various applications of WA in the e-business industry.

Literature Review

Web analytics on a website is only applicable to the data set that is now on the page (Chitkara & Mahmood, 2019). It is used to measure several aspects of direct contacts between the consumer's account and the server, such as the number of visits, the length of time spent on the site, the number of route clicks, and so on. It also includes information gathered from a variety of sources, including surveys, reports, competitor comparisons, public documents, and so on. This section provides an outline of web analytics on the website, with a particular emphasis on classifying and characterizing data, sources, data gathering techniques, metrics, and methods of analysis, among other things. After the introduction of the World Wide Online in 1989 and the release of the first widely used Mosaic browser in 1993, log files were used to track web requests (Kumar et al. 2022). Founded in Portland, Oregon, WebTrends was a trailblazer in web log analytics, which is the analysis of data via webserver log files. WebTrends was a corporation that specialized in online analytics. In the same year, WebTrends launched the website's first business analytics program, called WebTrends Analytics. Dr Stephen Turner developed software in 1995 that was the world's first free logfile analysis tool. In 1996, WebSide Story offered hit counters as a tool for displaying a banner on websites, which was the first time this had been done. Web server logs have various limits in terms of the data that may be captured. Examples of information that would be excluded would include information on user screen sizes, user interactions with sites, mouse events like click and flush, etc. The new page tagging technology has circumvented this limitation and is growing increasingly popular in recent years. Web analytics are primarily centered on the collecting and analysis of web-based data. Web analytics are currently utilized in a wide range of sectors for a variety of objectives including tracking traffic, optimizing e-commerce, marketing/advertising, web development, information design, enhancing website efficiency, and web-based campaigns/programs, amongst others. The following are among the most significant applications of web analytics (Reddy & Prasad, 2021).

Web Design and User Interaction Efficiency

This comprises the design, functionality, presentation/layout content, and user interaction in order to optimize website data for search engines and other

applications. It also allows for the identification of user preferences and attention areas, as well as the development of the functionality of the Web application.

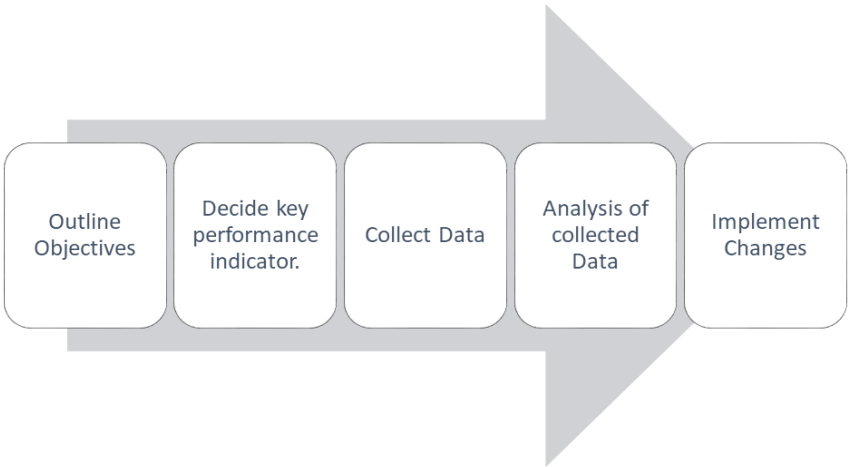

Figure 1. The web analytics process.

According to Singal & Kohli (2016) a heatmap displays sections of a website where the click rate is higher than average, and it may be used to determine whether the expected link or information is located in the appropriate location. On e-CRM, optimization of e-commerce and customer attention, as well as improvements in purchase and retention: More and more organizations are analyzing data from websites in order to better understand the demands of their customers, enhance traffic flow, and this ultimately, raise their earnings. A variety of sites may simply have a few purposes, such as increasing sales of items and drawing more visitors into advertising to generate more income. According to Lee & Yim (2015), websites seek to keep visitors on their sites for longer periods of time (lower bounce rates) such that consumers are enticed to return and finish each visit with a particular action (conversion). Follow-up and evaluation of acts and efforts such as marketing campaigns, in order to determine their efficacy. A broad range of online traffic, marketing platforms, and visitor classifications must be distinguished in order for web analytics to be of value in this context (Bhardwaj & Kumar, 2022). “What kind of information did visitors gain?” is a frequently asked question. Examples include parameters for tracking e-mail, social media, and mobile traffic originating from e-mail (Lata & Gupta, 2020; Lata & Gupta, 2021;

Nanda and Kumar, 2021). These characteristics permit traffic sources to be associated with marketing campaign budgets in order to analyze financial return (Chokrasamesiri & Senivongse X2016). The purpose of web analytics is to identify and improve the online customer experience while simultaneously increasing the profits of online businesses. This may be accomplished through the way of navigation used by customers on a website. According to the Web Analytics Association, the official definition of web analytics is "measured, collecting, analyzing, and reporting online data for the objectives of Web knowledge and optimizing usage." In contrast to reporting technology, web analytics is an ongoing process that advises a virtuous website optimisation cycle to website owners (Gerrikagoitia, et al., 2015). According to industry best practices, the following steps, as depicted in Figure 1, are essential for a framework for website performance assessment to function properly.

Web Analytics Insight into E-Business

All organizations may benefit from web analytics tools, not only those in the financial sector. The e-commerce analytics you require may be seen using Google Analytics. It is possible to quantify and define the website's performance with the use of metering. The conversion rate, average order value, cart abandonment rate, and traffic sources are just a few examples of critical e-commerce indicators. The range of metrics used in e-commerce is broad, and with good reason. As an example, Google Analytics, social media, online storefronts, product sites, homepages, checkout, and shopping carts may all be interpreted and monitored over time. The most important applications can be seen in the following context:

List of the Most Popular Pages and Content

You can learn which parts of a website get the most traffic by using Web Analytics or another web analytics tool, and this knowledge is priceless for any business looking to improve its online presence. This page's bounce rate, as well as the average time spent on it, is all readily available (Ding & Zhang 2016). It is possible to find out this number, you may better understand what your readers are looking for and discover any sites that are missing content.

Having a better idea of what consumers want to see makes it simpler to decide whether or not to make changes to the website's content.

Determine Who Your Customers Are

It's vital in marketing to figure out who the ideal customer is for the products and services being marketed (Kusumawati et al., 2021). In addition to increasing marketing revenue, a clearly defined target audience leaves a positive image on the company as a whole. Businesses may use web analytics to find and connect with the right customers by analyzing their online behavior. Developing marketing materials that provide a good first impression on clients is much easier when the target demographic is identified. In addition to boosting sales and conversions, a website's overall performance may be improved with the right marketing activities directed towards the appropriate audience.

Optimization of the Conversion Rate

A website's "conversion rate" (the proportion of visitors who take a desired action after arriving at the page) can be improved through a process known as "conversion rate optimization." Only by utilizing web analytics tools can websites improve their conversion optimization. Conversion rate optimization (CRO) aims to increase the number of times a website's visitors complete tasks assigned to them. The conversion rate is calculated by dividing the total count of objectives by the number of users. If you're running a company, you need to measure the metrics that are most important to your success (Kumar & Ogunmola, 2020).

Boost the Impact of Advertising on Social Media

With regard to online marketing, analytics play a crucial part in the process. We can see from the statistics how many people clicked on the web ads and made a purchase, and also how effectively the ads were received by the intended audience. Using data to identify the most common mistakes in social media advertising may greatly improve your results and increase the efficacy of your efforts (Lata & Gupta, 2020; Nanda and Kumar, 2021). Streamlining

data collecting will improve the efficiency of online marketing. Web analytics makes it feasible to use remarketing in advertisements.

Observe the Bounce Rate

An unsatisfied customer "bounces" after viewing a single page and not taking any further action. As a result, you can observe which webpages they accessed and when they were there through the use of time-stamped data. Increase conversions by making use of this technology and helping prospects move through the buying process before you ever speak to them personally. One of the most critical duties in marketing is driving the right traffic to a website; not only does it need to be done, but it has to be done correctly. It's easy to think that selecting your target demographic will be a piece of cake with so many marketing tools at your disposal. On the other hand, this isn't always true. It's not a good idea to try to fill every channel with as much material as it can handle. It's possible that the target audience will develop resistant to your communications if they've been introduced to the product, brand, or visual material too frequently in the past.

Marketing Campaigns May Be Tracked and Analyzed

For internet businesses, it is possible to measure marketing campaigns' efficacy in order to acquire insight into how users perceive the campaigns and whether or not the effort has been successful or unsuccessful. We can monitor each campaign's development and guarantee that if a promotion fails to meet expectations, it can be swiftly detected and terminated (Kumar & Saurabh, 2020).

Tracking of Competitors

Keeping tabs on the competitors is essential. Do you know how and where the traffic is coming from? You may want to think about rerouting this traffic to a different site. As an example, type in words like "e-business" into a search engine. Take notice of which competitors appear on the first page of search results and in sponsored links. Comparing the business website's ranking to

that of your competitors is typically a useful exercise because brands are more commonly seen when key phrases are searched (Sharma & Joshi, 2020).

Integration of Web Analytics with E-Commerce

Web analytics is increasingly becoming a part of the intelligence architecture of online marketers. Online marketing tactics are increasingly being built on the foundation of web analytics. These methods also help to improve the website itself in terms of performance. Web analytics, according to Gamalielsson et al. (2021) is recognized to supply several facts on which decisions are taken when it comes to online marketing tactics. Examples of such decisions include; When it comes to deciding what sort of online advertising to use (email, affiliate marketing, PPC, social media marketing, etc.), there are a few things to keep in mind. The use of web analytics in online retailing in e-commerce, web analytics can be used to a variety of various uses, including:

Forecasting Demand and Profitability

For every firm hoping to enhance revenue and profits, using web analytics to keep tabs on sales and boost productivity is essential. It is possible to evaluate patterns and linkages in sales data by using a Business Intelligence solution and to identify outliers via the use of visually pleasing and user-friendly dashboards. The following sales scenarios can benefit from the usage of these tools: Data siloes may be broken down with these analytics tools, which bring all of the data together in one place. What we call "Sales Analysis" refers to developing an all-encompassing picture of all transactions, including the method of purchase, payment data, demographic information, discount coupons/promotional offers used and returns enquiries and refund status (Li, 2021). The effectiveness and profitability of a marketing campaign may be determined by doing an Effectiveness and Profitability Analysis. Business intelligence dashboards allow merchants to dig into specific locations, categories and items to get an understanding of sales performance, map this performance to the relevant staff and identify profitable opportunities. They may utilize this information to improve the effectiveness of their sales staff as well as their business' overall profitability. Relationships between products can be found in Market Basket Analysis because they are complementary or have a tendency to be bought together in a single transaction. Store managers may use this information to create a unique line of products and test different

combinations of pricey (high margin) and less expensive (low margin) items to see which ones sell better. It is vital to identify cross-sell and up-sell chances when there are a large number of clients in the same family.

Heatmaps

These business intelligence solutions also include heatmaps, which are a vital component. With these maps, it's lot simpler to understand the data at a glance since they're more aesthetically attractive. There are darker places on these maps that reflect greater traffic, and lighter ones that show lesser traffic on a website or store layout. A decision-ability maker's to accurately forecast the behavior of their present clients was made feasible by the use of such technology. It's possible for an e-commerce player to see what his or her customers like and where they go after they leave. One company's or product's success may not be the same for another (Zumstein&Mohr, 2018). Businesses in the e-commerce industry can utilize this study's findings to establish an industry-standard approach (Lata & Kumar, 2021b). Using A/B testing, these professionals are able to determine which design and layout is more beneficial for users, as well as why this is happening (whether it's a technical issue or a design mistake).

To Drive the Promotion Plan, We Need to Identify Trends

It is critical for e-tailers to keep track on client trends. As a result, it needs a significant quantity of data analysis, making the use of robust e-business data analytics systems an absolute necessity. All of this is possible due to the fact that buyers leave information about their purchases at various stages during the sales process. Using a variety of touch points, marketers can build a more detailed picture of their clients and better understand what they want. Consumer Analytics helps merchants and e-commerce companies to give relevant offers to each customer at every stage of the buyer's journey. For example, retailers might use "What-if analysis for spending" and "Analysis of purchasing decisions" in today's highly competitive retail sector. Use a regression model to examine how store/platform sales correlate with a retail event.

Pricing Price Elasticity

This analysis may help merchants better understand the impact of a change in price per unit on sales of a certain item by identifying trends (price elasticity). The low-price elasticity items and the slow-selling, high-cost (impulse) purchases have a possible bundling possibility. All items, as well as all retail

and internet locations, will be priced using an insight-driven approach thanks to these solutions. With the use of "User Behaviour Analysis," online merchants may design customized marketing campaigns based on their customers' behavior (such as how many checkouts they make vs how many abandon their carts) (Önder & Berbekova, 2021). Retailers may benefit from Promotion Channel Analysis by better understanding the channels through which their marketing efforts are most successful. By prioritizing the most successful channels for advertising and promotion, the whole expenditure may be reduced, resulting in a higher investment return.

For Merchants, Analytical Services

The operations of the e-commerce business revolve around merchants. Service providers expand alongside the retailer's expansion. Therefore, E-Commerce players carry out extensive research on behalf of merchants to assist them in entering new markets or determining the proper pricing for their items. As an example, Amazon may recommend that a Cricket Bats seller stock up on Hockey sticks due to a rising demand in his area. This choice would have been far more expensive for the corporation to make if the vendor had not merged with E-Commerce players. For example, a DVD of a program was included in the delivery box of a MAC purchased for USD 1000.

Identification of Fraudulent Activities

Fraud is the term used to describe the type of activity that can directly affect the buyers and sellers (Lata & Kumar, 2022). No matter how innocent they may have been in the fraud, the E-Commerce corporation must bear the cost of it. However, merchants are rarely involved in frauds. Despite the fact that this is relatively rare, customers have filed bogus claims in scams. While these scams were first handled by hand, E-Commerce is moving toward the development of predictive algorithms to identify frauds and avoid them wherever feasible.

Personalisation

For e-commerce enterprises, one of the initial uses of big data is to provide personalized service or a customized product. A vast number of data is taken from many channels and utilized for real-time customization since customers like to buy from the same vendor over and over again, according to multiple studies. It is possible for organizations to offer personalized services, such as promotions and content tailored to a customer's needs, using real-time data analytics. Additionally, businesses may employ personalized services to

distinguish between new and returning clients in order to tailor promotions to the most appropriate (Kumar & Ayodeji, 2021).

Variable Costing

In a competitive market, customers are the most important asset. As a result, the only way to maintain a competitive advantage is to bring in new customers, which is why e-commerce businesses are so proactive in setting product prices. For example, Amazon.com has a system that collects data on the competition's prices and gives Amazon with feedback every 15 seconds; this practice resulted in a 35% increase in sales. The night before a sale, give internet buyers a really competitively priced goods. Customers' regional and geographic preferences, pricing mechanisms, and consumer actions are all taken into account by Amazon.com in its analysis of big data (Hassler, 2019).

Detection and Prevention of Financial Crimes

When it comes to detecting credit card fraud, identity theft, and product return theft, online retailers may use technologies like Hadoop to process the data on a collective scale. According to Hassler (2019) a combination of client transaction data, geo-spatial location, web logs, purchase history, social feed, etc. may be used to discover fraud in real time. Visa, for example, has implemented a data-enabled fraud control system that examines 500 distinct aspects of a transaction and claims to have avoided up to $2 billion in annual anticipated losses using this method.

Analytical Prediction

An event can be projected or predicted using predictive data (Big data) analysis as a way of predictive analytics. Predictive analytics can only be applied with solid data mining. Companies preparing revenue budgets benefit greatly from predictive analytics. Predicting future sales patterns is possible by looking at prior sales data, and online businesses may spot these trends by creating budgets. As a result of superior forecasting and inventory management, e-commerce enterprises are able to minimize product stock outs and lost consumers.

Promotions That Are More Relevant to the Right Customers

Different clients will use an online retail business in different ways. In order to deliver the right level of consumer engagement, companies may now use web analytics to include and track additional aspects (Ayodeji et al., 2020).

Various forms of interaction include asking for input, signing up for a newsletter, promoting a product, and taking a quiz. Data acquired from web analytics may be used for predictive analytics by comparing it to data gathered from other sources. As a result, internet businesses have learned how to target single customers or entire demographics (Millennials) with customized promotions.

Visibility of the Supply Chain

When things are shipped from an e-commerce provider, customers expect to be able to monitor their orders. In order to provide customers with an accurate delivery date, the online seller must have access to the product's specific location using data analytics. This is accomplished by combining data from various parties participating in the process (Ayodeji et al., 2020).

Innovations in New Products, Markets and Business Models

By utilizing web analytics, product managers may create a realistic market scenario and provide web analysts with the data they need to accurately anticipate a product's market share based on previous sales data. A product's most attractive features may be identified using this method (Jahan & Martin, 2019).

Web Analytics Metrics

With web analytics, users may be directed in the right direction. Make the required and major adjustments to the website to do this. Only if you know what the consumer wants can you make these changes possible. The best way to do this is to observe how users interact with the website, where they click around, and how much time they spend on various pages. With the help of web analytics, companies may focus more on their customers. Website optimization, page design inventiveness, and content updates may all benefit from web analytics and data management systems, as can the company's overall success. In a survey done by Forrester Research on behalf of Google, almost 70% of the firms surveyed recognize that Web Analytics plays a significant role in their organization (Jahan & Martin, 2019). Businesses must cultivate a data-driven culture that supports decision-making based on statistical and actionable data rather than human intuition in order to reap the full benefits of Web Analytics. To keep a website up-to-date, improve it, and

optimize it, one must have a thorough understanding of how people interact with it. Analytics systems gather, analyze and report online usage information so that they may highlight what components of a website are working effectively and can be exploited further, as well as what portions of the website need to be improved or removed. There may be too much information in unprocessed use data, such as server access logfiles and click-stream logs, for most applications (Kumar & Ayodeji, 2021).

Metrics are used by online analytics tools to define and manage web use information easily. Analytics KPIs are an excellent tool for determining whether or not website goals have been met when utilized in this way. Key performance indicators (KPIs) must be examined in the context of the website in question since business objectives range from one webstore to another, even from one page on the same website to another, and sometimes even from one paragraph on the same page. A high percentage of repeat visitors indicates that a website is both informative and visually appealing. When a website's bounce rate rises, it's a bad indicator since it indicates that more visitors are leaving the page without taking any action. Large numbers of page views imply high page popularity, while the reverse is also true. The longer a user spends on a given page, the more likely it is that the page is both interesting and useful. There may be something wrong with a high exit rate, which is the percentage of page views that are soon followed by a user's decision to leave the website (Li, 2021).

Measuring and Defining Results

Key performance indicators (KPIs) may be used to determine whether or not a website is on track to meet its goals, according to Li (2021). There should be a corresponding action for each KPI that is set up for a website. An important feature of a KPI is that it can be easily modified to fit the needs of the organization (Hasaninet al., 2021). Good metrics should have the following characteristics; Using the measure, people from all walks of life in a company and from all departments may quickly and easily come to their own conclusions. In order for a measurement to be relevant, it must properly portray the user's relevant outcome.

Accurate Metrics

Policymakers must be able to make informed decisions based on accurate data. If it takes up to a month to obtain information in an industry that changes on a

weekly basis, even the most brilliant measures are made worthless. To get the initial peek of insights as soon as a user looks at the key performance indicator (KPI), it is vital that the KPI's definition be clear. When it comes to web metrics, the most common features are tracking visitor activity and the elimination of search engine bots that search for content while indexing a site. Effective web metrics must, among other things, be based on generally recognized terminology, concepts, and best practices. Web Analytics integrates web analytics, making it useful for online enterprises. A few advantages include the ability to assess and enhance sales, the monitoring of the money generated by a website, the distinction of exit pages, the tracking of visitor traffic, and the discovery of defects in the website (Hasaninet al., 2021).

Measurements for Defining Visitors

A website's "visit metrics" relate to elements such as the "front page," the "landing page," and the "exit pages," in addition to metrics such as the "visit duration time on site," "referrer," and the "click-through rate" (Kirsh & Joy, 2020). This is the page where the visitors enter their information. The entrance page is the first page that visitors view when they arrive at a website or mobile site. Entry pages aren't usually used as the primary landing page. Analyzing the most popular landing pages may provide insight into how and why users arrive at the site in the first place, which can then be used to improve the site's overall usability and attract more visitors. Data from the entrance page may be very beneficial for assessing and optimizing SEO and SEM results. It is a single web page that appears once the user clicks on a search engine-optimized result or a marketing campaign, email, or online advertisement. It is common practice for a landing page to include tailored sales material that follows the advertisement, search result, or link that brought you there. Businesses utilize landing pages to generate leads. The conversion rate of an advertiser's campaign is determined by the actions that a visitor does on the landing page itself. Any microsite or independent page on a company's main site can be used to serve as a landing page.

- *Page of exit:* The number of times a visitor has left a website after seeing a certain page is referred to as the site's exit rate. The exit rate of a page tells you how many people have visited it before leaving it, and it is calculated as a percentage by dividing the number of exits by

the total number of visits for that page. A customer may come to the main page of the retailer's e-commerce site, browse the category list, then click through to a product page before leaving the site. That's a link to the product page's end. Keeping an eye on the sites people are leaving will help you figure out where you need to make changes.

- *The length of time spent by visitors*: Using this statistic, you can see how long visitors spend on a certain website. In order to arrive at this figure, all visitors to the website in question are averaged throughout the time between their first and last actions on the site. To gauge a website's quality, you may look at how long people spend on it on average. Users who stay on a website for extended periods of time may have done so because they value it as a great resource for learning and information (Kumar & Sharma, 2021). Alternatively, it might mean that they are having trouble finding what they are looking for or that the page loading times are taking a long time to complete. As with the bulk of web analytics metrics, the average visit time is a relative figure. When analyzing data, it's important to look at trends over time and the terms of a service or product when doing so (Kirsh & Joy, 2020).

Click-Through-Rate (CTR)

For the purposes of this definition, the click-through rate (CTR) refers to the percentage of website visitors who actually click on a link, as opposed to the total number of people who view a webpage, link, email, or advertising. With this strategy, it is easy to track the effectiveness of a website's online advertising and email marketing campaigns. Using this measure, you can see which websites are getting the most traffic and make comparisons between the traffic sources that each of those sites uses. A website's traffic sources can be identified by determining which sources bring in the most and least visits. It is possible to utilize this data to improve your SEO, SEM, and SMO efforts. Direct traffic refers to people who arrive to the site directly by entering the Web URL into their browsers or by viewing the site through an undefined method, according to Kirsh & Joy (2020). Social media users that followed connections from social media back to the website have done so in droves. It's called "referral traffic" since it comes from people who have already been to another website and clicked on a link thereon. For purposes of this definition, "Organic Search" refers to people who reach your site by typing in a search

engine's name and then clicking on the first result that appears. If someone visits your site after clicking on an ad or following a link with a specific tracking code, they are known as visitors from the campaign.

Identifying the Demographics of a Site's Visitors Metrics

Website visitors may be segmented using the metrics in this category, which indicate a variety of features that help separate them. Here are the metrics: total new visitors, total returning customers, total repeat customers, total new visits, total repeat visits, total new visits per user, and total new dollar value. The term "new visitors" refers to people who are visiting a website for the first time on a specific gadget. For a given reporting period, it is the total number of unique visitors that logged in for the first time and started a new session (Poulos et al., 2020). A "returning visitor" is a user who has made a conscious decision to return to a website after their initial encounter. The number of people who visited the website for the first time before the reporting period began is included in the overall number of unique visitors reported. The percentage of unique visitors that return to the site twice or more within a reporting period is known as repeat visitors. A visitor's initial visit to the site determines whether or not he or she is eligible for a promotion.

- *Visits per visitor*: The average number of visits made by a single unique visitor during the specified time period. In order to calculate this metric, you must divide the total number of visitors by the number of unique users (i.e., the number of visitors).
- "Recentness" refers to the time that has passed since a certain action was taken by a single visitor to a website. E-commerce enterprises typically utilize the number of days from the previous consumer purchase as a way of determining this. In the future, consumers who have recently purchased something are more likely than customers who have recently purchased something to make another purchase.
- In order to do a certain activity, such as viewing the site, making a purchase, or downloading anything from the site, a certain number of unique visitors must be recorded throughout a reporting period. The information gathered here might help you plan a marketing strategy that is tailored to the purchase habits of your target audience.

- *Money spent:* The total amount of money spent by a customer over the course of one period of time. When businesses learn how much money is made by repeat customers instead of new customers, they may better understand what they can do to make customers more satisfied so that they return for more (revenue attribution).

Participation of Visitors Metrics

A wide range of measures are available to gauge how involved visitors are in this particular region. To determine the bounce rate (the percentage of visitors that leave your site), the pages per visitor, and page departure ratio (page abandonment ratio), you use this method (Poulos et al., 2020). Those customers who left their carts unattended (abandonment Rate). After visiting a number of other pages on the same website, a certain percentage of visitors quit the site from a certain page. A webpage's Exit rate is divided by the total number of page views to arrive at this number. How many pages did each visitor view? This statistic measures how many pages a visitor looks at while on a certain website. Average page views per visit is calculated by dividing the total number of views by how many visitors are on the site. There are several metrics that can be used to determine how many customers leave a website once they arrive, but one of the most commonly used metrics is the "bounce rate." After only one query to the Analytics server, the user's session is considered to be a bounce. As an example, the bounce is computed if a visitor reads one page on the website and then exits without sending any other queries to the Analytics server during that session. Ecommerce shops can calculate the cart abandonment ratio by dividing the total number of completed orders by the total number of shopping carts created by customers. To get the percentage, take this number and multiply it by 100. This is a reflection of possible interest in the property that did not result in a sale.

Metrics for Conversion

Website activities that bring value to a company's bottom line, such as metrics that indicate the number of objectives accomplished (conversions), the ratio between the number of goals achieved and all other relevant metrics, among other things, are included in this category (conversion rate). As an example, one technique to gauge conversion rate is to look at the total number of visitors

to the website and then tally the number of conversions, or the number of goods added to the shopping cart, by each visitor to the website in turn (Kammar & Rafi, 2021). Conversion is a marketing term that refers to the act of an online visitor completing an aim or undertaking some other activity. The term "conversion" is frequently used in online shopping to describe the process that happens when a site visitor purchases something.

- *Conversion rate*: The percentage of site visitors who become paying customers is an important metric to monitor when it comes to e-commerce. An action that a website visitor performs after arriving at the site is called a conversion. An effective method for estimating the conversion rate is to multiply each individual conversion by how many different types of ad exposure led up to the final action.
- *Average Order Value*: This simply refers to the average dollar amount spent by a consumer while shopping online. Average Abandonment Order Value refers to the average value of a purchase that was either abandoned during the checkout process or while in a shopping cart, respectively. The AOV and AAOV must be tracked in order to encourage user interaction. Your goal is to understand more about what motivates clients to buy and what causes them to abandon their orders.
- *Cost Per Acquisition (CPA)* may be used to estimate the cost of acquiring a new client. Cost per Action (CPA) is a metric that measures the total cost of a customer's actions that result in a conversion. Cutting the CPA and raising ROI may be done in a matter of weeks.
- *CLV* is an estimate of the total revenue a client will create over the length of their business relationship with a firm. How much money a customer intends to spend on the items over the course of their lifetime is referred to as "lifetime value" (Kammar & Rafi, 2021). CLTV is a significant metric since it gives you the average value of each customer. CLTV can help you identify customers who are more valuable to your business in terms of dollars.
- A website's *customer retention rate* refers to the percentage of consumers who return to the site after completing a transaction. It is possible to acquire insight into the long-term health of e-commerce websites by tracking the retention ratio.

- A company's *key performance indicators (KPIs)* are statistics that clearly show how well a website performs and how well it improves over a specific time period. According to earlier statements, the company and its goals are the driving force behind the selection of metrics. The most often used KPIs may be categorized based on the business model in use, notwithstanding this (Ogunmola & Kumar, 2021).

Conclusion

Web analytics conventional metrics have been discussed in this chapter. This is a good introduction to the topic. In the field of web analytics, a set of tools and methodologies is used to make sense of log file data. They can reveal a wide range of information, such as, for example, how Internet users arrived at a certain website, which pages they saw, where they clicked, what they replied to, what information they provided, what transactions they made, and which Website they visited next. E- businesses may get valuable insight into their customers' online habits and preferences through the use of web analytics. These visual representations of data are provided through site overlays and geo-mapping. Web log analytics from a business and marketing viewpoint may help to reveal not just what information can be acquired about a certain website, but also how these insights can be leveraged to assist successful decision making. Web analytics may be used by businesses to improve the conversion of website traffic into sales and to increase their financial return from campaign expenditures when paired with other sorts of information. A portal may learn anything from what inspires consumers to buy to which customers are most likely to defect to what a customer's future behavior is predicted to rely on behavioral targeting.

There are still issues and challenges with the current tools and methodologies, even though Web analytics is going in this direction. Counting and identifying unique visitors might be difficult with some technology. Following reports based on erroneous traffic data may be extremely misleading. Cookies and page tagging are two methods for obtaining more precise information about how many people have visited a certain website. Existing measuring systems are challenged by technological advancements. Web 2.0 technologies push the boundaries of web performance and measurement to their farthest. To solve these issues, new measures and new

firms are being established. E- business decision makers must first have a clear grasp of the primary aim and goal of the website before using Web Analytics to measure its performance. It is therefore possible to pick Web analytics that can supply useful information. In other words, decision-makers cannot rely on any one method or solution to give all the information they require. Web analytics that employ a variety of tools to analyze website performance and improve continually with new technological developments will provide a comprehensive analysis to support successful decision-making in the e-business industry.

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Chapter 2

Social Media Analytics for E-Business: Where Are We Heading?

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Abstract

Social Media Analytics play a vital role in e-commerce for retrieving useful information of a product or service. A social media e-commerce strategy is helpful for any business in building brand awareness, communicating with customers and generating more sales for their online stores. The paper is exploratory research, which talks about how social media analytics can be useful in various online processes like Marketing, Finance and Operations for any online business. The objective of the paper is to identify and discuss various social media analytics tools which can be used for various business processes and how they can help in the growth of online business. Some of the tools which help in tracking customer, analysing reports, tracking performance and performing competitor analysis have been discussed. This paper would help in identifying how social media can be the future of any online business leading to its growth and success.

Keyword: e-commerce, social media analytics tools, finance and operations, online business

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Introduction

The style in which businesses are operating has changed across the world including India. The increased usage of Smartphones and number of internet users in urban and rural areas has contributed a lot in it (Lata & Kumar, 2021c). As per January 2020 data by Statista, 4.54 billion people of the world's population have been utilising the internet (Statista, 2020a). People all throughout the world utilise social media in some form or another. As per Statista, social media was used by 2.95 billion individuals in 2019. By 2023, it is expected that this number would rise to 3.43 billion (Statista, 2020b). According to the Indian Brand equity report, the Indian e-commerce market is anticipated to grow from 120 billion US dollars in 2020 to 200 billion US dollars in 2026 (Ibef, 2020). The foundation also predicted that the country's digital transformation will continue with 6,36,73 million internet users in 2019 rising to 829 million by 2021. Due to its multiple benefits, the importance of social media in enhancing business both internationally and locally cannot be underrated. Most of the brands are also influenced by the wave of social media marketing (Bhardwaj & Kumar, 2022a). As per the report by Buffer in (2019), 73% of marketers believed that their social media marketing efforts were either very successful or somewhat successful (Buffer, 2019). As per a survey conducted by SproutSocial, 72% of executives agreed that social media data is now the top data source which is used for informed decisions rather than market research. Further as per the same report, 85% of executives agreed that social media data would be a primary source of business intelligence[1]. Businesses of all kind are finally starting to see social media differently, as a full-blown business function rather than a marketing tool. In the next several years, companies will rely more heavily on social data than ever before to inform strategies and business decisions beyond marketing (Kumar & Nanda, 2022). As per social media statistics, 93% of business marketers with social media sites reported that their social media efforts had increased traffic to their websites and 82% of them said that their social media efforts had increased sales[2].

With the popularity of social media platforms, e-commerce has become all the more effective due to the usage of these. The information which is shared by businesses on social media platforms can be seen by more and more people as huge number of people can surf through that information. Businesses

[1] https://sproutsocial.com/insights/importance-of-social-media-marketing-in-business/.
[2] https://blog.hunchads.com/the-impacts-of-social-media-on-business-in-2021/.

can leverage their company data to comprehend and gain meaningful insights from social media platforms, and then turn that information into usable information or intelligence for strategic decision-making (Kumar et al., 2022). Several businesses have realised that social media may increase their visibility and influence their decision-making process (Kumar and Nanda, 2019). In comparison to traditional media, social media allows customers and brands to engage and exchange information via the internet (Lata & Kumar, 2021a). Recently, businesses have grown by using electronic media for their marketing activities leading to the growth of electronic marketing in a very outstanding and vigorous way. This new form of marketing that businesses are using to function with the new tools like electronic media, digital technology and internet to achieve their business goals is electronic marketing (Lata, and Gupta, 2020). Most of the marketing initiatives rely on providing attention-catching content that users share with their social networks (Kusumawati et al., 2021). A business message spreads from one user to the next, most often through social media platforms (Kumar &Ayodeji, 2021). Fortunately, a majority of individuals nowadays have access to the internet, and some of them use it for business operations. As a global media, the Internet is swiftly gaining attraction as the most innovative marketing instrument. The worldwide methods of communication and purchasing have been thoroughly redefined with the use of social media, since it is now the ideal medium for online retail establishments (Salehi, 2012). For both businesses and people, e-commerce offers a variety of benefits. In addition to marketing, e-commerce can also save operating and inventory expenses while speeding up orders, deliveries, and payments for goods and services. The financial processes of businesses can also utilize social media analytics for risk management and fraud detection in the case of credit cards and other banking processes. Hence, social media analytics and Ecommerce can be closely associated for tracking and streamlining various business processes.

Social Media Analytics and E-Business

The lifestyle of people has changed dramatically due to usage of smartphones, internet, social media platforms, cloud computing and many other advanced technologies. Their buying and consumption patterns have shifted since the advent of e-commerce. The entire transactions beginning from selection and buying to payments can be performed online now. Every year, the number of registered e-commerce businesses have been growing tremendously. As a

result of this, many businesses have adopted an online sales approach. For example, Gome Electrical Appliances and Internet-related businesses have teamed up to develop "Gome Online," a new online sales platform (Xia and Lv, 2021). It was presented by Clement (2020a), that global e-retail revenue grew from US$1,115.7 billion in 2016 to $3.5 trillion in 2019. The author emphasized that the ubiquitous usage of the Internet and the increasing popularity of mobile devices have not only expanded the number of internet users (Lata & Kumar, 2021c), but have also established alternate trading channels across industries, which is not limited to grocery, clothes, and books. Clement (2020b) was also of the opinion that apparel is one of the most popular online categories in the world, earning 57% of all internet users. New social media platforms have arisen, which are rising in popularity, attracting new followers and presenting new opportunities for social media marketing. The value of social media analytics has increased significantly for many brands and organisations throughout the world as social media platforms have grown in popularity (Lata, and Gupta, 2020). Even though different social media platforms allow brands to engage with individuals in different ways, social media marketers need to learn more to adapt to social media platforms and usage of social media analytics tools in order to reach consumers effectively. Additionally, in order to produce customer leads and boost consumer interaction, new marketing techniques may be acquired by managers. These new marketing techniques involve usage of social media analytics tools for tracking reports about customer sentiments etc. This helps businesses in making informed decisions pertaining to revenue, increasing sales, and tracking various processes pertaining to supply chain in a business.

Social media analytics use tools for gathering data from various interactions on social media platforms and converting it into valuable information. This could also lead to more information-driven business decisions and stronger business customer perceptions. An increasing demand exists for centralised platforms to analyse and use obtained data in the present business environment, supporting decision-makers to make unambiguous decisions in less time. According to Lata and Gupta, (2020) goal of an organization for using social media must be well defined beforehand. Social media analytics are commonly used by businesses to learn more about their clients. Extracting, analysing and reporting are some of the tasks carried out by social media analytics tools. A significant association between the assessments of managers and users may be built by extracting crucial information from opinions, attitudes, trends, and issues associated with the users. Promotion, after-sales service, reputation management, risk handling,

supply chain tracking, sales, and decision making are among the most popular uses of social media analytics, which are based on various practices. There is a vast array of tools that provide social media analysis to meet various levels of corporate requirements. The entire working of these tools for analysis involves data selection, pre-processing, modification, as well as data mining and hidden pattern assessment (Nanda and Kumar, 2022). Thus, businesses can use social media and social media analytics tools in various functions of any business. Some of the important functions can be marketing, finance and operations.

Marketing

Businesses can benefit from social media marketing as it lowers costs, raises brand awareness, and increases revenue. People are spending more time online looking for information, communicating with businesses, and discussing products and services with others. As a result of the usage of the internet and social media platforms, consumer behaviour and business practises have transformed. As a result of the shift in client behaviour, businesses have made social media a critical and fundamental part of their marketing campaigns (Stephen, 2016). According to Ajina (2019), organisations can fulfil their marketing objectives at a cheap cost by using digital and social media marketing. More than 50 million businesses have Facebook profiles, and over 88 percent of firms utilise Twitter for marketing (Lister, 2017). Making social media marketing a major element of a company's overall strategy can save a lot of time and money (Shareef et al., 2019a; Shareef et al., 2019b; Yang et al., 2017). Companies can utilise social media to interact with customers, raise brand awareness, influence consumer attitudes, collect feedback, improve current products and services, and lift sales (Lal et al., 2020; Lata and Gupta, 2020). Additionally, data acquired from the digital world can aid in the tracking of a company's performance (Kannan, 2017). Sales in social commerce are considerably boosted by consumer-generated social referrals around bargains (Kim and Kim, 2018). Because of the widespread breakdown of traditional communication channels and societal reliance on brick-and-mortar operations, businesses must seek out best practises in digital and social media marketing to maintain and expand market share (Naylor et al., 2012). Companies may use social media data to optimise digital marketing tactics and forecast customer response to marketing because of the massive amount of data available (Alshura et al., 2018). The data gathered is regarded to be useful

in calculating client acquisition and retention costs, as well as analysing and optimising various online marketing initiatives (Kannan, 2017). Gandomi and Haider (2015) compared digital strategy to a road. The author claimed that a strategy is a means of achieving a goal or reaching a destination. Planning simply organises and streamlines the execution of a strategy. Therefore, strategic utilization of social media analytics yields a positive impact on marketing activities, customer engagement, risk analysis and assessment product or service design, credit rating of customer profile, customer education and competitive analysis.

Finance

Social media technologies not only provide a new platform for entrepreneurs to innovate, but they also open up a plethora of new avenues for e-commerce experts to explore (Kumar &Ayodeji, 2022). Financial institutions are not native to the digital landscape and have had to undergo a long process of conversion due to technological change. In the past few years, usage of social media analytics in finance has led to significant technological innovations that have enabled convenient, personalized, and secure solutions for the industry. Some of the ways in which the financial processes make use of social media analytics include real-time stock market insights, fraud detection and prevention in credit card information. Additionally, accurate risk analysis can also be performed. Financial businesses may now use social media analytics data to generate new revenue streams through data-driven offerings, provide personalised suggestions to clients, increase efficiency to gain competitive advantages, and improve security and customer service. One of the latest concepts of crowdfunding has grown in popularity as a new form of financing in the web 2.0 era. The use of a variety of media for project presentation, along with high frequency of project updates, help to boost donations (Beier and Wagner, 2015). Globally, banks have begun to use advanced prescriptive and predictive analytics in order to get insights, manage high compliance and non-compliance costs such as financial and reputational risks, and have a substantial impact on business operations (Manzira and Bankole, 2018). They are part of those businesses trying to interact with customers through this new digital channel which comprises several models of social banking, including transactional social media banking. Customers are now using cell phone banking, internet banking, and social media banking to execute their transactions. Social media generates a wealth of customer data including

behavioural data which can be utilised by banks to develop a deep understanding of their customer wants or needs and hence products can be customised and enhanced to deliver the best results.

Operations

Social media may help businesses improve their supply chains in a variety of ways. People in the supply chain can benefit from social media because it has become one of the most powerful and simple tools to develop relationships. Social Media Analytics (SMA) can help supply chain managers integrate suppliers and customers. Inventory data may be tracked in real time and used to manage operations. Floor managers can manage their floors using real-time data on who is absent. Information related to various supply chain events can be captured via social media analytics. It enables supply chain players to track supply chain events and transactions in real time to keep everyone informed about current happenings, such as a delivery delay or a carrier failure to pick up a product. Businesses can utilise social media analytics to see how others view their services as well as track vendor and supplier difficulties. If shipments are late or bills are not paid on time, tracking can be done. A connected supply chain on social media, for example, might let everyone know about delays or if a package hasn't been picked up in real time. Pickups and deliveries from the warehouse could be tracked in real time, as well as any delays caused by accidents or other circumstances. If something happens along the supply chain that will have an impact, a brief tweet or post could be considered as a good gesture to alert everyone else so they can start making the required modifications to react. The social media platform can be utilised for new product development (NPD) in the context of OSCM (Irani et al., 2017), as well as to convey information like aid distribution and evacuation routes in the event of disaster relief organisations (Yan and Martinez, 2019). Service enhancement (Fan and Niu, 2016), daily sales projections (Cui et al., 2018), and information diffusion (Fan and Niu, 2016) are some more examples (Kanagarajoo et al., 2019).

Prominent SMA Tools

When it comes to promoting e-commerce businesses and converting visitors, social media is a great success. They can assist a business in achieving a range

of goals related to the nature of online sales, depending on the strategy and aims of the company. Social media analytics are interpretations of quantifiable data or metrics that can tell us information about activities, events or conversations. They provide insights into human behaviour on social media platforms. Several businesses have developed tools for tracking a range of social media platforms, from blogging to internet video to internet forums. They are tools that facilitate an integrated study of organisation's strategic decisions and objectives, their measurement and performance measures at an operational level. These tools also analyse various social media metrics that can be tied to performance measures. As per different functions of business requirement, there is a huge collection of tools available that offer social media analytics. These tools work on a logic designed for analysis, which involves selection of data, pre-processing of data, and transformation of data, data mining and evaluation of hidden patterns (Kumar and Nanda, 2021). Important tools which can be used for analysis of various processes include the following:

Brand24[3]

The process of monitoring online conversations that mention a company is known as social listening. Brand24 is a powerful tool that collects mentions from social media and other sources and analyses volume, mood, and quality. Listening in to the conversations about a brand gives them valuable input that would otherwise be tough to receive. Existing and future customers are likely to discuss a variety of aspects of a brand online, including the quality of a product and customer service, their thoughts on advertising, and their overall attitude toward a company. Taking advantage of these discussions can assist firms in identifying their strengths and areas for improvement. It also allows them to participate in these debates, bringing a company closer to its target audience. With the volume charts and influence score provided to each mention, one may better comprehend the share of voice. Businesses can use Brand24 to set up notifications for bad mentions and handle sensitive conversations in real-time. Some useful features of this tool include:

- Mentions and analytics
- Discussion chart
- Influence score
- Sentiment analysis

[3] https://brand24.com/.

- Customizable alerts

Facebook[4] Ads Manager

Ads Manager is a Facebook tool for creating and managing ads on Facebook, Instagram, and Messenger. Facebook Ads analytics can have a positive impact on a company's bottom line. It's advertising solutions include complex targeting techniques which when combined with the company's large user base, allow advertisers to target ads to audiences that closely resemble target clients. The built-in analytical features in Ads Manager can summarise results at the account level or by specific campaigns, ad sets, or ads. Data can be divided up further based on audience characteristics, the devices used to see the advertising, the time, and other factors. Access to such specific data on ad performance opens up a world of possibilities for optimising targeting and expenditures. As a result, the return on investment (ROI) of Facebook advertising is improved. The most useful features of this tool include:

- Creating ads
- Targeting
- Budgeting
- Performance tracking

Analytic Edge[5]

This product has been named as one of the Top 10 Marketing Attribution Solution Providers for the year 2021. They offer technology-enabled marketing and sales effectiveness analytics. To produce fast, cost-effective, and actionable business insights, the tool combines technology, industry knowledge, and cutting-edge statistical methodologies. Their Demand Drivers product is a ROI measurement tool that helps businesses get over these barriers. It is a cloud-based, AI-driven automated platform that enables organisations to perform predictive marketing analytics in-house at the scale, cost, and speed they require. The following are some of the software's primary features:

- Pricing and promotional plan
- Revenue growth management
- Customer insights

[4] https//www.facebook.com/.
[5] https://www.analytic-edge.com/.

- Range optimization

Supermetrics[6]

Thissoftware gathers all of a company's marketing data and sends it to its preferred reporting analytics, or storage platform, whether it's a business intelligence tool, a spreadsheet, a data visualisation tool, a data lake, or a data warehouse. It enables marketers to get all of the necessary KPIs and dimensions from marketing platforms. Supermetrics is the most straightforward method of transferring marketing data to any location. This app includes high-quality features as well. It generates a variety of cross-channel data, as well as online analytics and social media platforms, to aid in performance analysis. The following are some of most important features of this tool.

- Create interactive cross-channel reports
- Extract cross-channel marketing data
- Performance marketing
- SEO
- Web analytics
- Social media analytics

NapoleonCat[7]

NapoleonCat is a comprehensive suite of social media management tools that includes in-depth analytics, superior customer service solutions, publishing, and reporting capabilities. It combines data from many accounts across multiple platforms to create crucial information about performance. Comprehensive cross-platform statistics are among the features, which allow one to examine success at a glance. Analyses for certain channels can be viewed and they can be narrowed down further by measure. Summary, Followers, Engagement, Reach, Content, Hashtags, and Stories are just a few of the elements included in Instagram analytics. Further, it can also be used for analysing competitors by knowing where they stand versus their competitors, regardless of the size or scope of their e-commerce site. It is an important part of analysing their success. The outcomes of a custom group of profiles can then be visualised in a single graph by combining data from various accounts in comparative sets. The users can include their own profiles

[6] https://supermetrics.com/.
[7] https://www.napoleoncat.com/.

in the mix for a quick and easy comparison to the competitors. Most useful features of this tool include

- Competitive analysis features
- Integrated Social Inbox for managing engagements across social media platforms.
- Automated reporting.
- Content scheduling and publishing functionalities.

TapInfluence[8]

TapInfluence is a social media influencer network that links marketers with social media influencers. The platform offers comprehensive analytics tools as well as solutions for streamlining campaign execution and reporting. TapInfluence and other similar tools can assist businesses in identifying the best influencers for their company's profile and goals. Over 50,000 opt-in influencers, as well as thorough audience intelligence and influencer performance data, are available through the platform. The platform also delivers real-time automated data on the performance of sponsored content and the ROI of campaigns throughout activations. The major useful features offered by this are:

- Influencer discovery.
- Campaign execution including scheduling, tracking, content approval, and more.
- Benchmarking and ROI insights.

Snaplytics[9]

Snaplytics is a social media management solution for Snapchat and Instagram Stories users. It includes content creation and distribution capabilities, as well as sophisticated analytics. Material on the platform is spontaneous, casual, and quickly expiring, resulting in high engagement. Businesses can fine-tune (e.g., Instagram Stories) efforts using tools like Snaplytics by identifying top-performing content and examining audience statistics, which includes a full assessment of follower acquisition strategies. This tool has the following useful features:

[8] https://www.tapinfluence.com/.
[9] https://snaplytics.readme.io/.

- Content creation, scheduling, and management.
- Automatic collection and simplified sharing of user-generated content.
- Desktop chat
- Automated analytics

SproutSocial[10]

Sprout Social is a social media management and analytics solution that helps companies and agencies of all sizes manage conversations and uncover actionable insights that lead to actual business impact. It is a set of deep listening and analytics, social management, customer service, and advocacy tools that help businesses of all sizes be more transparent, honest, and empathic on social media, and develop the kind of genuine relationship with their consumers that propels their businesses ahead. More than 25,000 brands and agencies across the world use SproutSocial for social media listening and analytics, social management, customer service, and advocacy. Sprout's single platform combines social's power into every element of an organisation, allowing social leaders at all levels to extract important insights. The important features include:

- Access to social data and analytics
- Engagement
- Publishing and Scheduling of Posts
- Listening to group discussions.
- Improve marketing performance

HubSpot[11]

It is a marketing software that enables a company to increase traffic, increase conversions, and manage entire inbound marketing campaigns at scale. Sales CRM software can assist in gaining a deeper understanding of prospects, automating chores, and closing more sales more quickly. Customer service software may help you engage with consumers, surpass their expectations, and turn them into brand advocates who can help you develop your business. The following are a few of the most important characteristics:

[10] https://sproutsocial.com/.
[11] https://www.hubspot.com/.

- Lead generation
- Marketing automation
- Analytics
- Advanced CRM
- Scheduling of Meetings
- Payments

BuzzSumo[12]

BuzzSumo is a cloud-based platform that allows users to find the finest engagement, content, and outreach opportunities in social search. One of the most successful content analysis tools on the market is BuzzSumo. It aids in the discovery of new keywords, popular stories, consumer questions, and content success, all while keeping track of what matters most to your company. This application crawls the web and social media feeds continuously to offer you the most popular material in any area. The world's largest index of social engagement data is available for browsing. It is also useful to filter by content type to evaluate which formats appeal to the target demographics. It also reveals the most popular articles from the competition. In addition, by scanning the previous 5 years of content performance data, one can compare trends. BuzzSumo keeps track of competitors, brand mentions, and industry news. It can track brand mentions. Some of its important features include:

- Customer engagement
- Dashboard impact
- Scoring influencer
- Tracking reputation
- Management trend tracking
- Audience segmentation
- Competitive analysis
- Configurable alerts

Keyhole[13]

This tool automatically tracks all the accounts and compares social media performance with the competitors. Keyhole's social listening and influencer

[12] https://buzzsumo.com/.
[13] https://keyhole.co/.

management platform helps marketers measure the full impact of their social media campaigns. This tool's social listening, influencer tracking, and social media analytics features assist marketers in enhancing their social media strategy and demonstrating their impact to colleagues and clients. It also properly measures real-time and historical social media data, presenting data in easy-to-understand graphs and layouts that make reporting. Some of the main features of Keyhole include:

- Influencer tracking and analytics
- Profile and competitor analysis
- Hashtag tracking and analytics
- Social publishing

Brandwatch[14]

This is a self-serving software that stores social media data to provide information and means for businesses to monitor different segments in order to evaluate the online presence of their brands. Users can scan data, and use charts, categorisation, analysis of sentiments and other features to provide additional details and analysis. It is a powerful and responsive social media listening and analytics platform. It gives an instant access to conversations from any part of web. Some of the features include:

- Crisis management
- Market research
- Analyse market online
- Benchmark performance with competitor analysis

Intellestra[15]

Intellestra from Voxware enables distribution executives and managers to anticipate future supply chain requirements. Warehouse managers and supervisors can utilise this platform to get a real-time aggregation view of all data across the supply chain. Intellestra's powerful algorithms collect and analyse data to present current and historical activities, forecast future events, and generate prescriptive analysis for informed decisions. The key features of this tool include:

[14] https://www.brandwatch.com/.
[15] https://www.voxware.com/.

- Real-time insights for quick action
- Graphical and intuitive reporting
- Multiple perspectives for a single solution
- Simple data extraction from any source
- Customization of business system by users.

KPMGSpectrum[16]

KPMG Spectrum is an intelligence engine designed to resolve complicated situations that individuals alone cannot solve. Organizations can use their third-party intelligence product to uncover supply-chain vulnerabilities and take action before disruptions arise. With KPMG Spectrum Third Party Intelligence, businesses can quickly identify threats and take corrective action. Some of the tool's most important features include:

- Action-oriented user interface
- It collects financial data from suppliers in order to identify hazards in the nations where they operate and forecast specific weaknesses.
- Visualize vulnerabilities in real time and in the future
- Based on the aggregate expertise and experience of thousands of KPMG experts to provide an additional layer of intelligence

PeopleSoft[17]

PeopleSoft Supply Chain Analytics provides enterprises with the real-time data they need to manage day-to-day operations. PeopleSoft Supply Chain Analytics assists in tracking profitable items, investigating production problems, identifying product quality issues, and measuring operational performance to keep costs low and improve customer happiness. The main features include:

- Clarify capacity, materials, and customer demand mismatches via the manufacturing process.
- To determine how successfully suppliers adapt and respond to a request for a change or an order.
- Determine whether product quality has an adverse effect on the final product or service delivered.

[16] https://www.kpmg.us/.
[17] https://www.oracle.com/in/applications/peoplesoft/.

- Figure out which channels work best for which product promotions.
- Identify the most responsive warehouses and freight carriers

InforBirst[18]

A world leader in enterprise business information and analytics. Birst's supply chain analytics tool allows you to manage every step of the supply chain from a single location. Infor specialises in cloud-based business applications for businesses. Initially, the company concentrated on financial systems and enterprise resource planning (ERP) software, as well as supply chain and customer relationship management. Infor began focusing on software for industrial niches and user-friendly software design in 2010. Infor uses Amazon Web Services, Azure, and a variety of open source software platforms to deploy its cloud applications. Birst allows companies to interact across the supply chain and receive real-time visibility. The following are some of the software's primary features:

- Collaborate with internal business processes, as well as customers and suppliers from outside the company.
- Make real-time adjustments to supply and demand.
- Forecast demand for a variety of product lines as well as globally.
- Align demand planning with production and make adjustments based on material availability.

HaloBI[19]

Business intelligence software empowers and liberates business managers and executives at all levels of an organisation to ask and answer their own questions based on a clear view of current operational data (Lata & Kumar, 2021b). With the Halo tools, reporting and analytics are a breeze. Halo BI offers enterprise-scaled, quickly installed, and data-secured analytics for supply chain planning and data discovery. Supply chain leaders and managers can analyse, decide, and plan faster than ever before using Halo. The following are some of its important characteristics:

- In a single system, automates data integration, visualisation, and analytics.

[18] https://www.infor.com/.
[19] https://halobi.com/.

- Business intelligence: visualisation, reporting, and analytics, data warehouse automation, and self-service data analysis.
- Regulatory industries and advanced modelling: advisory analytics

Due to some global situations, like the recent outbreak of COVID-19 pandemic, there have been wide changes in the eCommerce industry. Following lockdown instructions, everyone, including students, employees, and company owners, became more exposed to social media as the coronavirus pandemic spread throughout the world (Lata and Gupta, 2021). While online shopping and selling have grown in popularity, social media platforms such as Facebook, Instagram, and Twitter have also entered the social commerce arena. It was reported that eCommerce transactions were $82.5 billion in 2020, up 77% from 2019[20]. Social media appears to be the future of eCommerce in light of this. Because social media is used by more than half of the world's population, many eCommerce businesses have begun to use it to engage current and new customers. The future of social commerce appears to be bright, due to the combined power of social media and eCommerce (Chen et al., 2014). Some of the ways by which this can be carried out is Chatbots, Influencer marketing and video and live streaming through YouTube etc. (Culnan, 2010).

Conclusion

Every social media strategy should be built on the foundation of data. Being able to track the progress in real time is especially critical in conversion-focused industries like e-commerce. In E-commerce, shopping behaviour is also important. To meet customer expectations, businesses must incorporate new technologies. E-commerce will rise dramatically in the next ten years as a result of technological advancements and the benefits outlined. Because of the foreign direct investment scheme, big firms are investing millions of dollars in India. The E-commerce market would be directly affected by the rise of the education sector. By 2025, internet availability in rural areas will have increased, implying that everyone in the rural area would use the e-commerce market. Considering digital marketing is evolving, Ecommerce businesses will spend less money on marketing in the future and deliver more discounts to customers. Because of the fast pace of life and technological

[20] https://www.pinnaclecart.com/blog/will-social-media-become-the-future-of-e-commerce/.

advancements, physical establishments will adopt online business models in the next ten years, and people will shop for everything on the Internet.

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Chapter 3

Artificial Intelligence and E-Business

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Abstract

The world is now shifting to electronic side of things with augmentation through Artificial intelligence. There is a tremendous growth of e-business and technology has played a vital role in this upliftment. Use of Artificial Intelligence and E-Business has many advantages like tracking the marketing efforts with precise accuracy using sophisticated tools like 'Google Analytics.' This chapter highlights the importance of AI for the e-business and the significant role which AI plays in the whole customer life cycle with customer acquisition, enhancement and retention. For customer acquisition there are AI based applications like Google Analytics which offer search through natural languages ad advertisements for relevant material. They are also used to show offer of various products on Amazon and Flipcart. AI applications are also used for enhancing the experience of the customer through chatbots which are offering online 24 x 7 supports. There are particular applications like OnChat from HDFC bank which suggests sale through automatic cashback on cards, automatic integration of the coupons and discount vouchers. Also, AI is running the customer loyalty and retention programmes. The chapter also defines various opportunities and challenges for AI in e-Business.

Keywords: artificial intelligence (AI), customer life-cycle, Google analytics, e-business

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Introduction

The world has seen an exponential growth in the internet and mobile phone users during last decade (Mittal & Kumar, 2020). As per Statista, the number of smart phone users worldwide has surpassed six billion in 2021 and is forecast to further grow by another hundred million in next few years[1]. This has opened a wide range of communication tools for individuals and organizations. At present, the communication through online platforms has become a key element of integrated marketing and the way organizations communicate with their customers (Kumar & Saurabh, 2020). As per United Nations Conference on Trade and Development (UNCTAD) global e-business has jumped to @26.7 trillion as COVID-19 pandemic has boosted online sales (Lim & Kim, 2021). This rise in online retail sales is mainly due to the restrictions imposed by governments throughout world for containing spread of COVID-19 (Kumar & Gupta, 2021). The world is now shifting to electronic side of things with augmentation through Artificial intelligence (Weyerer & Langer, 2020). All the organizations have recognized the need and importance of artificial intelligence and e-business which have enhanced their scope (Gkikas & Theodoridis, 2019).

Figure 1. Role of electronic channels in success of an organization.

[1] https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/.

Affordability is one of the benefits to organizations due to the use of electronic channels as marketing digitally costs very less than traditional marketing (Nuseira & Aljumahb, 2020). Organizations are having an option to invest as per their financial plans and get the desired results. This mostly helps small businesses to grow and improve their reach to people without spending much on their budgets (Kumar & Vidhyalakshmi, 2012). Another important aspect of using electronic channels for success of organizations is the ease of monitoring the response, reactions and results. The use of electronic channels like emails, instant messaging, websites, blogs, text messaging, voice mail and video messaging plays an important role in success of an organization as shown in Figure 1.

All these help organizations in saving the cost and time for conducting customer satisfaction research (Chung et al., 2020). The response provided to organizations through electronic channels is in real time and data which helps them to quickly adapt to changing customer behaviours and taking future course of actions (Kusumawaty et al., 2021). Also, with increasing reach of electronic contents among people, it has become essential for organizations to have a strong presence in electronic media (Kumar & Pradhan, 20215). With a strong electronic media, organizations can take their products and services to wider range of customers easily (Grabara, 2021). Many research studies (Agus et al., 2021; Sakas & Giannakopolos; 2021) have suggested that organizations using electronic channels for marketing have a higher conversion rates as compared to organizations using other mediums. Electronic channels can be used in a very efficient way to create new customers or converting non-buyers or prospective buyers into actual customers (Kumar & Pradhan, 2016). This is possible because electronic channels provide customization options to the organizations. Such customizations can be based on customer preferences, partialities and requirements in order to attract more customers (Van & Stewart, 2021). Use of electronic channels by organizations allows them to solve customer grievances, queries and suggestions in a fast and more efficient manner. This helps organizations to ensure that customers are satisfied with their products and other aspects as well. All these aspects help organizations in building brand loyalty by retaining existing customers and avoiding risks of losing customers (Kumar & Pradhan, 2018). Also, there are government initiatives to empower use of electronic channels by organizations like ‘Digital India’ campaign. This campaign was launched by Government of India to empower its citizens technological accessibility to high speed internet and availability of government services around the clock (Biswas, 2021; Lata & Kumar,

2021b). The Digital India campaign was launched by Prime Minister of India Mr. Narendra Modi on 1stJuly, 2015. It has three main components development of secure and stable digital infrastructure, delivering government services digitally and universal digital literacy (Kumar & Ayodeji, 2021). Also, there are nine 'Pillars of the Digital India' specifically targeting broadband highway, universal access to mobile connectivity, public internet access programs, e-governance, e-kranti, information for all, electronics manufacturing, IT for jobs and early harvest program (Azad & Singh, 2021; Lata & Kumar, 2021a). The campaign received huge appreciations from citizens and leaders from the country and worldwide. Such examples can be seen when Mark Zuckerberg, CEO of Facebook, changed his profile picture to support the Digital India campaign and promised to support WiFi hotspots in rural areas in India. Some latest technologies which support e-Business are mentioned in Table 1.

Artificial Intelligence in E-Business offers personalized and interactive purchasing experience (Hassaan et al., 2021). With AI-based systems organizations can view their customer's preferences in real-time and provide them with specialized and reliable shopping experiences. Artificial Intelligence even plays an important role to improve the marketing standards. Al integration even helps retailers to identify patterns and datasets to create unique experience to their customers (Zhang et al., 2021). AI even plays a significant role in the whole customer life cycle (Kumar & Pradhan, 2018) which is having three phases of customer acquisition, customer enhancement and customer retention as shown in Figure 2.

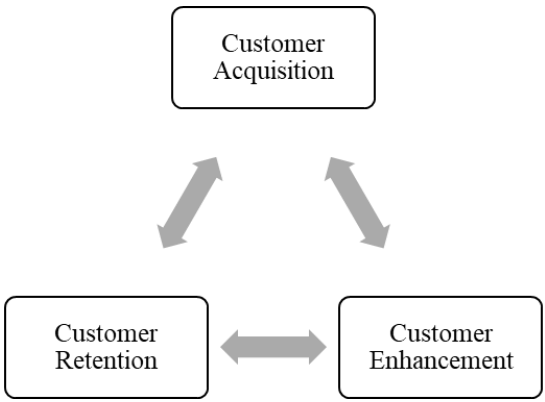

Figure 2. Customer life cycle.

Table 1. Some latest technologies which supports E-Business

S. No.	Technology	Use in E-Business
1	Affiliate Marketing	Affiliate marketing is a type of marketing where organizations promote others products or services to customers if they like them. For every sale of the product promoted by organization a promotion is received. There are three parties involved in this type of affiliate marketing like advertisers, publishers and consumers. Example of such marketing is Amazon which acts as a host sit and sells other companies products (Mittal & Kumar, 2022).
2	Content Marketing	Content marketing is posting blog posts on social media, storytelling to gather attention, bringing curiosity of customers and their interest. This is the reason that few things pick up well in market as the content is well picked and chosen to market as well. This is a long term strategy that focuses on long-term relationships by providing relevant and good quality contents. The model of content marketing is mapping to pain point, mapping appropriate content and mapping to buy cycle (Mittal & Kumar, 2020).
3	Digital Marketing Strategy	Digital marketing strategy is a series of actions that help an organization to grow using online marketing. Steps to build a comprehensive digital marketing strategy for an organization includes building buyers person as identify goals; identify digital marketing tools which would be required, evaluating existing digital marketing channels and assets. Audit and plan own media, audit and plan earned media, audit and plan paid media and bring it all together (Kumar & Saurabh, 2020; Olson et al., 2021).
4	Display Advertising	This is a type of advertising that comes in form of banner ads, rich media and more. Such ads use image, audio, video and cookies to track their customers. Using all these they release whether buyers have bought products and services or have just surfed the website. The different ways to measure display advertising are reach, click through rate, bounce rate, conversion rate and return on investment (Ayodeji & Kumar, 2019).
5	E-mail Marketing	E-mail marketing is one of the initial ways to do promotion of products on the internet. Organizations collect email ids of customers to update them with a new catalogue of products and services. It is done by either sending out emails or making them aware or by personally sending a customized email. Sending an email is just like invited by someone to their house (Taherinia et al., 2021).

Table 1. (Continued)

S. No.	Technology	Use in E-Business
6	Marketing Analytics	Mobile marketing is a kind of marketing advertisements needs to appeal to mobile device users. Such marketing provides potential customers using a smartphone at their convenient time, comfortable location and choices. Different strategies to mobile marketing include App-based marketing, In-game marketing, QR codes, Location-based marketing, Mobile search ads, Mobile image ads, Consider your audience, Optimize for local and Benchmark your results (Nanda & Kumar, 2022)
7	Online Reputation Management	It is the process of controlling what the user looks at when they are online. This also includes negative feedbacks, risky comments or anything that brings bad name to the organization. Online reputation management helps to search about the product or service of a particular organization and helps users to take decisions based on what they see online. Having good contents help most of the people with updated knowledge where everything is protected and recorded online (Pradhan & Kumar, 2016).
8	Search Engine Marketing	This is a type of marketing, where organizations pay for the advertisements that appear on search engine results. The key words on the site are set for biding on services like Google or Bing which gives advisor an opportunity to showcase their advertisements for such query. Such ads are known as pay-per-click ads which are small, text based ads and visual graphics (Kumar et al., 2022)
9	Search Engine Optimization	The first place to search for anything and gather information is a search engine. Search Engine Optimization (SEO) is the process of maximizing the number of visitors to the website. This is done by ensuring that the website is seen at the top in the list by the search engine. There are two types of SEO, On-site and Off-site which are important in today's competitive market (Bhardwaj & Kumar, 2022b).
10	Social Media Marketing	Like, share, follow, subscribe or repost are some of the common words used in social media to gain more attraction. All these pop-up in social media marketing when working on websites like Facebook, Instagram, Twitter, Linkedin, YouTube etc. The main task of social media marketing is to create awareness and gain audience, obtain brand awareness, a voice in the market and visibility (Nanda & Kumar, 2021).
11	Website Development	This is one of the crucial aspects of e-Business. Now days when a new business is set up, website of the organization is the most inquired step which shows the range of products and services which are offered. Website planning includes a process of steps like information gathering, planning, design, development, testing, delivery and maintenance (Kumar & Ayodeji, 2020).

This customer life cycle is traditionally being used to map the different stages a customer goes through from considering a product, service or solution to the actual purchase. Also importance is given to post purchase stages of customer enhancement and customer retention. This life cycle is important in different business functions including marketing, management and optimization of the customer experience. Artificial Intelligence is very helpful in this customer life cycle through its capabilities of product searching, personalized product recommendation, dynamic pricing, fraud risk management and warehouse automation. The product searching may be the most important feature as it allows customers to find products that match their interests from keywords. This is done by a combination of Natural Language Processing (NLP) and computer vision to enhance search by keywords and images. The ranking algorithm on e-Business platforms also uses reinforcement learning technologies to deliver better search results. Apart from providing best outcome during a product search, the e-Business also makes use of Artificial Techniques to engage customers. The AI models can analyse a specific customer's browsing history and shopping trends, based on which product recommendations which best fit the requirements are recommended. Many e-Business platforms like Amazon uses dynamic pricing tools for product sales (Kumar et al, 2020). Powered by AI algorithms dynamic pricing adjusts product prices in real time based on factors inventory, supply and demand projections. The same tools can be used to predict the future prices as well. AI technologies can be used to identify potential fraudulent credit card transactions. Not only these prevent and control risks in real time but also ensures secure online transactions. Artificial Intelligence use in e-Business has extended beyond websites into the warehouses. The AI-robots working around the clock are also increasingly replacing traditional forklifts and managers.

AI Application for Customer Acquisition

Consumer acquisition means the way organization is acquiring traffic to their website (Gkikas & Theodoridis, 2019). There could be many ways through which the traffic is coming to the website of any organization like direct by using domain name, through organic search, through social media or through referral. To know the exact proposition of traffic coming to website out of different sources Google Analytics provides the information. The Google Analytics Intelligence is a machine learning tool used by Google to help users

understanding the analytics of data. It includes Artificial Intelligence (AI) based features which help organizations to find the insights from data without digging into the data (McCloskey et al., 2021). The Google Analytics tracks the information collected from website or mobile app and presents it in a very structured for to the admin or users. It helps in understanding the audience insight and organizations can track the Return on Investment (ROI) of marketing efforts (Ayodeji & Kumar, 2020). The four phases of Google Analytics are collection, configuration, processing and reporting as shown in Figure 3.

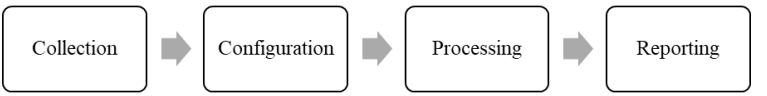

Figure 3. Google analytics architecture.

In the collection phase, Google Analytics collect raw data from various sources, such as a website, mobile app or any other device connected to internet with the help of a tracking code (Kumar & Ayodeji, 2022). A tracking code is a unique code, generated by Google Analytics that is embedded in organization's website. Once this tracking code is embedded in the organization's website, Google Analytics starts collecting the information sing different algorithms. Google Analytics uses various parameters like browser settings, cookies, browser behaviour etc. to collect the information (Troisi et al., 2020). The configuration phase allows organizations to customize the data they are willing to collect and set up rules for processing it further. This phase is important as Google Analytics collects a lot of information from the websites in a huge amount. All the information may not be relevant to marketers and other users. So, in this phase Google Analytics filters information and keeps only the relevant information for further processing (Feldman et al., 2021). In the third phase of processing, the information is filtered in the back end and Google Analytics organizes this information into various meaning full segments and categories. There are a number of categories in which the information is categories. The processing phase turns all the collected data into reports that organizations can interpret and monitor (Rathore et al., 2021). In the last phase of reporting, after the organization of information Google Analytics presents this information to the users in a very understandable and meaningful way. Through Google Analytics interface organizations have access to all the processed information and manage it. The

various reports can be easily browsed and downloaded to further analyse the data and make decisions (Iadanza et al., 2021).

One of the examples where AI is used for customer acquisition is by Amazon (Kumar et al., 2020). In Amazon AI algorithms are used from the point when customer searches a particular product to the time it reaches doorstep of the customer (Saghir et al., 2021). The AI algorithms are used in Amazon to recommend products to customers, forecast future demands from customers, improve the quality of product catalogue, classifying products, correcting misspelt queries and eliminating duplicating products. Apart from Amazon, in retail market Flipcart is also extensively using AI for customer acquisition. Flipcart is employing AI technologies for developing products of better quality, providing enhanced user experience, inventive logistics, targeting the precise demographics and becoming the preferred option for their customers. Flipcart is also using AI for extracting insights from customer's behaviour and their reviews, frauds in transactions, processing of text, speech and image, forecasting and address understanding (Dadhich & Thankachan, 2021).

AI Applications for Customer Enhancement

There are many applications of Artificial Intelligence applications which are improving the customer enhancement (Koo et al., 2021). Some of these include creation of hyper-relevant digital ads, power personalized search, helping customers to find best prices, provide immediate answer to questions, anticipate and prevent issues, empower 24/7 support across every channel and eliminate the hassle of returns. Artificial Intelligence is improving customer enhancement through understanding customer intentions, improving agent's their experience and strengthening customer experience (Tang et al., 2021). Agents are the human being answering customer queries. AI applications help to enhance customer experience by creating super-relevant digital advertisements of the products. AI helps customers to do a power personalized search, helps customers to find best price of the products, provides immediate answers to customer queries, also helps to anticipate and prevent problems even before the customers get information regarding them. AI provides customers with 24 × 7 support across all channels and eliminates the hassle of returns (Zdravkovic et al., 2021). AI is enabling organizations to be future ready platforms which are enabled with Natural Language Processing (NLP)

for conducting sentiment analysis on textual data and assist agents to prioritize the customer queries as shown in Figure 4.

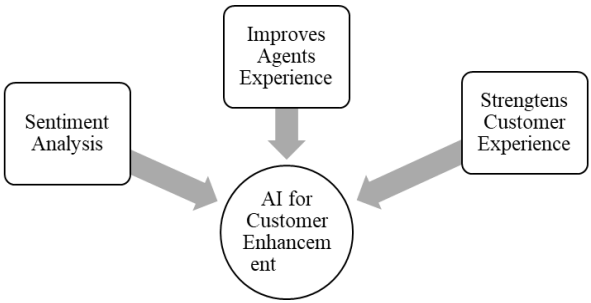

Figure 4. AI for customer enhancement.

Sentiment analysis is important to understand a customer's state of mind. AI platforms of an organization reviews chat transcripts and highlight those instances when a customer felt infuriate or is not happy. AI helps to pinpoint customer's individual expectations, behaviour, situation and prepares customer centre executive to handle through intelligent conduct. Also extra care can be taken up to improve customer's experience (Karimi et al., 2021). Agents being human being are sometimes prone to ignore high stake queries and escalations due to high volumes of work pressure. This is no longer an issue as AI platforms themselves identifies customer sentiments and notifies agent or their head supervisor to prioritize the customer query. By such tasks agent's experience is improved and customers are more satisfied (Borsci et al., 2021). Timely and quick resolution of customer queries impacts customer's experience in an optimistic way. The AI platforms facilitate customer service teams to organize and prioritize customer's sentiments. It empowers agents to take data analytics and data analysis based decisions. The agents get to know the customer's state of mind while resolving their issues and are able to deliver customer enhancements to a greater level (Kushwaha et al., 2021).

Also, there are AI based Chatbots for every business function and especially for customer enhancements. Chatbots are artificial intelligence powered programs that help in customer enhancements by taking care of their requirements. Such chatbots provide human-like conversations for higher insights on customer behaviours and their experience (Hwang & Chang, 2021). These chatbots are secured and scalable for different types of business requirements. They are having intuitive designs that are designs easy to use with assurance to perform all their functions. Most of the chatbots are also

equipped with AI based tools to improve their performance. Also, they are scalable through which organizations can increase the number of chatbots, add more functionality to existing ones and can even increase their scope of work. There are numerous benefits of chatbots to organizations in offering online 24 x 7 support as mentioned in Table 2.

In a specific example of HDFC credit card there is an automated integration of offers like suggesting specific products for available cashback on card, automatic integration of coupons and discount vouchers (Jaiwant, 2022). HDFC Bank is also making use of its chatbot call OnChat which works on Facebook Messenger to help all sorts of payment related queries. OnChat helps to make payment process simpler and guides customer to the best offers and steps to avail them. The bank also supports interactive voice response for interaction with customers. This voice response system also calls the customer for verifying any large or unusual transactions made on credit or debit cards. The HDFC bank OnChat also allows customer to perform basic transactions like support to apply for selected loan, insurance and credit card from its messenger platform. Such a chatbot is redefining customer experience by making it simpler for banks to understand their customers and providing simpler options for customers to sort their requirements (Popelo et al., 2021).

Table 2. Use of chatbots in customer enhancement

S. No.	Functional Controls	User Benefits
1	IT service management are improved as chatbots increase efficiency and reduce costs.	Management uses chatbots to get quick reports and even unstructured data.
2	Human Resource processes and communications are automated which reduces time sped in responding to queries.	Productive time of employees is saved by use of chatbots in repetitive tasks and they can focus on constructive tasks.
3	Sales operations are improved as chatbots help to transform more prospects into customers.	Customers are ensured with hassle free important information and support by use of chatbots.
4	Marketing through personalized interests improve customer experiences by driving conversions.	Chatbots also provide access to information about clients, their requests and the demands.
5	Finance and accounting teams become more productive by use of chatbots as they take complicated processes.	Service requests related data is accessed, tracked and any pending requests are checked by chatbots.

AI Application for Customer Retention

Artificial Intelligence (AI) applications for customer retention include customer engagement, loyalty program design, personalization, reward management, reporting and analytics (Apell & Eriksson, 2021). AI is very important in customer retention as it provides predictive analytics to keep customers well informed by using big data to predict future results and events. It also helps in recommending personalized recommendations which are important for customer loyalty. This can be seen from Netflix to Amazon and many big brands to improve customer experiences. Organizations are also implementing AI for better product innovations for better understanding their customers. Artificial Intelligence application for the customer retention in different organizations is shown in Figure 5.

Customer engagement means to capture data every time customers engage with organization to build a profile that can be used to personalize interactions and offerings. This includes building aomni channel customer loyalty with physical or digital touch points which a customer chose to interact with the organization. This includes capturing customer data across all channels and se of the data to deepen connections with customers. It also includes interactions with customers beyond transactions and adding gamification. This is done to understand their engagement and motivation for purchases (Hollebeek et al., 2021). The loyalty program design includes devise and retention of strategies around organization's unique objectives and loyal customers. Organizations may include members from households to loyalty points. This will build robust program by allowing members to pool points from their family and friends. There is also a requirement of widgets to launch loyalty programs and scale them as per requirements by including point balances, surveys, social connections and more (Rahmawati & Sentana, 2021).

Personalization involves drive for customer retention by use of data to improve segments, personalize loyalty campaigns, marketing, rewards to different offers and benefits that promote continues engagements (Kankanhalli et al., 2021). This involves rewarding the best customers with maximize benefits and meaningful offers that suits their interests and tier. This requires creating unique audience and connection with them through rewards based on member behaviour, data, tier stats and many more areas. Reward management involves motivating customers with various rewards and benefits to drive continuous purchase and engagements.

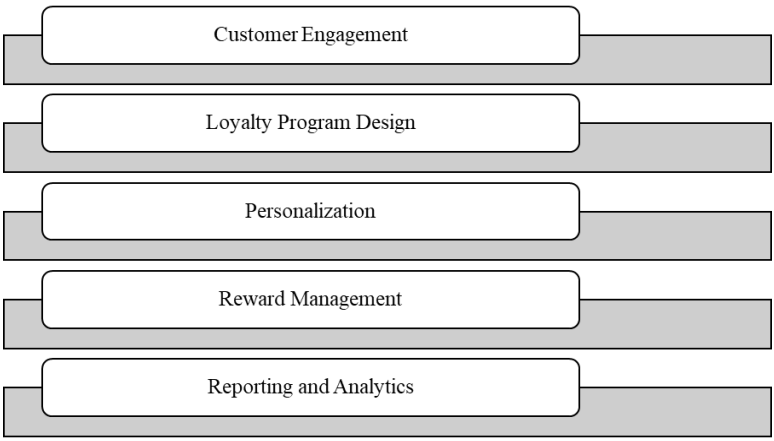

Figure 5. AI for customer retention.

Organizations should provide flexibility in design and implementation of most effective reward strategy for their customers. A stronger connection with customers can be established by offering rewards which they value; including gifts, sweepstakes and digital downloads. Regarding reward redemption customer should be allowed to choose from organization's product catalogue, applying discounts in POS checkouts, automatically distributing rewards or specific status (Schuler et al., 2021). Reporting and Analytics is an important part for use of AI in customer retention which involves evaluation of loyalty points and engagement behaviour of customers through analytics tools. AI tools allow organizations to define their brand, industry or program specific customized reports. Also allow access programs, member insights through business intelligence, reporting tools and use of that data to focus on future marketing efforts. AI also allows creating custom dashboards that include loyalty program indicators, easy visuals to analyse and different reporting categories. Also there can be setup for automatic data exports that send loyalty points to defined locations (Hayes et al., 2021).

Opportunities and Challenges

AI plays an important role in customer life cycle across most organizations. AI is seen to assist as a risk analysis in banking sector as it has potential to work as customer centric service operations like Know Your Customer (KYC) and Customer Lifecycle management (Zhao et al., 2021). AI is also seen as a

disruptive technology by different organizations as it is widely used in risks-related tasks and prevention of financial crimes. AI can be used to speed up the market for service and products intelligently. This is done by automating the execution of business rules and processes to complete on-boarding.AI helps to identify and route work automatically which adds speed and accuracy. In areas which require human review or judgements, AI helps to find and route work to correct persons (Madaio et al., 2020). The different opportunities and challenges associated with AI in e-Business are mentioned in Table 3.

Table 3. Opportunities and challenges

S. No.	Opportunities	Challenges
1	AI can be used to create customer centric search which enables organizations to build smarter apps with a vision to see the world 'like you do.'	Identifying valid tool cases which can focus on customer experience, product recommendations, sentiment analysis and computer vision.
2	AI can be used by organizations to retarget the potential customers with techniques like facial recognition, digging deep in retail data, reading the minds and responding directly.	Getting data in order as success of AI depends on the ability to draw insights from big data which depends on use cases and algorithm complexity.
3	AI can be used to identify exceptional target prospects to solve business challenges like lead generation with the use of timely intelligence.	Building an appropriate AI department which requires a team of engineers, data scientists and business analytics to work on associated intelligence projects.
4	AI can be used to create more efficient sales process with learning from natural languages, voice inputs, influenced by digital media to social media (Lata & Gupta, 2020).	Setting up culture and risk management as AI is a growing technology with evolving algorithms setting risks for security, privacy and reduced revenue (Lata & Kumar, 2022).
5	AI can be used to create new levels of personalization which can penetrate to the fast growing e-Business world with mobile applications, websites and email operations.	Automated workflows with the use of AI involve computers to perform tasks with multiple unknowns as demand fluctuations, anticipatory purchases and customer's activities.

Conclusion

Artificial Intelligence is the most important e-business adoption parameter with adoption costs and competitive pressure do not play an important role. AI offers customers of e-Business organizations with personalized and interactive experiences. Also organizations are given a preference to view their customer's real-time interest in products uniquely suited which help them to provide reliable and focused experiences. This chapter makes an effort in order to point out areas where AI harvest its potential benefits for an organization. The chapter highlights the importance of AI in all the phases of customer life cycle i.e., customer acquisition, customer enhancement and customer retention. The role of AI based applications like Google Analytics for collection, configuration, processing and reporting in customer acquisition is mentioned. Role of chatbots in customer enhancement is also mentioned with example of OnChat from HDFC bank. The OnChat allows customer to perform basic transactions like support to apply for selected loan, insurance and credit card from its messenger platform. AI is also supporting organizations in customer retention through customer engagement, loyalty point designs, personalization, reward management, reporting and analytics. Use of AI in e-Business can help organizations to increase their sales, improve customer experience, detect frauds, automate work flow and provide predictive analysis. Different opportunities and challenges associated with the adoption of artificial intelligence in e-Business are also mentioned in this chapter.

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Chapter 4

Machine Learning Applications in E-Commerce

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Abstract

With the growth of internet usage, social networking among consumers and their rated products form a complex network. A huge amount of data is generated for various products as a result of user's interactions on social sites, forum and blogs. Organizations deploy Machine Learning (ML) techniques (supervised or unsupervised) to analyze customer attitude that may be presents in comments, review (e.g., Amazon, Flipkart) or posts (e.g., Facebook or Twitter). Machine learning techniques can automate a number of mundane tasks like risk mitigation and improve the organization operational efficiency though quick analysis of big data in real-time. This chapter explores a comprehensive review of Machine learning methods being deployed on e-commerce websites, which correlates the impact of Machine learning on organizations profits, on the consumer sentiments and on product recommendations based on consumer-product interactions. There are number of ways and opportunity for the industry to adopt Machine learning application in the e-commerce. Companies can mine data from customer actions, transactions, and social sentiment to identify customers who are likely to leave. As a result, businesses can use machine learning to create useful customer profiles, increase sales and improve brand loyalty. This chapter discusses the advantages of machine learning and

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its role in e-commerce. The applications for machine learning for the analysis of customer interactions have been presented along with specific examples.

Keywords: machine learning, artificial intelligence, business intelligence, e-commerce, sentiment analysis

Introduction

Electronic trade, some of the time known as E-Commerce, incorporates a wide scope of online merchandise and administration related exercises. Web based business service alludes to an E- commerce website that offers items or administration to clients in a straightforward manner from advanced shopping basket to computerized shopping container framework. Customers today do not want to be treated as a number (Pradhan & Kumar, 2016). They prefer highly personalized customer service (Rajasekar et al., 2016). Personalization like this is what keeps customers coming back to your brand. If you can't deliver, they'll find someone who can (Kumar & Ayodeji, 2021). Machine learning algorithms have the potential to produce more intelligent search results. They can comprehend what is typed into the search bar using natural language processing. They'll then apply what they've learned from previous searches to show the searcher exactly what they're looking for. Even if they don't type the name of a specific product or an accurate description, they are still successful. Machine learning-powered product recommendations are also more intelligent. Visitors to an e-commerce site can be analyzed using algorithms (Xu et al., 2021; Sarwar et al., 2000). Knowledge of artificial intelligence (AI), particularly machine learning (ML), is required to intelligently analyze these data and develop the corresponding smart and automated decisions (The App Solutions, 2021; Lata & Kumar, 2022b). There are several types of machine learning algorithms in the field, including supervised, unsupervised, semi-supervised, and reinforcement teaching (Sarker, 2021). E-commerce has been around since the mid-1990s and for more than 25 years. It is not an exaggeration to say that the way we do business around the world has radically changed during this period. Even the world's most disorganized industries are moving toward digitalization and online commerce (Lata & Kumar, 2022a). Is it safe to say that e-commerce has reached a tipping point? Many businesses around the world have adapted to machine learning and artificial intelligence, putting them one step ahead of e-

commerce. There are now machine learning applications for almost every aspect of e-commerce operations. Ecommerce machine learning truly delivers on everything from inventory management to customer experience. Let's take a closer look at how machine learning can help your organization (Omnisend, 2022; Xu et al., 2021; Sarwar et al., 2000; Liu et al., 2020; Linnworks, 2022; Lata & Kumar, 2021c).

- *Product Recommendation* - Machine learning algorithms have the potential to produce more intelligent search results. They can comprehend what is typed into the search bar using natural language processing. They'll then apply what they've learned from previous searches to show the searcher exactly what they're looking for. Even if they don't type the name of a specific product or an accurate description, they are still successful. When a person returns, they are presented with items that are similar to those in which they have previously expressed interest. From millions of data records, a recommendation engine learns and analyses patterns from previous user behavior (Kusumawati et al., 2021). The recommendation engine can then predict how a new user will navigate the website, what they might be interested in, and how people with similar profiles have behaved in the past. When a user completes a successful purchase, the engine determines whether or not the recommendations were successful in order to improve the algorithm. That's why, when you visit Amazon, you'll see a slew of items related to those you've recently purchased or looked at.
- *Efficiencies in Operations* - Not every user who visits your website will end up purchasing something. Some may be looking for product information only, while others may add something to the cart but then abandon it (Kumar et al., 2020). Machine learning analyses the behavior and outcomes of millions of profiles to predict what will most likely work when attempting to convert a customer. Using dynamic retargeting, up selling, and discounts, machine learning can help more people complete their purchases. Machine learning enables e-commerce owners to better retarget users by analyzing data to determine what has previously worked to convert similar profiles through retargeting.
- *Chatbots* - By understanding structured data, chatbots powered by machine learning can have more "human" conversations with users.

Chatbots can be programmed to respond to customer queries using machine learning. The more people with whom the bot interacts, the better it will understand an e-commerce site and its products/services. Chatbots can do so much more as more complex learning is applied, such as identifying potential upsell opportunities, delivering customized coupons by asking questions, and addressing the customer's long-term needs.

- *Inventory management* - Sellers may oversell, shipments may take too long to arrive, or forecasting may be incorrect. This has an impact on the standard e-commerce motto of delivering the right products in the right place at the right time. Inventory management can be time-consuming (especially for e-commerce sellers) if done manually, affecting accurate sales forecasting and, as a result, cash flow problems. Machine learning can greatly improve the accuracy of forecasting future demand. Not only will this facilitate supply chain management, but it will also ensure that you have a better understanding of your customers and their behaviors. As an example, consider stock management and inventory accounting. Many businesses struggle with the age-old FIFO vs LIFO dilemma. Analyzing customer data is the best way to determine which method is best for you. Machine learning speeds up and improves the accuracy of such an analysis. A program can calculate e-commerce sales, warehousing costs, tax implications, and other factors. It can also aid in forecasting future demand. As a result, you have all of the information you need to implement the most efficient processes possible.
- *Trend Analysis* - Before listing products for sale on an e-commerce site, you must analyze their trend; is it a best-selling product, a regular seller, or is it out of date? Trend analysis has an impact on procurement, whether it is from an external vendor or internally fulfilled. If trends are not properly analyzed, returned goods will play a significant role in procurement. As a result, analyzing a product's trend is critical because it can reduce the overall size of the catalogue, product maintenance costs, and improve warehouse space utilization. This is simple to accomplish using machine learning, which analyses and compares product reviews, ratings, and social media inputs (Lata & Kumar, 2021a). Low-rated products may be removed from the website.

It is now time for businesses to implement these technologies in order to improve profitability and product/service quality (Lata & Kumar, 2021a). Shopping online after a pandemic is a once-in-a-lifetime experience (Kumar & Gupta, 2021). Many online retailers have created and integrated AI systems. Machine learning can improve security by assisting in the detection of fraud (Bhardwaj & Kumar, 2022). Again, a massive amount of data and dedicated algorithms are involved. They detect fraud in actual customer transactions and alert the customer service department or the appropriate department. There is so much data to adjust that you might be able to find a bad transaction. This includes looking for unidentified devices, payment gateways, order anomalies, and other issues.AI is having a significant impact on the e-commerce industry. According to the data, e-commerce is one of the top industries when it comes to AI investment. Customers can now enjoy a faster, more seamless, convenient, and personalized shopping experience than ever before thanks to AI. Traders must learn to work with robots rather than fear them. Of course, technology is not the only factor influencing e-commerce retailers. You don't have to be an AI expert to participate. Conversions and sales are critical for any organization. Let's take a look at how AI and machine learning will impact the future of e-commerce. This was causing issues a few years ago. Who was on hand to respond to customer inquiries as soon as possible? Will you be the one who crawls out of bed at 3 a.m., stomps his toes on the desk, and winks angrily while attempting to answer a customer? In 2018, AI is now available in the form of chat bots, which provide better customer service (Adam et al., 2021). When shopping online, customers have higher expectations of how they will be treated. Treating all customers equally is insufficient. Everyone desires a customized experience. In short, everyone wants results that are tailored to their specific requirements. This type of personalization is what keeps your customers coming back to your brand. If you are unable to provide it, a competitor will. Make use of artificial intelligence to provide your customers with the best shopping experience possible. Chat bots and augmented reality are two ways AI can help improve the customer experience on e-commerce sites. The chatbots is arguably the most approachable form of artificial intelligence. They respond to their customers immediately and use machine learning to learn more about each of them so that they can provide a satisfying personalized response that brings them closer to conversions. Chatbots assist you in gathering data, tracking behavior, and providing a seamless shopping experience. Chatbots can bring the value and personality of the company and act as an extension of the brand. This allows the "robot" to properly connect with the customer. There will be no more delays or

impersonal connections. Rather, more conversions.AI can increase brand loyalty by learning more about customers than you could ever imagine (Kumar & Pradhan, 2016). Machine learning can be used to process and analyze customer data in order to make better merchandising and marketing decisions. Finally, AI assesses individual customer bases and behaviors in order to accurately predict what they want. We can conduct in-depth travel analysis to uncover opportunities we didn't even know existed and to provide a highly personalized experience.

Let's start with the most basic e-commerce use case: online ordering. Involving chatbots in this process is a wise decision. If a user is unsure or just looking around, assistance from such an assistant can be extremely beneficial. A chatbot will present them with offers that best suit their tastes based on a few questions or a fun quiz. What if the items your customers ordered do not live up to their expectations? A well-optimized order return procedure saves a significant amount of time. And user need not wait long for a consultant on the hotline. Let's move on to the next step in the customer journey. Customers have already returned the order, but the funds have not yet been credited to their accounts. They could look in the FAQ, but the site is so complex that it will take them a while to find it (which, unfortunately, may be reflected in the customer reviews they'll leave you later). How can you make your customers' lives easier, increase their satisfaction, and reduce the possibility of negative feedback? Chatbots with good design can improve the customer experience. Platforms with the best user experience and ease of interaction are frequently the most popular. *Argomall, Lego, Decen Muebles Infantiles, Hello Fresh, and Bot Burger*are just a few examples of most successful e-commerce chatbots across various industries (Wongtanasophon, 2019[1]).

Technology makes it possible to deliver goods to customers on time. Because every mile and minute counts in supply chain delivery, automated technology has sped up traditional warehousing procedures. The machine has been given the information on the clients, drivers, and vehicles, and it will utilize algorithms to create the most efficient routes and make timely deliveries. Due to real-time photographs of available items in the inventory, inventory management has grown more complicated. It provides various innovative solutions to inventory managers and allows them to handle the process more efficiently with the help of AI. AI aids e-commerce in the following ways (Vanneschi et al., 2018; Zhang et al., 2021; Sharma, 2020):

[1] https://www.theceo.in/review/5-successful-e-commerce-chatbots-to-in-action/.

- *Automation* - Artificial intelligence (AI) can play a significant role in assisting you in automating the repetitive tasks that keep your online store running. Product recommendations, loyalty discounts, low-level support, and other tasks can be automated using AI.
- *Inventory Management* - AI-enabled supply chain enables how to maintain stocks based on:
  - Sales patterns over the previous years.
  - Changes in product demand that are forecasted or expected.
  - Inventory levels may be impacted by supply-related issues.

Aside from inventory management, AI is enabling warehouse management with:

- *AI Chatbots* - To provide the best possible solution, chatbots understand dialect and languages, as well as a user's past behaviour and customer chat statistics. Popular eCommerce sites like Amazon and eBay have implemented AI chatbot applications to provide users with a more convenient order placement and customer service experience.
- *Email Marketing* - AI-powered email marketing that sends email messages for products that the recipient is interested in (Kumar & Saurabh, 2020). Aside from reading more humanly than automated, these email marketing tools conduct intelligent user analysis based on their responses and are more tailored to individual customer needs.
- *Automate Pricing Management* - Automated AI pricing solutions in e-Commerce can help reduce the amount of manual work involved in tracking your competitors' prices. Businesses can then use data from both internal and external sources to determine product prices. *Price2Spy, Prisync, Amazon Repricer by Repricer Express, Competera* etc. are some automated pricing tools.

AI and e-commerce are a marriage made in heaven, and AI in e-commerce offers a slew of benefits in developing a strong business eco-system, and it will be the only way for e-commerce businesses to thrive, expand, and stay competitive (Gupta, 2021). The Artificial Intelligence (AI) market in India is expected to reach $7.8 billion by 2025, with a CAGR (compound annual growth rate) of 20.2 percent (WION, 2021). The Banking Financial Services and Insurance (BFSI) (Walia, 2021; Li et al., 2019) area's commitment to the

AI business has remained generally consistent since the execution of AI administrations in 2020 to guarantee contactless installments and virtual financial administrations.AI as a function has infiltrated practically all industries and functions – from e-commerce to BFSI, and from Manufacturing to Agriculture – Data Science and Deep Learning are increasingly being used to tackle challenging business challenges. AI is becoming more widely used in a variety of B2C, B2B, and even C2C (Consumer-to-Consumer) channels (Yadav et al., 2021). Internet shopping has detonated in prevalence lately because of the accommodation of purchasing things from anyplace, whenever, and contrasting elements of items and different purchasers and their audits. Feeling examination is the method that is involved with surveying unequivocal client criticism for any item. They now have more things for sale thanks to the rise of the e-commerce industry. Customers are also asked to put down their experiences with the things they purchased in the form of a product review on e-commerce websites. Numerous cutting-edge innovations, as profound learning, text handling, AI, and normal language handling (NLP), are presently being utilized to robotize feeling message investigation (Raibagi, 2021; Lata & Kumar, 2021b).

The most troublesome part of internet business request satisfaction is frequently accomplishing the ideal last-mile request conveyance. Successful last-mile activities the board can bring about tremendous expense investment funds and further developed consumer loyalty. Because of an absence of client accessibility data, conveyance specialists' timetables are presently intended for the most reduced visit distance. Accordingly, orders are not conveyed during the occasions determined by the client, causing missed conveyance. Missed conveyances are badly arranged on the grounds that they bring about expanded charges. With regards to business-to-client retailing, there are different issues with last-mile conveyance of merchandise. Actual conveyance is, truly, the most dirty and wasteful part of coordinated operations. The presence of fruitless conveyances is one of the issues with actual conveyance of merchandise. They pay extra expenses in bundles dealing with fuel, and contamination since bombed request conveyances are reattempted. Fruitful conveyances, then again, support consumer loyalty and diminish the probability of item returns. Accordingly, expanding effective conveyances is very attractive for strategy administrators and stage proprietors to further develop conveyance productivity and consumer loyalty. A dynamic system in the figure below (Adam et al., 2021) that expects to build conveyance achievement rates while bringing down costs (Adam et al., 2021).

Customers can impart their viewpoints and mentalities about items through web-based remarks. Online remark mining can help organizations in further developing their items and web-based business stages in further developing their advertising strategies (Kumar & Pradhan, 2018). Item mining on internet business stages is a significant instrument for item improvement and showcasing drives. Remark content, remark star, and remark date are the three critical parts of the online business stage's remarks. The client figures out which remark star to utilize, and it addresses the purchaser's general disposition. There might be sure examples where the data is inaccurate. At the point when a client is unsatisfied with one region, like coordinated operations, however happy with different viewpoints, the client gives one star, which signifies "extremely disappointed." The exactness of the investigation endures because of this condition such as it focuses on classifying the comments into positive class, neutral class, negative class according to the polarity of sentiment (Zhang, 2020).

Machine Learning Algorithm Used in E-Commerce

Machine learning is a subset of the broader field of artificial intelligence. It entails the development of algorithms or programmes that can access and learn from data. All without the need for a human to programme it. Pattern recognition is the primary method by which those algorithms 'learn.' You train a machine learning algorithm by feeding it as much data as you can. It then analyses the data to discover the trends contained within. The algorithm eventually becomes 'intelligent' enough to apply what it has learned to new data sets. Algorithms for machine learning are typically classified into one of three categories (Zhang et al., 2021; Wilson, 2019; Osiński and Budek, 2018; Verma and Diamantidis, 2021; Mishra, 2017):

- *Supervised learning* - Supervised learning teaches models to produce the desired output using a training set. This training dataset contains both correct and incorrect outputs, allowing the model to improve over time. The loss function is used to measure the algorithm's accuracy, and it is adjusted until the error is sufficiently minimized. Following training, a supervised learning algorithm will accept new unseen inputs and determine which label the new inputs will be classified as based on prior training data. A supervised learning

model's goal is to predict the correct label for new input data. A supervised learning algorithm, in its most basic form, can be written as: Y=f(x). Where Y is the predicted output of a mapping function that assigns a class to an input value x. During training, the machine learning model generates the function that connects input features to a predicted output. Classification and regression are two subtypes of supervised learning:

- *Classification* - To accurately assign test data into specific categories, classification employs an algorithm. It recognizes specific entities in the dataset and tries to draw conclusions about how those entities should be labeled or defined. There are numerous algorithms available to solve classification problems. The algorithm you use is determined by the data and the circumstances. Here are some examples of well-known classification algorithms:
  - Linear Classifiers
  - Support Vector Machines
  - Decision Trees
  - K-Nearest Neighbor
  - Random Forest
- *Regression* - Regression is a predictive statistical process where the model attempts to find the important relationship between dependent and independent variables. The goal of a regression algorithm is to predict a continuous number such as sales, income, and test scores**.** Popular regression algorithms include linear regression, logistic regression, and polynomial regression.

- *Unsupervised learning* - Unsupervised learning also known as unsupervised machine learning, analyses and groups unlabeled datasets using machine learning algorithms. Without the need for human intervention, these algorithms discover hidden patterns or data groupings. Its ability to find similarities and differences in data makes it an ideal solution for exploratory data analysis, cross-selling strategies, customer segmentation, and image recognition. Unsupervised learning models are used for three main tasks: clustering, association, and dimensionality reduction. Each learning method will be defined below, along with common algorithms and approaches for implementing them effectively.

- *Clustering* - Clustering is a data mining technique that groups unlabeled data into groups based on similarities and differences. Clustering algorithms are used to group raw, unclassified data objects into groups represented by information structures or patterns. Clustering algorithms are classified into four types: exclusive, overlapping, hierarchical, and probabilistic.
- *Association Rule* - An association rule is a rule-based method for determining relationships between variables in a dataset. These methods are frequently used for market basket analysis, which enables businesses to better understand the relationships between different products. Understanding customer consumption habits allows businesses to create more effective cross-selling strategies and recommendation engines. Examples include Amazon's "Customers Who Bought This Item Also Bought" feature and Spotify's "Discover Weekly" playlist. While several algorithms, including Apriori, Eclat, and FP-Growth, are used to generate association rules, Apriori is the most widely used.
- *Dimensionality reduction* - While more information for the most part yields more exact outcomes, it can likewise affect the exhibition of AI calculations (for example overfitting) and it can likewise make it hard to envision datasets. Dimensionality decrease is a method utilized when the quantity of highlights, or aspects, in a given dataset is excessively high. It lessens the quantity of information contributions to a sensible size while additionally safeguarding the honesty of the dataset however much as could reasonably be expected.

- *Reinforcement learning* - The training of machine learning models to make a series of decisions is known as reinforcement learning. In an uncertain, potentially complex environment, the agent learns how to achieve a goal. Artificial intelligence is presented with a game-like situation in reinforcement learning. To find a solution to the problem, the computer employs trial and error. To persuade the machine to do what the programmer desires, the artificial intelligence is rewarded or punished for the actions it takes. Its objective is to maximize total reward. Although the designer establishes the reward policy–that is, the game rules–he provides no hints or suggestions to the model for

how to solve the game. It is up to the model to figure out how to perform the task in order to maximize the reward, beginning with completely random trials and progressing to sophisticated tactics and superhuman abilities. Reinforcement learning is currently the most effective way to hint machine creativity by leveraging the power of search and many trials. Unlike humans, artificial intelligence can learn from thousands of parallel gameplays if a reinforcement learning algorithm is run on a powerful enough computer infrastructure.

Machine Learning Roles in E-Commerce

Calculations dependent on AI can deliver more savvy indexed lists. They can get what's composed in the pursuit field because of regular language handling. They'll then, at that point, apply what they've gained from earlier hunts to show the searcher precisely the thing they're searching for. That is valid regardless of whether clients input the item's name or even an entire portrayal. AI based item proposals are likewise keener. Guests to an internet business website can be examined by utilizing predictions. For example, a user searches for some item on Google that creates a log on the user’s system which can be further utilized to recommend related items in future. They'll perceive the items that a guest checks out or purchases, just as the substance that they interface with. Internet business stores currently approach more information than any other time in recent memory in the period of enormous information. AI can help them in figuring out customer information so that promoting procedures can be better customized. Another region where AI proves to be useful is retargeting. Calculations can investigate customer conduct and suggest exceptionally focused on retargeting commercials. PC programming can ascertain online business deals, warehousing costs, charge results, and different variables. Dynamic valuing has been shown to be an enormous accomplishment for online business organizations. AI can modify costs by considering numerous angles simultaneously (Linnworks, 2022).

AI can likewise support the gauging of future interests. Therefore, you have all the data you need to carry out the best cycles possible. Regardless of anything else, online business, in the same way as other business areas, is about market interest. As an internet-based trader, you should ensure that you have the legitimate stock in the right amounts to address the issues of your clients. These necessities shift all through time. Accordingly, proactive stock

and inventory network executives are best. That is the reason anticipating request is so significant for web retailers. Having the option to expect to change customer needs puts you in front of the pack. AI helps you in making precise, continuous gauges. In the internet business industry, dealing with your production network is basic to your prosperity. Step by step instructions to go on is to offset client interest with costs like landed expenses and transportation. You can undoubtedly work through every one of the fundamental figures utilizing AI. Quantitative anticipating should be possible with the assistance of an AI-fueled such as use of ML can help firms to cut costs and support decision-making to more information than an individual can manage, in an organization. Making projections dependent on difficult information is the thing that this involves. It's the best procedure to guarantee that your estimates are pretty much as precise as could be expected. Subsequently, the stock and store network adjustments you make therefore are bound to pay out over the long haul (Gupta, 2o18; Omnisend, 2022; Liu et al., 2020).

The more information you have, the more irregularities you can find. Accordingly, you might utilize AI to see patterns in information, get what's 'ordinary' and what isn't, and be alarmed when something turns out badly. The most average use for this is extortion identification. Clients who purchase enormous measures of product with taken cards or who drop their orders later the things have been conveyed are normal issues for retailers. You may accept that web-based business extortion is a relic of days gone by nowadays of digital protection mindfulness. Lamentably, you would be mixed up. How much cash squandered by web shops because of extortion is ceaselessly expanding? Therefore, misrepresentation distinguishing proof and anticipation are basic exercises for every single web-based organization. AI innovations can assist with improving and smooth out these tasks (Saputra, 2019; Lakshmi et al., 2018; Randhawa et al., 2018[2]).

The unlawful utilization of credit card data for buys is alluded to as Mastercard/Visa misrepresentation. Exchanges with various debit and credit cards should be possible either genuinely or carefully. In actual exchanges, such types of cards are utilized to finish the exchange. This can occur via telephone or the web in computerized exchanges. Cardholders typically supply their card number, lapse date, and card check number via telephone or on the web. Shippers face all expenses related to Mastercard extortion, including card guarantor charges, charges, and regulatory expenses. Since dealers should experience the misfortune, a few items are valued more, and limits and

[2] https://spd.group/machine-learning/e-commerce-fraud-detection/.

impetuses are wiped out. Thus, lessening the misfortune is basic, and having a compelling extortion location framework set up to restrict or dispose of misrepresentation cases is basic. A few investigations on Mastercard extortion location have been directed. The top exactness results from the exchange dataset in online business will be comparing using Machine Learning technique (Saputra, 2019; Randhawa et al., 2018; Quah et al., 2007).

A decision tree is quite possibly the most essential and direct classifier for managing grouping problems. A decision tree is a chart that characterizes occasions by positioning them as per their element esteems. The decision tree is comprised of nodes and branches, with every node demonstrating a characterization occurrence and each branch addressing a potential incentive for the node. In decision, example order starts at the root node, and occurrence arrangement is performed based on include values (Saputra, 2019; Zhang, 2020).

- *Root Node*: The root node represents the absolute populace or test, which is separated into at least two sub-nodes.
- *Parting*: Dividing a node into at least two sub-nodes is called parting.
- *Decision Node*: When a sub-node is parted into various sub-nodes, it is known as a decision node.
- *Leaf/Terminal Node*: Leaf or Terminal nodes are vague nodes.
- Pruning: Pruning is the most common way of eliminating a sub-node from a decision tree.
- *Branch/Sub-Tree*: Branches or sub-trees are divisions of all trees.
- *Child Node*: A node that is splatted into sub-nodes is known as a child node

A tree has many analogies in real life, and it tends to turn out that it has affected a broad area of machine learning, including classification and regression. A decision tree can be used to visually and explicitly represent decisions and decision making in decision analysis. It employs a decision-tree-like model, as the name suggests. Though, it is a common tool in data mining for developing a strategy to achieve a specific goal. Decision trees classify examples by sorting them down the tree from the root to a leaf node, with the leaf node providing the classification. Each node in the tree serves as a test case for some attribute, and each edge descending from that node corresponds to one of the test case's possible answers (Gupta, 2017). This recursive process is repeated for each sub tree rooted at the new nodes.

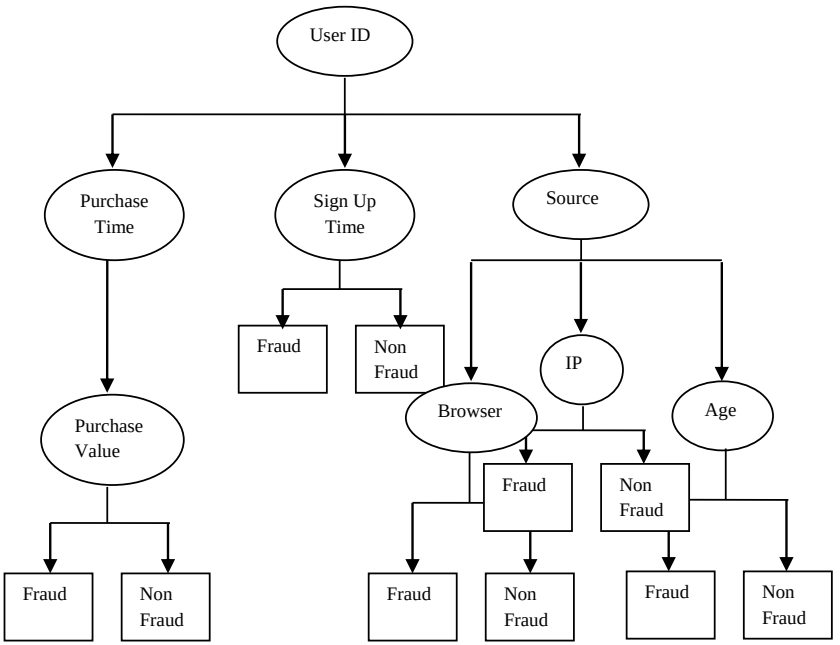

Figure 1. Decision tree for fraud detection.

E-Commerce Sentiment Classification

Every day, millions of online users express their opinions and attitudes through a variety of channels by providing comments on product features, benefits, and beliefs (Kumar& Ogunmola, 2022). This "opinion" or "emotion" data is unobtrusively collected and often contains important data points for companies looking to improve their customer experience, product, or service. Kumar et al. (2022) have emphasized that e-commerce business sees social media advertising as a necessary part of further development so that visitors spend a lot of time on the portal to find, buy and rate their favorite products. In order to purchase some items, a customer is redirected to the corresponding portal. Customers with the right demographic, psychographic, and lifestyle groups for each product purchase can make more informed decisions and identify them using social data that helps brand marketing. Sentiment analysis collects textual data from a variety of sources, identifies views, and uses artificial intelligence (AI) to produce results as positive, neutral, or negative responses to a product, service or brand. Customer surveys have long been

practiced in the retail industry, but the rise of e-commerce has brought back the science of sentiment analysis with the addition of carefully planned methods for assessing customer opinion (Nanda & Kumar, 2022). Unstructured data includes email messages, phone logs, tweets, blog posts, and Facebook messages that aren't available in regular row/column databases (Ayodeji & Kumar, 2020). According to IDC, 80% of all data in the world will not be structured by 2025. Unstructured data is harder to understand and therefore more difficult to compile than structured data available in common databases. Sentiment analysis, on the other hand, can be used in conjunction with artificial intelligence (AI) algorithms to turn unstructured data into useful information. Each data item is "labeled" with a classification label by these algorithms. This makes it recognizable in sentiment analysis. Buyers can impart their viewpoints and mentalities about items through internet-based remarks. Online remark mining can help organizations in further developing their items and web-based business stages in further developing their showcasing techniques. Acquire significant data from an enormous number of web remarks. Thus, using data innovation to help representatives in totally investigating web remarks and helping them has turned into a squeezing need for both item planners and advertisers. Enthusiastic examination is the most common way of mining text content utilizing data innovation to find out with regards to clients' mentalities and perspectives about an item. Passionate arrangement is one of the methods of enthusiastic investigation, and it can help organizations and web-based business stages settle on better decisions by producing genuinely one-sided decisions dependent on web-based assessments. Item improvement and showcasing drives benefit significantly from the examination of online remarks on internet business stages. Remark content, remark star, and remark date are the three critical parts of the internet business stage's remarks. In the customer and service providers both are connected through their product purchase and sales. According to the product quality and services provided by the service providers to the customer the bonding between these two becomes stronger or weaker. Some industries have very strong reputations among the customer and they follow strongly and believe in that. This process of satisfaction improves the ratings of the service providers and if they are not satisfied with the services and quality of products they deny to give strong rating to the service providers. It is giving impact of manual or automation feedback application from the customer and analyzing the data for more focus on addresses the customer's general disposition (Prakash, 2018). On the other hand, the issues that emerge when they utilize the items. Feeling investigation is an AI way to deal with message

arrangement that depends on the Sentimental Orientation (SO) of the assessments they pass on. Opinion examination is a sort of assessment and audit investigation wherein machines assess and classify human sentiments, considerations, and feelings. Printed structure, star rating, and emoticon are utilized to communicate item surveys. Grammatical forms labeling is utilized to oversee sentences that are separated into words and contain action words, modifiers, and descriptors (POST). "Great" is a positive descriptor; while "bad" is a negative modifier. It's basic to perceive negative expressions while investigating customer perspectives (Turney, 2002; Zhang, 2020). To outline the feeling for the full sentence, the opinion of every individual word in the sentence was assessed independently, and the outcomes were then accumulated utilizing a type of total system. It is feasible to apply the elements driven assessment rundown method (Jabbar et al., 2019). Support Vector Machines (SVMs) were picked as the order models (SVM). Scikit-learn (2019), an open-source AI structure written in Python for information investigation and mining, was utilized in this exploration (Walia, 2021; Li et al., 2019; Hearst et al., 1998).

Product Recommendations in E-Commerce Using Machine Learning

E-Commerce business was one of the principal organizations to utilize AI to its maximum capacity. AI applications are presently accessible for basically every part of internet business. From stock administration to client assistance, AI answers for web-based business are incredibly gainful. In the web-based business industry, proposal motors and AI straightforwardly convert into income and improve the organization's piece of the pie through more noteworthy customer securing. You can completely assess the internet-based exercises of a huge number of individuals utilizing AI calculations for web-based business and the handling of huge volumes of information. You can utilize it to make item suggestions that are customized to a specific purchaser or gathering. Utilizing an assortment of AI calculations, item proposal motors would now be able to dissect customers progressively and prompt the best fit. We can see which sub-pages the customer utilized by assessing procured enormous information on current site traffic. It was not difficult to sort out the thing he was searching for and where he invested the majority of his energy. Besides, results will be furnished on a customized page with recommended

items that would in all probability intrigue clients dependent on various data profiles of earlier client conduct, inclinations (for example favored shading), web-based media information, area, and climate. In spite of the fact that terms like computerized reasoning, AI, information mining, and neural organizations used to fabricate suggestion frameworks sound convoluted, the idea is clear: We have a progression of keen estimations and calculations that can continuously comprehend and foresee your clients' inclinations. Coming up next are a portion of the methods engaged with making an item idea utilizing AI (Genovese, 2020; Haponik, 2021; Änäkkälä, 2021).

- *Showcasing well known items by sales number:* This non-customized innovation depends on the aggregate longing, for example, the quantity of items bought; timing on item page; continuing setting item in shopping basket (Product Recommendation: By clustering/ grouping items); and the quantity of item perspectives and buys in a given spot. The essential justification for showing famous items is assuming countless individuals have bought them; it is very plausible that others will too. At the point when a client visits a site, information is gathered behind the scenes, but since it is conceivable that this is the client's first visit to that store, proposals are wide and in view of in general prominence.
- *Recommendations dependent on browsing history:* As the name suggests, we will get new item proposals dependent on what you've effectively checked out. Example: News recommendation.
- *Recommender frameworks dependent on the location-based information* - Because we essentially consider a client's area in this item idea motor, customization is negligible. Online business advertisers who utilize this method present a disclaimer, for example, "Individuals in your locale likewise loved" or "Individuals in your neighborhood additionally purchased." The objective of this methodology is to figure out any forthcoming social relations or characteristics for individuals in a particular topographical area. Assuming you sell stuff from one side of the planet to the other, you could wish to remember things for such regions that are proper for a particular country's unmistakable occasions or recent developments.
- *Filtering for e-commerce business item dependent on content* - This technique depends on the similitude of the things you sell. Every one of these things has a bunch of qualities, and each pair of clients is

assessed independently and looked at. This online business suggestion procedure is a great fit for stores that are simply beginning with a couple of deals yet no evaluations. The web-based business proposal motor will actually want to give ideas to different clients dependent on a past purchaser's buys or truck data (search box: filtering).

- *User-to-User cooperative sifting approach* - The cooperative separating strategy is totally founded on how different clients and clients have assessed an item they have bought previously. The technique depends on the understanding that customers who have made equivalent buys and have comparative preferences for the past would need to involve comparable items later on. Besides, it believes real choices made by individuals rather than essentially evaluations, can be only a reasonable deduction.

There are two essential approaches to doing this at this point:

(1) Utilize the customary star rating framework and request proposals.
(2) Permit clients to pick either at least two items, with the framework positioning one over the other in the backend.

Everything starts as follows:

(1) An item gets a four-star rating from User A.
(2) B appoints a four-star rating to a similar item.
(3) Client A then, at that point, supports an item and grants it five stars.
(4) B will be suggested the indistinguishable item that client A scored 5 stars since it is expected that B will appreciate it however much client A did.

- *Recommendations dependent on appraisals* - They've been around for some time and are in the class of conventional methodologies. This type of fundamental web-based item suggestion is utilized by Best Buy and depends on broad evaluations.
- *Item-to-Item Collaborative Filtering Technique* - Items inside a solitary client's profile are connected by means of the thing to-thing

customization approach, which takes out the requirement for different customers. For instance, assuming you have bought cookware from one brand, you will be suggested further cookware from that equivalent brand. Group ideas, in which items bought together are regularly suggested as a strategically pitching approach dependent on the buyer's past buys information, are utilized by Amazon. Rather than physically choosing items, you might use an AI-based web-based business item suggestion framework to show the genuine item choices made by purchasers.

- *Hybrid e-commerce product suggestion* - To guarantee the exactness of custom fitted suggestions; most large sites utilize both cooperative and content-based sifting calculations. Assuming you're as yet suspicious with regards to AI's adequacy, consider that these mixture proposal calculations have saved Netflix about $1 billion consistently. What's more, assuming you're a Netflix client, you need to recognize that you're likely continually watching what's recommended to you. They picked the half and half framework since they found something that each internet business organization proprietor ought to know about.
- *Recommender frameworks dependent on information* - Starting with a bunch of foreordained standards, this recommender framework builds up joins among items and individuals' needs. Leaving appraisals to the side, the information-based recommender framework utilizes questions [or look, contingent upon your preference] to sort out the thing they're searching for from an immense information assortment. The name comes from this. Information bases are data sets that store the points of interest of everything you're selling.

Personalized product recommendations are already being used by e-commerce organizations all over the world to keep customers and enhance profitability. Machine learning applications have a direct impact on customer service and business growth in the e-commerce industry. You may develop business benefits for each department of your e-commerce business using machine learning applications in e-commerce. Improve customer service, efficiency, and productivity, as well as customer support, and make better informed HR decisions. Machine learning algorithms for e-commerce will continue to be of significant service to the e-commerce business as they evolve.

Conclusion

Applying artificial intelligence and making a big difference tp the customer experience is important if you take the time to understand how it works. Machine learning can help your business grow, analyze consumer sentiment, monitor supply chain management systems, analyze customer feedback, and improve sales forecasts. Machine learning algorithms can analyze historical data about customer preferences and behaviors. As already mentioned, the machine learning algorithm can quickly find iterative patterns in a dataset. However, this means that you can see what is happening "against the grain." In practice, machine learning is often used to detect fraud and identify anomalous activity (such as increased transaction frequency) on investigated credit card accounts that may indicate fraud. You can accurately predict customer preferences and propose the best products for your customers. This helps e-commerce companies and banks increase sales and increase customer satisfaction.

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Chapter 5

Analysing Opportunities for Mobile Commerce

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Abstract

With the large scale proliferation of smart phones, improvement in internet speed and better equipped applications, mobile phones are bound to have more eyeballs, offering a great opportunity for the businesses. The mobile phones are now preferred device for the game players and social media users. Even for the marketers, mobile phones have emerged as most common modes of running the marketing campaigns. However, a number of new techniques are also being used by the businesses to add new flavours to the mobile commerce environment. Some brands have specially developed mobile based apps for reaching their customers and fruitful results have been reported. This chapter analyses the adoption of mobile commerce and presents the different methods of reaching to the target customers using the unique features of mobile commerce based strategies. The mobile apps and web based m-commerce business model has been presented considering the various stakeholders and factors influencing the business strategy. The framework can be used as guiding mechanism to plan and control the mobile commerce based initiatives.

Keywords: mobile commerce, m-commerce, e-commerce, online business, e-retail

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Introduction

Mobile Commerce or M-commerce is the latest version of electronic commerce, where the customers use mobile, handheld wireless devices to communicate and conduct transactions over public and private networks (Balasubraman et al., 2002). Mobile commerce has new offerings which make it more useful to the customers and the business as well. It is easy for the businesses totrack the user location for delivering location specific information and for activity tracking and logistics, anytime anywhere transactions (Stoica, Miller, &Stotlar, 2005). The mobile commerce helps in using the vending machines, parking fee or fuel paying using the mobile wallets or mobile balance (Mittal & Kumar, 2020). In the last decade, there have been major shift in technology domain, especially in the internet speed and accessibility (Singh & Kumar, 2022; Lata & Kumar, 2021c). Mobile phones have become the preferred device for internet users.

The global retail sales have been increasing incrementally and reached USD 25 trillion globally in the year 2021. Out of this USD 20.5 trillion (82% of the total retail sales) was offline. In the year 2021, retail e-commerce sales was around 4.9 trillion U.S. dollars worldwide. Which is forecasted to grow by 50 percent over the next four years, and cross the 7.4 trillion dollars mark by year 2025 (Statista, 2022). On the same pattern, the Indian retail sector was USD 1 trillion in the year 2021 with a projection to cross USD 1.4 trillion by the year 2024, along with Indian online retail sector reaching more than USD 100 billion by 2025 (IBEF, 2021a). In the year 2019, mobile commerce as the share of e-commerce was around 67.2% and projected to reach 72.9% by the year 2021 (Loesche, 2018).

Fast adoption of online games, accessibility via mobile apps and social networking sites has offered a large pool of game players available to the businesses. Mobile phone users are involved in the various activities on the small screen, which is interactive and has much more to offer than the larger screens like television, radio or the desktop/laptop computers (Mittal & Kumar, 2020). Users of all age groups like to spend more of their screen time playing the games on their mobile phones. So, these mobile minutes are precious for the marketers as the user is focused on the mobile screen. Also, the number of smart phone users is continuously increasing across the world, to further add large number potential gamers (Kumar & Nanda, 2019). Similarly the social networking sites like Facebook, Instagram, Snapchat, Linkedin etc. have large proportion of users logging in more with the mobile

phones (Ayodeji& Kumar, 2019). Gaming, social media and messaging apps have made users more comfortable in mobile phone usage.

With the latest technological platforms like app developer environment of android play store, the development and launching of the mobile games has become very cost effective. The distribution cost of mobile apps is minimal and the upscaling needs only improvements in the technical specifications of their servers and internet bandwidth (Lata & Kumar, 2021c). Custom mobile apps for different product are now easy to develop and share. Hence, these mobile apps present a cost effective platform for trading products online (Saurabh& Kumar, 2017).

According to "State of Mobile" industry report by App Annie, the mobile app downloads grew by 7% year-over-year to a record $218 billion in the year 2020. The consumer spending also increased by 20% to reach $143 bn (Appannie, 2021).

Evolution of Mobile Commerce

In the year 1997, Kevin Duffey used the phrase "mobile commerce" for the first time during the launch of Global Mobile Commerce Forum. Coca-Cola followed it up with installation of two vending machines in Helsinki which accepted payment via SMS text messages over mobile phone. Next year, 1998, Radiolinja brought the concept of sale of digital content like ringtones on mobile devices. Finnair mobile check-in facility in the year 2001 opened up new vistas for the mobile commerce. Further many more innovations in the first decade of 21st century saw the applications using wireless markup language (WML) and WML Script for development of mobile commerce applications like payments, parking, train ticketing, and voting for TV show contestant etc. Many experiments like payment from mobile recharge made small size online transactions more convenient. Around year 2008, iPhone shifted the mobile commerce from SMS messaging to actual mobile applications (popularly called mobile apps). In the study of digital buying behaviour of European consumers,' it was found that there was a consistent increase in their online channel, mobile phones and search engines usage (Hazan and Wagener, 2012). Hence the companies should develop consistent messages across these touch points to tap this opportunity. The research also found that the online journeys of the customers vary by their segment, geography and the product category. The research also recommended personalization of marketing campaigns and reallocation of the marketing

budgets to the most efficient channels, which have been classified asas "paid," "owned" or "earned." Another research by identifies the effect of digital media on every aspect of the consumer decision journey, right from the initial consideration, active evaluation, purchase, consumption and loyalty (Galante, Moret and Said, 2013; Lata & Gupta, 2020). The research also mentions the emergence of roles such as "Chief Content Officer," "Data Whisperer," "Community Manager" and "E-commerce Expert." Smartphones operating systems like IOS and Android have been behind the popularity of mobile commerce due to their simplicity. Today mobile wallets have made even the traditional commerce safer and more convenient for the end users.

Features of Mobile Commerce

The mobile commerce offers unique opportunities to the users as well as the retailers. The significant features of the modern mobile commerce include the following:

1. *Ubiquity:* World over there has been a large scale adoption of the smart devices which provide a new platforms to the businesses beyond computer systems (Kumar et al., 2020; Lata & Kumar, 2021a). The smart mobile devices are versatile and help the users in multiple tasks, making them more popular.
2. *Multi-way communication:* Business to marketing platform, consumer to marketer, consumer to consumer and consumer to business communication along with interaction with the e-market place platforms serving these product listings to the customer.
3. *24x7 Availability*: The mobile phone remains switched on most of the times, even while the users are relaxing or during their travel. Hence the product information is available to the target customers anytime anywhere with the option to complete the transaction too.
4. *Marketing Channels:* Multiple marketing channels and tools are available on the mobile devices. With more sophisticated smart phones equipped with the latest features and enhanced computing powers, the opportunity for the marketers is also bigger (Kusumawati et al., 2021).
5. *Personalisation:* More consumer data like location, demography, contacts, integrated services offer big potential for more localised and

personalised marketing campaigns. The effective use of analytics also helps in better targeting.

6. Mobile Payments: Payment via mobile recharge, virtual tokens, mobile wallets etc. provide options for the convenient shopping experience to the users.

The mobile commerce can be commenced with multiple channels. Most prominent of them include:

Mobile Website

Mobile website or mobile compatible websites are used by the companies to share the content about the organisations and their offerings. Official blogs accessible on mobile phones are used to deliver the other important content and information which may not be shared on the official websites (Kumar & Nanda, 2020). So, the mobile compatible/ responsive websites are important channels for businesses to provide detailed information about the product/ services. Blogs or articles (content) were the first major offering of the internet in the 1970s till 1990s. The university researchers and lab scientists used blogs to share their findings and collaborative work. Businesses too got an opportunity to develop their product related stories, features and provide the utilisation insights which are not possible in so much detail in the other marketing channels. All leading businesses provide detailed information about the product (for example, automobile, electronic gadgets, readymade garments etc.) in detail along with the videos for convenience of the users. The websites are designed in a way to adjust according to the size and resolution of mobile phone screen. Large organisations as well as small businesses and one-person shops around the globe can easily get their mobile websites ready with a small budget with limited features. These websites and blogs are also useful for organic marketing campaigns, with no marketing budget as such. Business launch the marketing campaigns to attract first time visitors, keep them involved with the content, repeat visits, grow the interest and motivate them for action i.e., sales.

Mobile Applications (Apps)

Mobile app or application is a special software which is developed for use on a mobile device. With the growing types and number of apps, businesses have

a new channel for content marketing and sales campaigns. The mobile application stores (for example, Google Playstore and Apple App Store) have various types of applications, like games, company specific, news, entertainment or information on specific topics. Organisations launch their mobile apps for the customers who need to access the content repeatedly, like regular shopping, checking the share prices, mutual funds, ticket bookings for travel, entertainment, latest news etc. Generally, the mobile apps are lighter in space requirements and offer one or more functions to the users, with the advantage of location knowledge. The mobile apps utilise the other services like contact list, location and camera etc. to offer more personalized information and services to the users. Businesses may launch their own apps to capture new mobile user customer segment and drive more traffic and sales. The global average share of mobile-only internet users was found to be around 30%. According to the analytics company Hootsuite, South Africans 10.46 hours per day using the internet. The share of mobile phone for internet access has also increased from 27% in the year 2013 to around 53.5% in the year 2021 (Hootsuite, 2022). Indonesia (87%), Mexico (80%), and Argentina (77%) were the other markets that were spending most of their online time on mobile phones (Timesofindia, 2017). The mobile apps may include the company, product, blogs etc., along with the online ordering facility. Mobile apps are useful for the companies which offer products repeatedly used by the customers. Online Travel booking, food ordering, news services, investment companies and many other businesses use the mobile apps as their preferred mode of bringing the content to the users. The mobile apps are owned by the organisations and they help in completing the transactions or deliver the content.

Social Media

Social media has itself become a reliable mobile commerce channel over the last few years (Lata & Gupta, 2020). Content developers are taking advantage of the popular platforms like Facebook, Instagram for creating a large pool of followers, who may be targeted for the offerings by businesses (Lata & Gupta, 2020). Customers are attracted to the advertisements where directly they can install and application or subscribe to the service or buy the products. Social media provides a level playing field where the start-ups as well as smaller companies with limited resources can successfully compete with the bigger brands who have big budget on other traditional forms of marketing like

banners, newspapers and television. Now a days, 'Going viral' is the ultimate aim for many brands on social media with quality content. Large number of social media users now use mobile phones for accessing their favourite platforms. Social media has emerged as an important tool for marketing because of the ever growing user base and the high engagement levels (Lata & Gupta, 2020). The users spend around 80% of their social media time using their smartphones. The businesses need to devise strategy to convert this engagement into revenue. The businesses can create company pages, interest groups, display advertisement (banners), product or brand videos, and social media platform based games (e.g., Farmville) for their sales objectives (online selling or mobile app installation). The social media mobiles companies like Facebook, Linkedin, Instagram, WhatsApp, WeChat and Telegram have their mobile apps which are further supporting person to person communication and helping in the customer engagement and branding. Mobile commerce companies can conduct their consumer research, product launch, promoting sales using the social media (Kumar & Pradhan, 2015). Simple presence and regular activities by the organisations on social media is organic marketing. For more customer reach, the social media platforms offer paid promotions and visibility to the organisations.

Search Engine Marketing

Mobile phone is always close to the users and it is always. The customers can easily pull out the mobile phone anytime anywhere to search for the information which are found useful for them. The users have the option of entering the search query using the QWERTY keyboard, or use the mobile microphone for speaking the query. This query is recognised by the search engine and it generates the sponsored results and the best matching results as an output (Bhardwaj & Kumar, 2022). Additional feature of search by speaking makes the mobile based search engine marketing even more attractive. Google is the top search engine for mobile users with 89.96% and Baidu is distant second with 6.9% market share (Netmarketshare, 2020). Businesses need to make their websites mobile friendly and optimise the content for the search engines. This is useful activity and is called organic (without any payment). Special mobile friendly website version or the responsive websites are important for the advertisers. Search engine optimization is helpful in bringing the company website on the higher ranks in the search engine result pages (SERP). Due to large number of websites

contesting for higher ranks on the same search keywords, the mobile commerce companies may consider including paid advertisements for quick conversion and increasing the effectiveness of search engine marketing campaigns. Once the users search their queries and reach the website, they have the option to complete the purchase/subscription transaction on their mobile phone itself.

Display Marketing

Mobile commerce companies can project their offerings using the digital banners, which are similar to the traditional banners/posters. The popular mobile apps and web portals with high number of visitors or the domain relevant websites like Yahoo (general web portal), Shiksha (education portal), Cardekho.com (automobiles web portal) etc. (Lata & Gupta, 2021). display various banners of different sizes. Since these popular websites have a large number of mobile users, these banners are shown to them with the latest offerings, CSR projects, seasonal sale, offers and discounts etc. A mix of graphics, real time pictures and rich multimedia content (animations, gif etc.) attracts the customers and the display marketing is found to be very effective. In the contextually relevant environments these mobile display banners may be more beneficial (e.g., magazine or newspaper article with content from same domain). Selection of the right mobile app or website, visuals, content quality, dimensions and banner size are major factors for the success of display marketing on mobile phones (Mittal & Kumar, 2022). The mobile apps for social media, news, e-commerce, and mobile games offer opportunities for display banners, sponsored content and interactive forms, video clips and animations. This channel helps the businesses to showcase their content and generate additional revenue. Mobile App based advertisements contribute a major share in the revenue for the app publishers in addition to their sales/ subscription revenue.

Video Streaming

The mobile based video platforms are becoming more and more popular, with YouTube having more than one billion users worldwide (YouTube, 2018). In the developed economies like US and UK, YouTube was found to be the leading video streaming app with largest number of active users (Techcrunch,

2017). Businesses have a great opportunity in utilising the video streaming as 80% of millennials refer to the video content, during their purchase related research decision (O'Neill, 2015). The top video streaming mobile apps were found to have their revenue increasing steadily because more customers are willing to have paid subscription for their favourite mobile video apps. Seeing the trend of video preference by the user many companies have started including video marketing in their broader strategy. Popular social media platform Facebook launched Facebook Live and its group company Instagram also increased the video length to a maximum of 60 seconds. Another popular social media platform Twitter also launched the live video streaming (Kumar& Nanda, 2022). Videos are found successful in getting the viewer attention with the interstitial or superstitial advertisement content. Businesses upload the product related informative videos like unpacking, comparision, video blogs (for example tour and travel companies) for convincing the customers to complete their transaction.

Short Message Services (SMS) Marketing

In the journey of mobile commerce, SMS play an important role. SMS is being used to deliver One Time Password (OTP) to the users while logging in, payments or status update on the product delivery. SMS services was dominant with the large adoption of mobile communication in the initial years as there was no need of internet connection, Businesses as well as customers found SMS as easy, cost-effective and result oriented service available over smartphones as well as feature phones. The SMS marketing campaigns permit the embedding of weblinks or mobile app download within the message text. Many advertisements in the traditional as well as digital space include SMS numbers to support the interested consumers in obtaining further information. SMS advertising takes advantage of valuable wireless communication channel for direct marketing, promotion campaigns and enhancing the customer relationships (Frolick & Lei-da, 2004). Marketers need to prepare small text (140-160 characters) message about their offering. SMS advertising is found suitable for pull & push promotions, effecting the purchase decision and enhancing the overall marketing campaign effectiveness (Frolick & Lei-da, 2004; Roozen & Genin, 2008). Organisations need to launch their sign-in campaigns to develop a database of the customers or prospects (Lata & Kumar, 2021b). This opt-in database is then segmented for customized SMS marketing campaigns. Many CRM and third party platforms offer SMS

services along with offering the insights to the businesses about the SMS campaigns. Open rate, click rate, bounce rate and several other measures help in further tuning the SMS marketing campaigns (Lata & Kumar, 2021c).

E-Mail

The smartphones have been primary device for most of the email users and all the leading email service providers offer mobile apps (Kumar et al., 2021). The businesses need to redesign their email marketing strategy as per the place, time and mode of accessing the email by their target audience. Many ERP, E-CRM solutions and third party email service providers have the email features where the marketers can launch the customized campaigns for the various customer segments as per their preferences and past actions. The various metrics like delivery rate, open rate, click on link, query, website visits etc. are available for further optimize the email campaigns. E-mail blast on the large email database also leads to Spamming and annoying the recipients. E-mail is being used for mobile app password reset, one time password, sales transaction confirmation, payment confirmation, order status update etc. during the mobile commerce cycle. The fast adoption of mobile phones (android and iOS) and tablet devices means that the modern businesses need to adopt a "mobile-first" strategy. Around 75% customers were found to prefer mobile phones for checking their personal emails and 79% customers preferring computers for using their official emails (Ryan Dietzen, 2017). The personal emails are ideal for the marketers where preference of the mobile phone is more. Customers may be sent more detailed information about the offering as well as weblink can be embedded to visit the website or mobile app right from their inbox.

Framework for Marketing Mobile Commerce Businesses

The mobile app based advertisements work similar to the traditional web based advertisements. The application publishers register themselves to the advertisement networks, which are selling the advertising space in their apps to the potential advertisers (mobile commerce or traditional businesses). The business advertisers buy important spots as per their product and brand profile, which can bring them closer to their target demographics. The business

advertisers pay to the application network for every click, simple impressions, mobile app download or final sales. The advertisement network then passes a fraction of the advertisement revenue to the application developer where the advertisement was displayed and the customer was reached. The popular apps like news apps or e-marketplace can directly work with the advertisers and fetch more revenue for advertisement campaigns than the app network based advertisement. The revenue model for the mobile app based marketing has been shown in Figure 1.

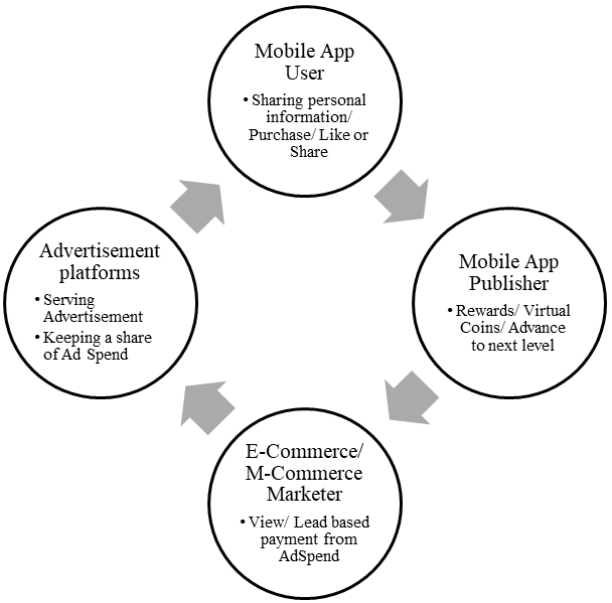

Figure 1. Mobile app based marketing revenue model.

Mobile App Publishers

The mobile application publishers play an important role in the mobile commerce environment and the full featured version of high valued content apps are generally chargeable (for example news, research, gaming etc.). The trial versions of these apps may be free with the sole objective of advertisements. The app publishers get a two-sided revenue model in which the user need to pay directly for installing the app and consuming their content. App publishers get advantage of the large number of users to get additional

revenue from marketing activities from the advertisers (Lee & Faber, 2007). The app publishers register on the advertisement platforms (for example Google Ads) to bring the best matching advertisements in lieu of a fee, deducted from their revenue. They also attract the users with virtual coins/ social recognition or advancing to the next levelsfor the app installs or specific actions.

E-Commerce/Mobile Commerce Marketers

For a successful marketing campaign, along with developing engaging content, reaching out to the target audience is also very important (Kumar &Ayodeji, 2021). The marketers have to find out the right audience which will show of intrinsic motivation in engaging with a gamification product. Advertisement platforms offer better targeting to the e-commerce/ mobile commerce marketers to reach the right audience. In-game advertising offers a great target audience for advertisers because they are engaged in repeated and long sessions. User activities (view, click, lead generation etc.) are counted for payment from their marketing budgets.

Mobile App Users

The users' attitude toward advertising has been a main concern and focus for a long time for the businesses. Researchers have been focusing on the youngster's attitude towards mobile marketing, especially towards mobile marketing campaigns (Kumar, &Ayodeji, 2021). The youngsters spend more time on the mobile apps (for example games), hence there is a big opportunity to influence their attitude towards the products on offer. Mobile app users may be influenced with the product placement or take an action like sharing contact details (lead generation), subscription or purchase. Sometimes a simple recognition and advance to next phase or special powers/ badges also motivate the game players to take action (Lee & Shin, 2017). Users get rewarded for their actions and get virtual coins to keep them engaged in the future.

Advertisement Platforms

Advertisement platforms collect advertisements from various advertisers and serve them on the mobile app publishers who have registered on them. The

adspend of the advertisers is managed by the platform for better targeting and return on investment. In lieu of this, the advertisement platforms keep a share of the adspend as its revenue. Cost per click is the most common way for payments by advertisers to the mobile app developers, but per view or other actions based payment mechanisms are also available. The CPM (Cost per million views but practically for per thousand impressions of advertisements displayed to the users) may range from USD 0.53 to USD 1.12. If any mobile app has on an average 1,000 visitors daily seeing only two advertisements each at an eCPM of $.50, the mobile app will get USD1.00 per day (Butner S., 2016). Commissions per sales are also being used by the e-commerce/ M-Commerce companies to attract mobile app publishers to show their advertisements. Games like Supercell and Activision Blizzard's titles don't use much advertising in its games, and therefore it shows in its revenue breakdown, earning more from in-app purchases. Glu Mobile, Zynga and EA Games are more reliant on in-app purchases but also gaining good revenue from advertising (Apptopia, 2017). Similarly news websites, education and medical information portals have attracted large number of users who are shown the advertisements of the relevant products.

Challenges for Mobile Commerce

Risk Assurance

The consumers' behaviour is strongly influenced by perception of risk. Consumers are usually uncertain about the consequences of a decision or an action (Bauer, 1976). The consumers try to minimize risk rather than maximize utility. A consumer's subjective risk perception can thus strongly determine this behaviour (Mitchell, 1999). Generally the users perceive data security as a major challenge for the mobile app interactions. Due to the web and app based interactions, there are common concerns about identity theft, data manipulation, unauthorized data access, and tracking of user activities (Lata & Kumar, 2022). The anytime anywhere user access to app publishers provides high-potential, personalized mobile marketing opportunity, but it also accounts for consumers' willingness to adopt mobile commerce as an innovation (Högberg, Shams & Wästlund, 2019). App publishers need to clarify their strategy and data usage policy to the gamers during the installation and strictly follow the same.

Ensuring Utility (Information, Entertainment and Social)

The consumers will only accept mobile commerce if they perceive a benefit in shopping or consuming content on their mobile phone (Kavassalis et al., 2003). For the mobile based marketing also, the businesses need to be careful about utility of the content being served to the consumer. According to Kaas (1990), a consumer perceives the advertising stimuli if its marginal utility exceeds the marginal utility that results from using an additional time unit to engage in an alternative activity. It means that if the mobile users perceive the utility of content, their attitude towards it will be more positive. Consumers consciously select and use contents and products to gratify specific needs.

Utilising the User Pause Patterns

The breaks between app usage/ gaming levels, unlocking a gift or achieving a milestone like winning or losing a race etc. are considered to be perfect time for serving an advertisement to the players. The players may be looking for a short pause and relax before moving on with the gaming experience. App designers need to identify such pauses and clearly communicate the possible duration of pause to advertisers. These interactions may also be good opportunity to attract the players with a special reward like extra time, upgrades, unlocking next stages etc. (Acar, 2007). A quick app installation or subscription to the newsletter could be completed in this short time.

Utilising Existing Knowledge

Existing knowledge affects the consumers' response and it helps them understand the features and usage of an innovation. Existing knowledge thus affects the consumer's perceptions of the innovation's complexity (Moreau et al, 2001). The more familiar a consumer is with mobile communications in general the less difficult the use of mobile commerce or apps will appear to him/ her. An individual's inclination to search and use information is an important construct in the analysis and explanation of consumers' behaviour (Kroeber-Riel & Weinberg, 2003, Ayodeji& Kumar, 2020). Relevance of contents and products depends on the consumer's willingness to get information about it. Hence the businesses need to analyse the existing knowledge of target mobile users.

Visual Aesthetics

Effective images command attention and communicate some feeling to an audience. There are various visual elements like lines, shapes, forms, texture, color, value, size, and shape which impact the effectiveness of any image (Feldman, 1987). The mobile commerce platforms to carefully check the colour, font, graphics of graphic banners, animations and videos before strategizing their contents on the website or mobile apps. These elements of visual design help improve the image's composition and effectiveness. The visual aesthetics of the products creates value for consumers and it creates significant value for product and makes it more special (Mumcu & Kimzan, 2015). The visual aesthetics have impact on the consumer's response as well as brand image.

Innovativeness

Actual innovativeness is the adoption of a specific innovation by an individual. Some consumers have preference for high degree of innovativeness and they welcome new experiences, making constructive use of information received (Leavitt & Walton, 1975). With the increased research and development budgets and availability of multimedia content for mobile commerce, the customers with a high level of innovativeness are likely to receive a large amount of information on mobile communications (Peter & Olson, 2002). Businesses need to think and implement unique ways like virtual reality, augmented reality, vibration, pinch, tap etc., to communicate with the users in their shopping experience. An emerging use of mobile games is to drive competitiveness through interactions over innovative platforms (Kumar &Ayodeji, 2021). For instance some popular sporting events see the launch of mobile games before the real event which excites the users to the event. NBA[1], Indian Premier League[2] and many other events have successfully utilised this unique opportunity. Mobile app and website publishers can also update the software with the changes in product/event with time. These updates would further enhance the customer engagement with brand.

[1] https://emulatoronline.com/games/nba/.

[2] https://economictimes.indiatimes.com/small-biz/startups/nazara-games-signs-deal-to-launch-ipl-mobile-game-starring-virat-kohli/articleshow/58059091.cms/.

Accessibility

Mobile commerce experience needs to be designed to ensure easy accessibility to various links and options (Mago, Z., 2017). The customers may sometimes consciously or subconsciously ignore the brands/ information / product image banners. This ignorance may affect the user response and engagement rate. Some researchers have found that after some time of interacting with advertisements, the respondents do not remember the brands (Nelson, 2002; Yang & Wang, 2008). The businesses need to work on banner blindness, exploring options like timing, location, colour and content to judge effectiveness of the advertisement and not compromising on their online experience. Due to the small screen size and touch based interactions, the apps might also have fat finger errors. Users generally tap or click on the various buttons on screen. But the wrong tap is annoying for a player who is in the mid of a mobile commerce transaction.

Using Ads as Reward

To have positive response from the customers, advertisers can reward them for viewing them with some virtual coins, points, or any other benefits applicable (Kumar & Pradhan, 2020). Many businesses like Makemytrip and Amazon have adopted the gamification in their apps as well as websites. Giving free coins to the users through loyalty programs or coins can lead to increasing sales of game items or the products (Lee & Shin, 2017). In year 2011, Facebook gave special reward to the users of its games like 'Frontierville' for watching advertisements. This makes the advertisements more desirable but app publishers have to give away freebies to get the additional views. This bonus or help offered to the users in exchange of interaction with advertisement gives more engagement, clicks and sales.

Conclusion

The mobile commerce presents a unique opportunity for the businesses where they can reach the target customer anytime and anywhere. The new services like location tracking, more customer profile related data and integration of multiple services on a common device makes mobile commerce more

attractive. As the users get more comfortable with online transactions and businesses bring innovative solution to the customer concerns, the opportunity of mobile commerce is bound to grow further. With the improvement in technology, better internet connectivity, data analytics and affordable smartphones, the mobile commerce will reach newer customers in the near future. Modern businesses need to keep mobile commerce as a high priority not only to keep attracting newer customers, but not to be left behind in competition.

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Chapter 6

E-Commerce in Southeast Asia: A Futuristic Perspective

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Abstract

COVID-19 pandemic changed the behavior of people including buying behavior. So, it builds opportunity to digital business to increasing market share, including e-commerce as a new business platform. The massive retail industry is turning to digital as a lot of businesses are partnering with e-commerce platforms. Correspondingly, the number of online sellers in SEA increasing and sales on e-commerce platforms is increasing at an unprecedented rate. However, the consumers still want the same online shopping experience as offline. The present chapter considers the different aspects of e-commerce growth in Southeast Asia and identifies the most important drivers. A comparative analysis of e-commerce in different countries of Southeast Asia has been presented with a futuristic outlook.

Keywords: COVID-19 pandemic, e-commerce, Southeast Asia (SEA), video technology

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Introduction

The average Southeast Asian spends about 3.6 hours using mobile Internet every day (Dailysocial, 2021). This figure is the highest in the world and makes Southeast Asia the only region with this unique statistic. Across the region, desktop traffic represents less than 30 percent of web traffic (Dailysocial, 2021). This shows the importance of a mobile-friendly platform for e-commerce merchants (Kumar & Saurabh, 2020). This potential makes the growth of e-commerce in the Southeast Asia region relatively fast. On average, Southeast Asians spend about 140 minutes online shopping each month. That's double the time Americans spend on e-commerce. Southeast Asians are also more likely to make purchases on weekdays than on weekends (Dailysocial, 2021). However, mobile traffic peaks on weekends. This condition shows that consumers are more likely to browse e-commerce sites and find products during this time and make purchases on weekdays. This fact can be the main focus for e-commerce businesses to stimulate consumer purchases with various promos such as flash sales, collaborate with influencers and improve services on weekends because many goods search activities are carried out by consumers on holidays along with lots of screen time. The more promos carried out on weekends, the domino effect will increase the number of consumer transactions on weekdays.

The high number of online shop transactions in the Southeast Asia region is also a potential for e-commerce growth in itself. The next potential is a variety of payment methods. Due to the low credit card penetration in the region, e-commerce players face unique challenges that go unnoticed in the Western world. As a consequence of this structural deficiency, a much more diverse range of payment solutions has proliferated in the region, namely: (1) Cash on Delivery (COD) is offered by more than 80% of E-commerce players in Vietnam and the Philippines, (2) Transfer methods popular banks in Indonesia (94%), Vietnam (86%), and Thailand (79%), (3) Nearly 50% of merchants offer offline points of sale in Thailand and Vietnam, (4) Instalment payments are proving to be very popular (and increasing) in Vietnam (47%) and Indonesia (42%).

Daily e-commerce transactions in Southeast Asia have increased drastically since the COVID-19 pandemic hit and required the government to provide physical distancing policies to its citizens (E-Marketer, 2021; Lata & Gupta, 2021). Thus, people's buying and selling patterns have changed to digital-based, especially for retail-based businesses. Accompanied by the rapid development of e-commerce and marketplaces, various interesting

features are also presented, making shopping convenient for its users. A snapshot of the retail e-commerce sales has been presented in the Figure 1 (E-Marketer, 2021).

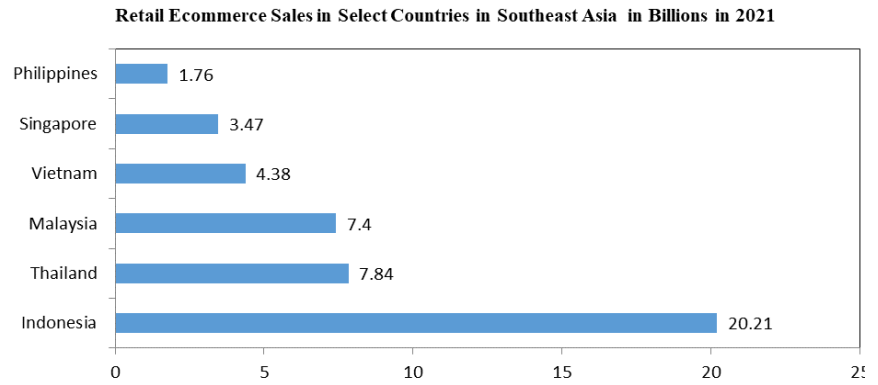

Figure 1. Retail e-commerce in select countries in Southeast Asia in 2021.

As presented in Figure 1, the Southeast Asia experienced an e-commerce boom. This can also be attributed to the fact that different pandemic-driven social lockdowns empowered more shopping from domestic e-commerce players (Kumar & Gupta, 2021). The six major economies that we track within the locale will deliver $970.83 billion in generally retail deals this year, of which as it were 4.6% or $45.07 billion will execute by means of e-commerce. This can be one of the most reduced territorial e-commerce offers within the world, recommending abnormally huge room for development, especially given the scale of the combined populace of the six markets (Ekrut Media, 2022).

Indonesia accounts for about half of Southeast Asia's e-commerce, which is unsurprising given the country's size. We estimate that digital sales in the United States will reach $20.21 billion this year, up 15% from 2020. The rest of the regional markets, such as Thailand, Malaysia, Vietnam, Singapore, and the Philippines, trail Indonesia in terms of population, economic development, and per capita income, but their relative rankings are in line with expectations given each country's population, level of economic development, and per capita income in comparison to one another. The Philippines underperforms marginally, owing at least in part to the unique logistical hurdles of delivering e-commerce to over 2,000 populated islands. Singapore, on the other hand,

punches far above its weight due to its high per capita GDP. Philippines and Vietnam are expected to produce slightly more.

Comparative Analysis of Offline vs. Online Business

Business in Southeast Asia since the pandemic has experienced changes in various aspects, especially in transactions (Kovid & Kumar, 2022). Offline transactions are now increasingly abandoned; store operating hours are starting to be limited. This is a big challenge for businesses that only carry out offline transactions, because many people are doing activities at home, even working at home since the call for physical distancing (Kumar& Malhotra, 2021). So, now offline businesses are very difficult to maintain their business if they don't switch to digital. For this reason, business people in Southeast Asia can now choose to market their products online or offline.

Online-based business with the use of e-commerce will further increase the opportunity to reap profits and market share in Southeast Asia, associated with a fairly high data on e-commerce users in the Southeast Asia Region, which reaches 350 million users and continues to grow every day (Damar, 2020). Various business sectors have switched to digital, such as the education, health, supply chain and logistics sectors, all of which have started to leave the offline business because of their lack of effectiveness and less than optimal in gaining market share, especially since there were restrictions on community activities in the midst of a pandemic (Lata & Gupta, 2021).

Determinants of Future E-Commerce and Marketplace in Southeast Asia

In a fast-paced world, everyone is trying hard to keep up. Every field is growing rapidly, including in terms of buying something. Even if the item you want to buy is in another city or even in another country, there's no longer a reason not to be able to buy it, it only takes a few clicks, and anyone can buy anything and from anywhere (Lata & Kumar, 2021b). So, having a physical store today is not a guarantee that you can sell a product quickly, but having an online store seems to be mandatory for businesses today. As an entrepreneur, entering the world of e-commerce is one step towards growing your business and increasing profits. As for those, who have just started a

business, e-commerce is the best choice to get company profits. Whichever position you are in, e-commerce isn't just about selling your products online, it's more than that.

In developed countries, e-commerce is no longer something new, but in developing countries like Indonesia there are still many people who do not understand it very well. Indeed, e-commerce has started to emerge, but it is still very small compared to the existing population. This is why the e-commerce market in Indonesia has great business opportunities. Coupled with the fact that the development of internet and Smartphone usage is also increasingly widespread (Lata & Kumar, 2021c), it is clear that it is not a bad choice to enter the world of e-commerce.

The determinants of the success of e-commerce in Southeast Asia are:

(1) *Price regulation:* The products being sold are definitely not the only ones on the market, there are other products that are certainly similar. It is natural for customers to compare prices between one product and another. Business people should often check the market price for the similar products you sell. Many strategies are used so that the products sold can be more saleable than others, ranging from discounts or other offers. Sometimes, customers are looking for the cheapest product among others. However, you should never advertise your product or provide information that the product being sold is the cheapest because it is not impossible that cheap is usually synonymous with poor quality goods. That doesn't mean you have to give the highest price either, set the price according to the product being sold, not too low but also not too high or affordable.

(2) *Product quality:* There is one drawback of e-commerce, when someone buys a product online, usually they will not easily believe it, they are afraid that the goods received will be of poor quality unlike what is stated in the image description. Compared to if someone bought a product in a physical store, they would immediately know the quality of the goods. Convincing customers that the products sold are of good quality is a challenge in itself. It's very difficult to win customers' trust, especially if it's their first time buying, that's why businesses need to establish consistent product quality standards (Lata & Kumar, 2021a). If you send a second quality item and it doesn't match the description added on the site, it is certain that the customer will not trust the store again even though the goods

purchased by the customer can be returned. Customer satisfaction is what you should prioritize. When a customer complains about a product, be sure to deal with it quickly.

(3) *Accessibility of online stores:* Website is one of the means by which you can communicate with customers. So make sure the website is able to provide information quickly. It's also good that the website can be opened properly even through a mobile device. The better the website the more people might see it.

(4) *Good first impressions:* With just a glance, customers are able to determine whether they are starting a website or not. Making a good first impression on your website will bring in lots of customers. Make the design as impressive as possible, not just a plain website. Ask an expert for help if you can't make a website like this. But remember, even if you make a website with the best possible design, make sure the content in it is neatly organized, easy to understand.

(5) *Security* (Lata & Kumar, 2022): One of the fears of someone in online shopping is security issues. When buying something online, they certainly have to provide information such as name, shipping address, phone number, email address, it's not even possible is credit card information. There is always the possibility that the data can be stolen or misused. Businesses must be able to ensure that the identity of the customer is maintained (Kumar& Bhardwaj, 2018), and the delivery of products is safe from ordering until the product is received by the customer.

(6) *Taking advantage of email marketing:* Many problems arise in e-commerce even after a customer orders an item. For example, ignoring goods that have been ordered, not proceeding to payment, or still unsure whether to buy products from or not. When the customer fills in their identity, add an email address form. You can send a message directly to the intended person. For example, if someone ignores their shopping cart, the seller can send a reminder email, or if someone has recently joined a subscriber, the seller can send a welcome email to the consumer. With email, sellers can personally greet them and this of course will increase customer trust, sellers can also provide special offers directly to them. If you get a special offer for the seller, many email marketing providers can help you (Mail Target) in email marketing matters (Mittal & Kumar, 2022).

Prediction of the E-Commerce Growth by 2022

Because Indonesia has the largest e-commerce market in Southeast Asia, this is an intriguing topic to discuss. Indonesia accounts for about half of all transactions in this region. The increased penetration of e-commerce has contributed to the continued increase in population who utilize the internet as a basic requirement after clothing, food, and housing. McKinsey & Company, a management consulting firm, provided study findings on the current state of the e-commerce business in Indonesia and its growth estimates for the next several years. Their conclusions cover a variety of subjects, including the value growth of the Indonesian e-commerce market through 2022, as well as the probable impact of this growth on Indonesia's economic and social landscape. Ecommerce is expected to reach a value of US$65 billion by 2020. (Rp910 trillion). The McKinsey study defines e-commerce as the process of buying and selling physical goods online, which is divided into two categories:

(1) Formal buying and selling through online platforms designed to facilitate transactions, such as Bukalapak and Tokopedia, and
(2) Social commerce, which is the marketing of goods through social media such as Facebook or Instagram with payment and delivery handled by other platforms (Lata & Gupta, 2020). Service firms like GO-JEK and Traveloka, as well as B2B platforms like Indotrading, are not included in this study, according to mckinsey. Even if the service and B2B sectors are excluded, the gross merchandise value of the Indonesian e-commerce market is expected to increase by eight times by 2022.

Indonesia has the fastest growing economy and the largest market in Southeast Asia (Eka, 2019). The digital economy in Indonesia is rapidly expanding; in 2015, the amount was only $8 billion, implying that it has increased by more than fourfold this year. Thailand is the second-largest exporter this year, at $12 billion (Dailysocial, 2021). Along with producers and distributors, consumer buying habits in Indonesia will change. The ease of transacting and selecting things has spurred an increase in the number of online consumers, which is predicted to reach 65 million by 2022, growing at a rate of roughly 25% per year. When compared to offline purchases of similar

products, the rising popularity of internet shopping is likewise linked to cheaper costs. When compared to actual purchases, online customers on the Indonesian island of Java, particularly in urban areas, save 4-14 percent on average. This is because, due to high operational costs, offline goods are more expensive, whereas online shipping costs are lower due to a broad distribution network. As e-commerce grows, consumers in rural and remote areas may be able to benefit across the developing economies (Kumar et al. 2020).

Meanwhile, online shoppers outside of Java, particularly in rural areas, can save between 11 and 25 percent. Due to the high inventory expenses of offline wholesalers, shopping online is substantially less expensive in this instance. Shipping expenses, on the other hand, continue to have a significant impact on the prices of goods sold online; in places outside of Java, such as Palembang and Timika, shipping charges might account for 40-50 percent of the entire cost of a product.

Jakarta, Bandung, Surabaya, and Semarang, Indonesia's four major cities, currently account for more than 70% of all internet transactions in the country. However, a number of recent trends imply that e-commerce can help rural dwellers contribute more to the national and worldwide economies. E-commerce transactions in Papua, North Kalimantan, and North Sulawesi surged about twice as fast as transactions in Jakarta between 2013 and 2017, especially in purchases. This surge has the potential to happen faster as internet penetration and people's purchasing power increase. Overall, rural e-commerce sales climbed 2.5-fold from 2015 to roughly IDR337 million in 2017. Meanwhile, e-commerce purchases grew at a faster rate, increasing fourfold in the same time period to roughly IDR4.9 trillion in 2017. The large number of purchases may indicate that e-commerce has the ability to assist residents of rural areas in purchasing devices that were previously unavailable.

The online business sector in Indonesia is estimated to grow 3.7-fold by 2025. Its value will be US$ 48.3 billion from US$ 13.1 billion in 2018. This growth is driven by increasing people's purchasing power and internet access which has reached cities and towns, small town (Lata & Kumar, 2021c). However, in Southeast Asia, online business revenue growth in Indonesia is not the largest. Vietnam is predicted to experience an increase in income by 6.6 times and Thailand by 4.9 times. The revenues of the two countries will also reach US$ 24.4 billion and US$ 21.4 billion in 2025. Meanwhile, online business is projected to only grow about double in Malaysia and Singapore, becoming the lowest in the region.

After Indonesia, Thailand is the second highest country in internet economy market size data in SEA. There are close to 50 million internet users

in Thailand today, with a whopping 85% of those between ages of 16 and 64 surveyed by GlobalWebIndex[1] that reporting they already do purchase activity online. Despite this high level of usage, internet spending in Thailand is still quite low. In 2018, the average buyer in the country spent only $100 on online consumer goods purchases, compared to a global average of $634. However, with customers' online purchasing increasing by 25% last year, Thailand's e-commerce industry appears to have a bright future. According to Statista (2019), Thailand's online consumer economy was worth approximately US$8.3 billion in 2018, up US$1.6 billion or 25% over 2017. Thais spent US$4.14 billion on e-travel in 2018, accounting for half of the entire amount. However, almost all of Thailand's e-commerce customers also buy consumer items online, according to Statista's Digital Market Outlook survey, which found that 37.5 million Thais spent over US$3.75 billion on consumer goods online in 2018. However, in line with regional trends, Thailand's digital content sector remains modest, with the average e-commerce user spending just over US$1 per year on music downloads and streaming services combined. Although demand for video games is increasing, Thailand's whole digital content sector is still worth less than $400 million per year.

Digital music sales are hardly increasing as well, with Thais spending only 5% more, or US$2 million, in 2018 than in 2017. However, the rest of Thailand's e-commerce market shows a totally different picture, with many categories enjoying yearly growth of more than 25%. According to an Indonesian e-commerce survey, the food and personal care sector is experiencing the highest growth in online sales in Thailand, with sales up 30% in 2018 compared to the previous year. Meanwhile, while accounting for half of Thailand's overall internet economy, tourism was the country's second-fastest-growing e-commerce industry in 2018, with sales up 28% from 2017. Online sales of fashion and beauty products grew at a slower rate of 17% year over year, which could be due in part to Thailand's rich tradition of fashion markets such as Chatuchak weekend market and Platinum Fashion Mall. However, the sector is far from 'struggling,' with Thai customers on course to spend more than US$1 billion on online fashion purchases in 2019.

Lazada is Thailand's most popular e-commerce site. The company's local-language website attracted an average of 44 million monthly views between May and July 2019. The company's mobile app was the most popular shopping app in Thailand during the first three months of the year. However, these rankings are based solely on website visits and app users, and may not

[1] https://datareportal.com/reports/digital-2019-e-commerce-in-thailand/.

accurately indicate market share worth. Shopee's dedicated Thai website got an average of 33 million monthly visits between May and July of this year, making it second in both the website and mobile app rankings. Although it's impossible to distinguish either company's online food and personal care purchases in Thailand, Lazada and Shopee account for a considerable portion of customers' grocery-specific online food and personal care purchases. In recent years, delivery services such as Honestbee and Happy Fresh have had success in Thailand, albeit Honestbee's seeming great performance hasn't been enough to overcome its ongoing issues. Other players appear to see the delivery model's future possibilities as well. According to recent rumors, Line, one of Thailand's most popular social media platforms, is planning to start a grocery delivery service as part of a slew of new shopping-related services in the country before the end of 2019. Traditional grocery brands, on the other hand, appear to be taking longer to succeed online in Thailand, with none of the country's supermarket chains making it to the most-visited transactional websites. That, though, could be about to change. Last month, Tesco Lotus, one of Thailand's major traditional grocery brands, partnered with Shopee to establish a new online shopping site, marking an important step forward in the company's e-commerce operations. Thailand suffers less of the geographical obstacles that Indonesia and the Philippines do, but population dispersion remains an issue, with slightly more than half of the country's population living in rural areas. Thailand's digital infrastructure, on the other hand, is well-established. Almost 70% of the country's population has access to the internet, and according to the statistics below, Thais are among the world's most avid internet users. Overall, Thailand's e-commerce future appears to be bright. According to the research, Thais have already embraced internet buying, and it should only be a matter of time before this translates into higher value.

According to Datareportal (2019), Vietnam today has 59 million internet users, with 78 percent of those aged 16 to 64 having made an online transaction[2]. Vietnamese e-commerce shoppers are considerably more numerous. According to Statista's Digital Market Outlook (2019), about 50 million Vietnamese citizens bought consumer items online in 2018, paying a total of USD $2.2 billion. However, the average e-commerce revenue per user is still low. Over the course of the past year, Vietnamese buyers spent an average of just US$46 on consumer items, excluding travel and digital media expenditures. The good news is that online spending in Vietnam grew

[2] https://datareportal.com/reports/digital-2019-e-commerce-in-vietnam/.

significantly in 2018, with the value of online consumer goods transactions growing by about 30% over 2017.

In 2018, Vietnamese consumers spent about $6 billion on internet goods, more than $1 billion more than the previous year. Travel purchases accounted for 59% of total spending, with the e-travel sector in Vietnam worth close to US$3.5 billion in 2018. Consumer items, on the other hand, accounted for 38 percent of the country's e-commerce value in 2018, with sales of electronics, clothes, toys, and groceries totaling more than US$2.2 billion. Electronics purchases make for the largest percentage of value in the consumer goods industry, however fashion and cosmetic products aren't far behind. However, according to Statista's DMO data, Vietnamese internet users are less likely to pay for digital material, with the digital music sector being particularly poor. Last year, Vietnamese individuals spent only US$21 million on music downloads and streaming services, amounting to slightly over US$1 in income per user.

However, Vietnam's online economy is booming, with the whole market value expanding by more than 20% last year. Given its size, it's not unexpected that the travel industry is growing more slowly than the rest of the economy, with revenues increasing only 16 percent in 2018 compared to 2017. The value of consumer goods purchases, on the other hand, increased by 29% year on year, with the Food & Personal Care and Toys, Hobbies & DIY categories both experiencing growth rates of above 30%, according to datareportal (2019).

Furthermore, according to Statista (2019), Vietnam is one of the top three fastest-growing online grocery markets in the world, with a 38 percent increase in category sales value between 2017 and 2018. This isn't simply fantastic news for online food businesses in the United States. Many individuals in Vietnam buy for groceries on a regular basis, and as more of this activity goes online, shoppers are becoming more comfortable with the process. This increasing familiarity should promote higher confidence in online purchasing as a whole, which might lead to increased e-commerce activity across all categories if these regular grocery experiences continue favorable. Shopee and Lazada dominate the e-commerce sector in Vietnam, as they do in most other Southeast Asian countries. Between June and August 2019, Shopee's Vietnamese website received an average of 34 million monthly visits, compared to around 24 million monthly visits for Lazada's local site. Meanwhile, Tiki.vn, a local platform, is in the top three ranks for both website traffic and mobile web use, with an average of 27 million monthly visits over the past three months. The Amazon global offerings

appear in both the mobile app and website ranks, with 3 million more than Lazada's local site. Surprisingly, it appears that Vietnamese customers' platform choices differ based on the device they are using. Although Adayroi is one of Vietnam's top five mobile shopping apps, the company's website does not rank among the country's top ten transactional websites according to SimilarWeb. Local players thegioididong.com, chotot.com, and dienmay-xanh.com, on the other hand, all rank among the country's top transactional websites but do not show in App Annie's top mobile shopping applications. Food and personal care items accounted for the smallest part of Vietnam's online consumer goods market in 2018, according to the data below, but sales are expanding at a rate of close to 40% every year, which may change datareportal (2019).

IGD Asia, a grocery research firm, predicts even faster growth for the country's online grocery business, with projections indicating that expenditure will double every year between 2017 and 2022 datareportal (2019). Despite this excellent rise, online shopping will remain a minor part of Vietnam's total grocery sector, with IGD Asia predicting that e-commerce will account for less than 0.5 percent of total category spending by 2022. However, this low foundation means that there is lots of room for further significant development over the next decade, which may give retailers researching the Vietnamese market reason to be optimistic. For comparison, the US$348 million spent on online food by Vietnamese e-commerce buyers in 2018 represented around 0.6 percent of the country's entire grocery market of US$63 billion, according to datareportal (2019).

Both App Annie's (2019) and SimilarWeb's (2019) current rankings of e-commerce players in the country place Shopee at the top, but it's unclear how much of the platform's revenue originates from food transactions. Tiki.vn and Lazada, which are ranked second and third in both rankings, have a similar scenario (although they swap places between the lists). Both sites sell a variety of groceries, but it's unclear how much these things contribute to either site's total profitability.

According to SimilarWeb (2019), online supermarkets Lotte and BáchHoá XANH each receive over 1 million monthly visits, while Now.vna, a food delivery service that also sells groceries, receives around 3.5 million monthly visits. Meanwhile, App Annie lists Lotte's mobile app among the top ten shopping apps in Vietnam, which is significant for the country's online grocery market. All of these statistics hint to an increasing interest in online grocery shopping in Vietnam, even if that enthusiasm hasn't yet translated into large sales. According to the United Nations, only around a third of the

country's population lives in cities, with the remainder of the people being distributed over rural areas. This demographic dispersion may make scaling fast delivery across the country more difficult and expensive, which could have special implications for Vietnam's online grocery market.

Payments are a key factor in Vietnam, as they are in many of the other SEA countries in this series, with the country having some of the lowest levels of credit card adoption in the global economy.

In today's Vietnam, only about 1 in every 25 adults aged 15 and above has a credit card, and less than 1 in every 3 has a bank account. People in Vietnam, meanwhile, have been quicker to use mobile wallets, following a trend seen in several of the country's Southeast Asian neighbors. According to data from GlobalWebIndex[3], about 40% of internet users in Vietnam utilize a mobile payment service on a monthly basis, putting the country ahead of the global average. According to current trends, Vietnam's e-commerce market is expected to grow significantly in the next months. However, given the country's small starting point, there is still a long way to go before internet shopping accounts for a significant portion of total consumer expenditure in Vietnam. Another research by data reportal (2019) shows the Philippines is home to more than 69 million internet users, while three quarters of these users aged between 16 and 64 already shop online.

Despite these high penetration rates, the Philippines' e-commerce sector is still modest, according to Statista's Digital Market Outlook (2019) survey, which found that the Philippines has the lowest average income per e-commerce user of any country. In 2018, the average Filipino e-commerce shopper spent just US$18 on online consumer goods purchases, albeit this statistic does not include travel-related purchases or digital media spending. The good news is that the Philippines' internet economy grew by double digits in 2018, and eMarketer (2019) believes that the country will have some of the world's fastest growth in 2019. Despite having the region's second-largest population, the Philippines has the weakest internet economy of the six key marketplaces in Southeast Asia. According to Statista (2019), Filipinos spent a total of US$4.7 billion on online purchases in 2018, with US$3.5 billion of that amount going to online travel purchases. In 2018, online consumer goods transactions totaled only US$840 million, with gadgets and physical media accounting for the majority of this total. The Philippines' digital media sector is relatively modest, with internet users spending just US$286 million on video games, video-on-demand services like Netflix, digital music streaming and

[3] https://datareportal.com/reports/digital-2019-e-commerce-in-vietnam/.

downloads, and digital news and magazine subscriptions. Digital music is one of the most challenging sectors in the Philippines' online economy, with just 11 percent of the country's population paying for downloads or streaming services in 2018, compared to a regional average of 17 percent.

According to Statista (2019), the Philippines' e-commerce expenditure grew more slowly than the rest of Southeast Asia in 2018, but it still beat the global average. Last year, the country's overall internet spending increased by 16 percent, compared to a regional average of 21% but a global average of 13%. In Statista's DMO research (2019), the Philippines' online travel sector expanded at the slowest rate across the major e-commerce sectors, however it nevertheless increased by 15% in 2018. The consumer goods industry, on the other hand, developed at a far greater rate. Overall, online consumer goods spending increased by 22% year over year, with all sectors except Fashion & Beauty seeing yearly growth of more than 20%. The Food & Personal Care category, as demonstrated in this series of studies on e-commerce in Southeast Asia, witnessed the highest growth in the Philippines last year, with online grocery spending rising by 29% compared to 2017.

It's worth mentioning, though, that eMarketer (2019) has a different view on e-commerce in the Philippines, expecting 31 percent annual increase in retail e-commerce sales in 2019. This places the Philippines in third position on the business's list of the world's fastest-growing e-commerce markets this year, well ahead of the global growth rate of 21% predicted by the company. IGD Asia, a retail consulting firm, is even more optimistic, predicting that the Philippines will have the highest online grocery growth of any country in AsiaPacific between 2017 and 2022. We'll take a closer look at the category in a separate part later in this piece, given the constancy of remarkable results for the country's online grocery prospects. According to the most recent data from SimilarWeb and App Annie (2019), Lazada and Shopee lead the Philippine e-commerce scene, despite the fact that the figures are based on website visits and mobile app users rather than real revenues. According to SimilarWeb (2019), between May and July, Lazada's native Philippines website received an average of 26.5 million monthly views, compared to 16 million monthly visits for Shopee's Philippines website over the same period. Amazon does well in the Philippines, with its worldwide/US app ranking fourth in the country's mobile shopping app rankings and third in the country's transactional website rankings. Filipinos' buying habits, on the other hand, tend to vary significantly depending on the gadget they're using. Fashion is a prominent choice for mobile consumers, according to App Annie's assessment of the country's top shopping applications, with regional fashion portal Zalora

ranking as the third most-used app in the Philippines during the first three months of 2019. (App Annie, 2019). Beauty is another popular sector among mobile consumers, with both local platform BeautyMNL and worldwide giant Sephora placing among the top 10 mobile shopping apps in the country.

However, none of these fashion or beauty businesses make the top ten of SimilarWeb's ranking of the country's biggest transactional websites, which offers a slightly different tale. Instead, when it comes to web-based e-commerce in the Philippines, electronics appear to be king, with Microsoft and Samsung's sites ranking among the top transactional websites. It's also worth noting that Scribd.com is included in SimilarWeb's list of top transactional websites (SimilarWeb, 2019). The market for paid digital content in the Philippines is still modest, but the existence of an e-book platform among the country's top sites implies that there is no shortage of demand for digital content.

Food and personal care products make for the smallest share of online consumer goods spend in the Philippines, with the country's online grocery industry valued at just US$127 million in 2018. This follows a trend we've seen in other Southeast Asian countries in this series. That means that online grocery only contributed for 0.2 percent of the country's entire grocery market (online and offline) in 2018, which was valued at US$53 billion by IGD Asia. However, in the Philippines, online food shopping is gaining traction, with Statista reporting that the country's online grocery sector is among the fastest-growing in the world.

The Philippines is expected to have the greatest growth in online grocery spending in APAC over the next five years, with a CAGR of about 150 percent between 2017 and 2022, according to the business. Despite these promising developments, IGD projects that by 2022, internet shopping will only account for 1% of total food spending in the Philippines. Lazada and Shopee dominate the Philippine e-commerce market, and with both platforms offering grocery items, both companies are likely to have a significant part of the country's online grocery spend. However, according to statistics from SimilarWeb, online grocery delivery services have struggled to acquire traction in the Philippines. According to the newest data, only one grocery-focused website, Honestbee, received over 100,000 monthly visitors in the Philippines between May and July 2019, with some of the country's biggest brands still battling to reach 50,000 monthly visits (SimilarWeb, 2019).

Many of the same infrastructural obstacles faced the Philippines as Indonesia, and it's likely that these issues have hampered the country's e-commerce growth to date, particularly in the food industry. Geography is a

very difficult subject. The Philippines has almost 2,000 inhabited islands, making it impossible for any online food store to provide a statewide service. Furthermore, distributing fresh fruit across the country's varied and often tough terrain, particularly in the tropical climate, is no easy undertaking. Payments may also be a major impediment to e-commerce growth in the Philippines, where the World Bank estimates that only one in every 50 Filipinos holds a credit card. Credit card penetration is significantly lower among women, at only 1.4 percent, or one woman in every 70. This is especially important in the grocery industry. In 2017, the Philippines has one of the lowest rates of bank account ownership among the world's top economies, with only one out of every three Filipinos having a bank account. In the Philippines, however, mobile payments are more popular, with GlobalWebIndex claiming that 4 out of 10 internet users utilize a mobile wallet service. With research from GlobalWebIndex indicating that Filipinos are becoming more comfortable making purchases online, e-commerce spending in the Philippines is expected to expand steadily in the coming years. However, logistical issues will continue to stifle growth, and given the Philippines' current small internet industry, it may be years before e-commerce accounts for a significant portion of the country's overall retail spend[4].

The next country is Malaysia, which has over 26 million internet users and is continually growing, and statistics from GlobalWebIndex[5] shows that 80% of users aged 16 to 64 are already shopping online in the Philippines. Malaysians spend far more on online purchases than many of their Southeast Asian neighbors, yet the country's average e-commerce revenue per user (ARPU) is still less than a quarter of the global average. Malaysians' e-commerce spending increased by 24% last year, and with the country's government making the growth of the online economy a national priority, online shopping is anticipated to continue to rise strongly in the future years. According to Statista's Digital Market Outlook report, Malaysians spent more than US$6 billion online in 2018, with consumer goods sales already outnumbering travel spending. In 2018, the online consumer products category in Malaysia was worth US$3.1 billion, accounting for 51% of overall e-commerce spending. Electronic purchases contributed the most to overall consumer goods consumption, accounting for 27% of total spending. Fashion and beauty products were not far behind, accounting for a quarter of the overall

[4] https://datareportal.com/reports/digital-2019-e-commerce-in-the-philippines/.
[5] https://datareportal.com/reports/digital-2019-e-commerce-in-the-philippines/.

online consumer goods industry with yearly spending of US$771 million. However, in 2018, the average Malaysian e-commerce buyer spent only $159 on online consumer goods transactions, compared to a global average of $634. However, travel purchases remain a significant part of Malaysia's online economy, with internet users spending more than US$2.7 billion on online travel purchases in 2018, according to Statista (2019).

In Malaysia, however, the market for digital material remains tiny, as it is in other Southeast Asian countries. Malaysians spent $236 million on video games, digital music, video on demand services (such as Netflix), and digital news and periodicals in the previous year. Although Malaysians are the second largest per capita spenders on digital music in the region, after Singapore, digital music accounted for only $30 million of that total. It's also worth noting that Scribd.com ranks among Malaysia's top 10 transactional websites by total monthly visits on SimilarWeb, implying that the country's internet users are already accustomed to consuming digital content (SimilarWeb, 2019).

Overall, Malaysia's e-commerce business is thriving, with Statista (2019) statistics indicating that total spending across all sectors increased by 24% last year. The travel industry expanded by a more moderate 18 percent, but it was still enough to add $400 million to spending in comparison to 2017. Despite accounting for more than half of the country's e-commerce business, the online consumer products market developed at a significantly faster rate. Clothing, electronics, toys, furniture, and food all saw a 30 percent increase in online sales in 2018, totaling more than US$730 million more than in 2017. Within the consumer products category, every industry increased by at least 25% year over year, with three sectors increasing by more than 30% in just a year. The country's online grocery business is expanding the fastest, mirroring a trend we've seen across Southeast Asia, with yearly purchase value jumping by an astonishing 39 percent in 2018. Malaysia is ranked second in Statista's ranking of the world's fastest growing grocery markets in 2018, with only Singapore showing a bigger year-on-year gain.

This isn't only excellent news for online grocers in the country. Food and personal care goods are among the most often purchased items, and as a growing percentage of this activity moves online, buyers are becoming more comfortable with the process. This increasing familiarity should promote higher confidence in online purchasing as a whole, which might lead to increased e-commerce activity across all categories if these regular grocery experiences continue favorable. Given the potential importance of the grocery category for Malaysia's e-commerce business as a whole, it's worth digging more into the country's online grocery market.

Malaysians spent $483 million on online grocery shopping in 2018, up $135 million from the previous year. In 2018, online shopping contributed for 2.3 percent of Malaysia's overall grocery market of US$21 billion (factoring both online and offline sales). According to eMarketer (2019), this could indicate that Malaysia is already ahead of the United States in terms of moving grocery spending online. However, research firm IGD anticipates that in 2022, online shopping will account for nearly the same percentage of total grocery spending in Malaysia, indicating that there are still considerable discrepancies in estimations and forecasts for the value of the online grocery market in Malaysia. Despite these inconsistencies, the general picture appears to be consistent: Malaysia's online grocery spending will continue to expand rapidly in the coming years. According to IGD Asia, the value of online sales would climb at a CAGR of more than 60% between 2017 and 2022, compared to a CAGR of 4.1 percent for the grocery market as a whole between 2018 and 2023.

Malaysia's internet economy is diverse, with local, regional, and international brands. Shopee and Lazada dominate the general e-commerce market in Malaysia, mirroring a pattern we've observed in other Southeast Asian countries. According to SimilarWeb data, Shopee's Malaysian site is the most popular in terms of overall monthly traffic, with an average of more than 22 million visits each month (SimilarWeb, 2019). However, Lazada isn't far behind Shopee in the SimilarWeb rankings, with an average of 21 million monthly visitors to the company's local Malaysian website between May and July 2019. In App Annie's rating of Malaysia's top mobile shopping applications for 2019, the story is reversed, with Lazada garnering more active users than Shopee in the first three months of 2019.

Furthermore, considering that Malaysian internet users are substantially more likely to purchase via a mobile device than a PC (62 percent vs. 37 percent), the mobile app rankings may be more indicative.

It's worth noting that Taobao's mobile app does particularly well in Malaysia, implying that Malaysians who understand Mandarin are passionate online buyers. Korean items, on the other hand, appear to be popular in Malaysia, with 11Street's mobile app rating fourth on App Annie (AppAnnie, 2019). The Fashion & Beauty category is also a popular choice among Malaysian mobile consumers, with prominent regional fashion site Zalora ranking in the top ten on App Annie. Malaysian online buyers, on the other hand, have some distinct interests and habits. Samsung is ranked third in SimilarWeb's website rankings, yet it's unknown what percentage of visitors to the site actually buy something (as opposed to merely looking for product

information and company news). Microsoft.com is also among Malaysia's top ten e-commerce sites, confirming the fact that electronics account for the majority of the country's online consumer goods purchasing. Mudah.my, a local marketplace, is also a Malaysian favorite, with SimilarWeb indicating that the site received over 10 million monthly views between May and July 2019. Travel websites are also a popular online destination in Malaysia, with AirAsia.com and Agoda.com being among the country's top ten most-visited websites according to SimilarWeb. Taobao and Amazon both rank in the top 10 on SimilarWeb's list of international shopping platforms (SimilarWeb, 2019).

Although Shopee and Lazada dominate Malaysia's e-commerce market, it's unclear how much of each company's revenue is attributed to grocery purchases. When compared to other specialized grocery players in the country, Tesco's website receives the most monthly views, although data from SimilarWeb reveals that the site's traffic is still rather low, with fewer than half a million visits per month (SimilarWeb, 2019). Compatriots in the brick-and-mortar world Jaya Grocer and Mydin also have a moderate internet presence, with each brand's website receiving over 100,000 monthly hits. However, given that approximately 20 million Malaysians already buy consumer items online, these traffic numbers appear to be relatively low, especially given the average frequency of food purchases, according to Statista (Statista, 2019).

It's also worth noting that a number of Malaysia's biggest brick-and-mortar companies still don't offer dedicated online shopping in the nation, instead opting to collaborate with HappyFresh to transport things from their physical stores to customers' homes. Indeed, the websites of two of the country's largest grocery chains, Cold Storage and Giant, both link potential customers to HappyFresh's website. In recent months, a number of specialty online grocers have entered the Malaysian market, offering organic products among other things. Some of these sites have already found traction, with data from SimilarWeb indicating that one of them, Signature Market, receives over 100,000 monthly visits on average (SimilarWeb, 2019).

Malaysia's e-commerce growth will be particularly high in the following years, according to eMarekter's (2019) estimate that the country would be among the top five fastest growing e-commerce markets in 2020. There are also more impediments to e-commerce growth in Malaysia than in many other Southeast Asian countries, however with the Malaysian government declaring the e-commerce sector a national priority, the country's future e-commerce prospects appear promising. The last country in SEA to be analysed is

Singapore. Almost 5 million people in Singapore use the internet today, it is 85 percent of the total population of Singapore and almost three quarters of users are between 16 to 64[6].

In 2018, Singaporean e-commerce customers spent an average of more than US$1,000 on online consumer goods purchases, well exceeding the global average of US$634. The e-commerce industry in Singapore is also booming, with total online spending increasing by more than 20% last year.

According to Statista (2019), Singaporeans spent about US$8 billion online in 2018, amounting to a per-capita spend of more than US$1,300, nearly four times the global average. The majority of Singaporeans' online purchases are for consumer items. In 2018, consumers in the country spent more than US$4.1 billion on clothing, electronics, groceries, furniture, and toys, accounting for 52 percent of total online spending. Electronics & Physical Media narrowly beat out Fashion & Beauty for the largest proportion of the consumer goods market. Food and personal care items accounted for the smallest share of consumer goods spending, but that is expected to change in the following months, as we'll see below. Aside from consumer items, travel purchases account for 46% of Singapore's online economy, with total spending exceeding US$3.6 billion in 2018. Despite spending only US$26 million on digital music last year, Singapore has the largest per capita spend of any Southeast Asian country, with the average music shopper in the city state spending more than $14 on downloads and music streaming services.

Singapore's online economy rose by 21% in 2018, with growth varying significantly across different areas of the country's online economy. Travel grew the slowest, with internet sales increasing by less than 8% over 2017. Consumer goods purchases, on the other hand, had a very different narrative, with the industry as a whole up 35 percent. Despite consumer products accounting for more than half of Singapore's total online spend, the highest increase of any country in Southeast Asia. Every sub-category in the consumer goods sector showed a 30 percent growth, with two exceptions: Toys, Hobbies, and DIY and Food & Personal Care. It grew at a rate of more than 40%. The latter is noteworthy in that Singapore's online grocery business is developing at a higher rate than any other country on the planet. According to Statista (2019), online purchases of food and personal care products in Singapore increased by 47 percent in 2018, more than three times the global average of 15% growth.

[6] https://datareportal.com/reports/ digital-2019-e-commerce-in-singapore/.

Singapore's online consumers appear to favor various platforms depending on the device they're using. Because e-commerce users in the country are significantly more inclined to shop on their phones than on their PCs, let's start with App Annie's rating of the country's most popular mobile shopping apps (AppAnnie, 2019). Both Lazada and Shopee are popular in Singapore, ranking #1 and third in App Annie's app rankings, respectively. Qoo10, another Singapore-based e-commerce company with strong traction in the city-state, separates them. Taobao, a Chinese platform, is ranked fourth, while ezbuy, a Singapore-based platform, is ranked fifth. Singapore's mobile shoppers are also fashion-forward, with regional favorite Zalora coming in sixth and global heavyweight ASOS coming in tenth. It's also worth noting that Amazon features twice in the top 10 mobile shopping apps in Singapore. App Annie ranks the company's worldwide/US app eighth, while its local, grocery-focused Amazon Prime Now app ranks ninth. The position of Amazon's apps on the list is particularly significant. Singaporeans, on the other hand, tend to have diverse preferences when it comes to online buying. Singapore is the only country in Southeast Asia where a local platform does not rank first in SimilarWeb's top transactional websites ranking. Despite the fact that Singapore is home to the region's two major e-commerce businesses, Lazada and Shopee, worldwide behemoth Amazon topped the list of sites generating the most web traffic. Lazada is ranked second in SimilarWeb's rankings, with its Singapore-specific site generating an average of more than 7.6 million monthly visits. Qoo10 is in third place in the rankings, but it is only a hair behind Lazada with 7.4 million monthly website views. According to SimilarWeb's data, local social commerce network Carousell ranks fourth, accounting for about one-third of the platform's total global traffic. Microsoft.com, Apple.com, and Samsung.com all make the top 10 transactional websites in Singapore, though it's unknown how many of these sites' users actually buy stuff from them. Both Taobao and AliExpress are among the top 10 most-visited transactional websites in Singapore, indicating that Chinese e-commerce platforms are gaining traction. Surprisingly, Shopee only ranks ninth in SimilarWeb's website rankings, implying that the platform's users prefer its mobile app to its website (SimilarWeb, 2019).

Because online grocery retail is growing so swiftly in Singapore it's interesting looking at the market's major players. Both Lazada and Shopee are likely to have a significant portion of Singapore's online grocery market, but it's unknown how much of each platform's entire revenue comes from food. However, Amazon's local, grocery-focused app, Prime Now, is among the top 10 mobile shopping applications in the country, indicating that the sector is

obviously gaining traction. Fairprice ranks first among traditional grocery merchants in terms of online success as evaluated by website traffic, according to SimilarWeb. Between May and July 2018, the brick-and-mortar supermarket company received an average of 1.3 million monthly website visits, approximately five times more than its closest competitor, Cold Storage. These figures, however, show that Singapore has a long way to go before online grocery buying becomes commonplace. To put things in perspective, more than 3.5 million Singaporeans already shop online, and with the majority of people buying groceries at least once every two weeks (via any channel), the numbers suggest that only a small percentage of the country's e-commerce users have embraced regular online grocery shopping. This could be due to the fact that Singaporeans are rarely more than a few minutes away from a physical grocery or convenience store, meaning that internet shopping does not yet provide the same convenience as it does in nations such as the United States. This could be one of the reasons why Honestbee, Singapore's top grocery retailer, is still struggling, and why Amazon's Prime Now service hasn't garnered the traction that many analysts projected prior to the US giant's debut in the city-state. However, the significant rise seen in Statista's data indicates that online groceries will grow rapidly in Singapore in the future years (Statista, 2019). Statista's statistics isn't the only thing that points to a bright future. Singaporeans have embraced online grocery shopping more swiftly than their Southeast-Asian neighbors, according to a 2018 survey by IGD Research (2019), and the business predicts that e-commerce will account for around 8% of Singapore's entire food industry by 2022. IGD Asia, on the other hand, is less optimistic about annual growth than Statista, projecting a compound annual growth rate (CAGR) of 25% in Singapore's online grocery sector between 2017 and 2022. However, this is still much quicker growth than the 17 to 18 percent predicted by eMarketer for the United States over the same time period, so e-commerce businesses have cause to be hopeful about the future of online groceries in Singapore.

There's plenty of data to suggest that e-commerce has a bright future in Singapore, given the country's strong e-commerce adoption and the fact that total sales value is currently expanding at a rate of more than 20% per year. The main drawback may be Singapore's small size, but this presents a unique opportunity for e-commerce operators, as it serves as a perfect test bed for new e-commerce efforts that can then be extended out across Southeast Asia and beyond.

Conclusion

Southeast Asia has emerged as a strategic e-commerce marketplace. Which offers opportunity not only to the local entrepreneurs, but also the global players. Indonesia's contributes up to 50% of all transactions in the SEA region. The most internet users, the pattern of society in shopping, the level of consumptiveness of the people and the amount of time spent surfing in the digital world are the largest. Followed by a country that is famous for its cosmetic and fashion products, namely Thailand. Next with a smaller percentage, namely Vietnam Philippines Malaysia Singapore. The E-Commerce that has the most market share in the six SEA countries is Shopee because Shopee has a strategic position in the SEA state compared to other E-Commerce such as amazon, etc. The SEA community is more likely to choose a shopping platform based in their area because it is considered more profitable for both consumers and sellers.

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Chapter 7

Futuristic Scope of E-Agribusiness in the Indian Market: A Paradigm Shift

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Abstract

Agriculture has already paved its way towards a paradigm shift with the induced agri-business platforms, which ultimately transforms agriculture into Agri businesses. There has been noteworthy adoption history as well with regard to the quick assimilation of novel technologies specifically cost-efficient technologies. Considering the highly fragmented supply chain in agriculture, bulky volume trading, homogeneity in production, agriculture and its related business activities can be a great prospect for the e-commerce business platform in near future. The Internet has highly impacted the lives of people by introduction of cost-efficient technologies and also expanding the market manifolds. This chapter is an attempt to understand the futuristic scope of the e-agribusinesses in India and how e-commerce platform's scope, prospects & challenges can be addressed for Agri businesses in India, as it's still in its infancy stage for agriculture and allied sectors.

Keywords: e-agriculture, futuristic agribusiness, e-commerce in agriculture, e-business and e-marketing

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Introduction

The success pertaining to the internet transformation in the country is imperative from the examples in all the sectors of the economy, be it banking, hospitality, tourism, recreation & leisure and what not and this as a whole has impacted socio-economic scene in India (Mittal & Kumar, 2018; Lata & Kumar, 2021a). This is also evident and an undeniable fact the number of users of internet has grown millions as compared to the number of users from the last decade, making India the second largest market of internet users of even more than 658 million.

India has been a market leader when it comes to agriculture produce and now the gradual shift of agriculture into agri-business has been a proven ladder for the futuristic technologies to target this particular sector (Gupta et al., 2019). The Asian Development Bank (ADB) has also forecasted India's GDP growth to moderate to 7.5% in 2022-23 despite of all the situations created due to post-pandemic era and the geo-political turbulences globally. The dependence on internet, social media platforms, the dot com market inducement, the digital inclusion of almost half of the population has made a huge market for all the businesses whose verticals are majorly reliant on e-business (Lata & Kumar, 2021c). Even today, with almost two-third population directly or indirectly dependent on agriculture & allied sectors, the production efficiencies of the produce pertaining to agriculture needs to be strengthened and improved multifold, considering the ever-rising population growth of the country. The intensifying need of vivacious, vigorous and ingenious approach, for achieving this needed growth, can be solved by putting efforts, more or less dependent upon development of new technologies, which might be a section of the new innovations in the IT, Internet and Advanced technologies of business (Zhu et al., 2021; Lata & Kumar, 2021b).

The Central and state governments are also forming & planning a number of strategies to reinforce the advancement and transformation of existing technologies in order to produce more with the given resources and time, so that future market-oriented policies can be induced so that agriculture commercialization can be promoted and allowed to bloom, for an upgraded economic growth (Zeng et al., 2017). Few of the aforesaid policies include:

1. Infotainment websites to make know-how related to agriculture & allied sectors to masses and make these easily accessible packed with

the entire database related to sowing, growing, harvesting and storing various agriculture commodities.
2. The integrated network of the meteorological departments starting from the block level, to district, to clusters, to states and to central (national) level through inducement of websites and apps, describing usage of this weather information, soil conditions needed by farmers.
3. The publishing of information related to daily, average, monthly, yearly prices of certain Agri commodities, including the import-export prices as well, on portals, apps & other platforms.
4. Gyan-Choupals program to support rural farm-force for dissemination of timely information and knowledge with the farmers.
5. Networking through various social media platforms between the stakeholders of the sector.

The direct effect of these strategies is the capability of the agricultural stakeholders to interact, gather, examine and use this information to comprehend market indications and retort to it appropriately. Initial step is to extemporize the available information system in all its diverse chapters that is from the gathering of product price in numerous crucial market places, examining the information that is expected and finally diffusion of the information to farmers. The second step is the precise application of the offered price information on marketplace so that there will be a better-quality manufacture choice and intellectual selling on produce (Sinha et al., 2018).

A cumulative number of agribusinesses are beholding the Social Media platform including Internet as a marketing, service, management and direction instrument. As a commercial instrument, the new technologies have proven to be a high-prospect concept for several entities and companies. Online Presence has become imperative and now is treated as a necessity not leisure (Kumar & Ayodeji, 2021; Lata & Gupta, 2020). Objectives are communicated as harvesting more customers, enlargement of public cognizance of the products, promoting tactical or policy-related spots, and vending more goods. The actual dimension of e-Business can be puzzling, as both the players' side of the market may observe many hindrances to efficacious e-Businesses, e-Marketing, or e-Commerce (Bharadwaj et al., 2007). In order to magnificently nurture the online bazaar segment, companies are bound to project marketing tactics unambiguously for the dot com marketplace (Mittal & Kumar, 2022). Historical evidence specifies building new market models based on swiftly shifting know-hows is not anything new. Consequently, the determination is

to associate traditional business and E-Business models along with assimilated policies based on the existing writings and industry deliberations.

Presently, maximum of the elements of e-Agribusiness have been around in preparation for years, making its existence a rare but effective implementation in the framework of swift technological modification with the terms like e-Business, e-Marketing, e-Commerce and e-Agribusiness are subsets of e-Business (Rao, 2003).

Proven Market Development Approaches Being Followed in E-Agribusiness

This is an undeniable fact that in the agriculture and allied sectors scenario, the E-Commerce business is yet to create a significant impact, though the dot com era has greatly and visibly impacted and empowered the Global business supply chain, fostering a network of sellers and buyers all over the world, in just a few clicks over a few seconds (Kumar & Ayodeji, 2020). Now is the time, when anyone wants to buy anything from anywhere in the world, they can buy it, all thanks to the magic created by the e-business platforms, the Search Engine Optimization, the social media recommendations and the global digital marketplace (Kumar et al., 2020). The following are the instances of such impact:

- *The big Sharks of e-commerce getting into grocery market:* The world leaders of e-commerce including Amazon, Alibaba, Flipkart, Walmart etc, have now introduced their own e-grocery delivery service throughout the world like AmazonFresh along with some Indian players in the market like BigBasket, Grofers, JioMart, etc. Amazon has acquired whole foods and Alibaba is launching hema supermarkets in China to enhance their impact in online grocery Marketplace (Montealegre et al., 2007; Kumar et al., 2020).
- *The infusion of Offline to Online:* A number of e-commerce Giants, who were not willing to go online pre-pandemic era, have now made their online business verticals as one of the crucial pillars of their businesses. Many supermarkets have or are in the plan to launch their own e-delivery services including EasyDay in small cities in India. The traditional brick and mortar retailers are also launching there multi-channel business supply chains, considering this as a great

investment for the growth of their businesses (Wei et al., 2020).The offline grocery stores are also promoting the e-membership to offer pickup and drop services for their regular clients.

- *The emergence of only online e- agribusiness:* There has been a tremendous growth in the development of applications and IoT based agribusinesses in the last 3 years, undoubtedly (Lata & Kumar, 2021b). The power of the internet has empowered the existence of and the sustenance of only online Agri-Businesses.
- *A New startup Era:* We are witnessing quite a business transformation era in terms of the unprecedented growth of the startups in agri businesses specifically focused with online verticals. The state and the central governments have been launching a numerous policies in order to strengthen and support such startups post covid era, especially boosting the e-marketplace in agribusiness (Lata & Gupta, 2020).

Evolution and Need for E-Business in Agribusiness Sector

The e-Commerce sector has seen unparalleled development since the last decade and the evolution of the e-business has been due to the adoption led by the increasing use of devices such as smartphones and tablets, and access to the internet, parallel e-business verticals, no-touch technologies in sale and purchase of products. The following are the major implications and repercussions that show the presence and evolution of e-agribusiness marketplace in India:

- *Mobile operators adding value to Agri e-businesses*
  Mobile operators have been playing a dominant role in the evolving Agri e-commerce space, starting from the foundational level, ranging to increasingly facilitating digital payments (Kumar & Saurah, 2020). Apart from this, the mobile operators also leverage other key assets, such as APIs, investment capital along with divergent supply chain models, leading to the intensification of their footprint in the sector. As mobile operators are progressively partaking in both agriculture and e-commerce segments – by initiation of their own produces and also in collaborative spaces– the developing prospects in Agri e-commerce is a crucial premeditated deliberation. The amalgamation

of operator-led mobile currency services into Agri e-commerce platforms is enhancing mobile money acceptance and practice by meeting the demand for digital expenses. Mobile operators' balance and present associations with clientele could oblige as a platform to inflate services more rapidly for Agri e-commerce corporates and businesses. Also, the Agri e-business can bring profits to operators' core services through rural populace through amended customer gaining and maintenance.

- *Aligning of the Stakeholders to satisfy the Agri e-commerce prospects*
  Agri e-commerce is at a very nascent stage of growth, especially in developing areas of the country; still the marketable prospects and potential social impact are noteworthy. Besides, the state governments and area-specific investors can also tap into this opportunity to get-up-and-go with the growth in the agriculture & allied sectors in order for the betterment of the farmers' livelihoods. The expansion of the Agri e-business ecology needs support of the government ministries and regulators to institute a supporting regulatory atmosphere. Government ministries can promote and upkeep Agri e-businesses by providing information on native farming areas and conducting events to elevate farmer awareness of Agri e-commerce opportunities. The investors and support system including business incubation centers also have a vital part to play in Agri e-commerce businesses with sustainable competitive lead and probability to upscale, by apprehending local marketplace& its undercurrents as well as the level of growth of the main Agri e-business enablers.
- *Adaptable E-Agri business models as a market-fit*
  There is an urgent need to introduce newer, novel and sustainable e Business models in the Agri e-marketplace. There are numerous operational functions related to any business model, specifically in the context of e-agribusiness scenario in India, considering the vivid local markets in the sector. There are some other factors as well which affect the of model for a particular market vis a vis agribusiness and allied sectors for instance the kind of product, the clientele, demand driven economy or not, objectives of the business etc. There can be five levels where these Business models can be clubbed and bifurcated, from one being the least integrated functional level and 5 being the most integrated functional level (Zeng et al., 2017). The businesses where assets are lighter tended to be less capital-intensive

as compared to the where assets are heavy, as they may require more capital intensity. In the context of developing marketplaces, the less capital-intensive businesses have quite noteworthy prospects for farmers and the customers, whereas more capital-intensive businesses tend to empower the Agri e-business Marketplace with respect to better control over significant essentials of their services like quality of the product, design and packaging, customer experience and farmer awareness.

- *Exemplary Move: Traditional agriculture supply chain to Agri e-supply chain ecosystem*
  The existing traditional agriculture value chain has been functional since a very long time, where the farmers sell their produce to the middlemen, which in turn, has to go through numerous intermediaries before landing with the final consumer, thus leaving a very low margin for the farmers. Whereas, the idea behind inducing the novel Agri e-business ecosystem is to streamline the whole supply chain system of the traditional agriculture and to minimize the inadequacies and incompetence of the scattered supply chain system, it is imperative that this new way of business has been very profitable for the farmers wherever it has been introduced, as the farmer is directly connected to the end consumer with multitude of platforms to sell his produce including not just the final consumers but retailers, restaurants etc. (Wei et al., 2020).

Benefits of Agri E-Commerce

The aforesaid revamping of the supply chain in agriculture and allied sectors is the need of the hour with tapping of huge potential of unparalleled yet promising sources of benefits including:

Lesser Wastage

This also goes hand and hand with the United Nation sustainability development goals (SDGs) as it is evident from the fact stated by FAO that one third of the world food produce, gets wasted due to several reasons; majorly on account of post-harvest losses. The online platform may serve as a

powerful tool for the farmers as they will not have to wait or choose while accepting low prices for their produce as now, they have better alternatives and higher paying markets and clients for their produce, does reducing the possibility of maximum post-harvest losses.

Improved Lifestyles due to Rise in Income

As evident from the places that have already adopted the e-Agri business models, there is an enhanced chance of procuring fair prices compared to the traditional agriculture supply chain system, reducing the existence and power of the middlemen. This elimination of the intermediate in the supply chain system will certainly make better and noteworthy changes for the market, which will in turn enhance the revenue for the farmers as well as other producers.

The Impact of Financial Inclusion

The introduction of the digital payments' platforms and mobile money specifically for Agri e-businesses, making the farmers their own bosses with a digital history of transactions, is not only traceable but also making it sure for the farmers that they received their due payments in time. This in future can also lead to new crowd funding platforms era for the farming community worldwide. So, this financial inclusion will certainly make the farmers the game changers unlike traditional middlemen in the formal cash transactions, that are usually delayed.

Enhanced Efficiency and Yield

Once this whole e-marketplace for agribusinesses is well implemented, saving huge amount of time, money and efforts along with reducing the wastage will make the farmers think about enhancing their own productivity and investments for their farm. Now the farmers will not just be worried for the payments for their produce, but will think like businessmen as how to raise their income with given resources and time and also how to consistently provide quality produce to the consumers (Eroglu, 2014).

Beneficial for Other Services

This kind of introduction and implementation of the mobile money and digital as well as financial inclusion will certainly have greater benefits for other services of the whole ecosystem including supply chain logistics, applications and website developers, farmer awareness programs and modules of government, online businesses platforms, mobile operator businesses, etc.

Futuristic Revenue Models of E-Agri Businesses

There will be no dearth of ideas for introducing as many as new & innovative revenue models once the country implements the e-Agri Business scenario in the economy. These new revenue models can be clubbed into 5 sub categories, which are as follows:

Markup Pricing Model

The most reliable and the most adopted revenue model among e-Agri businesses would be markup pricing model. Here the producer that is the farmer just puts a markup for instance, a 10% average markup on its produce as a margin to the price paid to suppliers. This markup pricing may be differentiated as for the needs of the farmers depending upon the market that they are dealing in, the particular agricultural commodity they sell and sometimes even on the market & weather conditions (Fecke et al., 2018).

Commission Pricing Model

The digital platform being used for conducting/performing a digital payment transaction, charge the buyers or sellers depending upon the business a small commission fee ranging from 1-3% on the transaction value, which has been made free for the farmers to attract massive numbers of farmers on to their platforms. So, this commission fee is also a good source of revenue for the Agri E-Commerce business platforms.

Advertising Pricing Model

Placing the products or links of similar or unrelated products on your digital platforms or websites or applications can also be a source of revenue for your business as you can charge the advertised businesses for this kind of advertisement.

Membership Based Pricing Model

This kind of pricing model is in its nascent stage, but still some players like Easy Day of Wal-Mart, Reliance fresh are the early adopters of this pricing model where the companies are offering a membership option for their consumers specifically focused for groceries, if bought online (Kumar & Pradhan, 2016). This enables the ease of shopping for the consumers because when they buy online fresh vegetables and fruits are provided to them with the same day delivery guarantee and at discounted prices if bought online (Sturiale et al., 2017).

Insights Monetization Pricing Model

This is also a form of raising revenue by the e-agribusiness, only if allowed in a region, where these platforms can monetize the insights from their own user's data for third parties. Though, this may take a long time to build sufficient data that can be used to attract third-party companies, still the companies will only be interested, if one has huge-traffic and footprint on their websites or applications, but this kind of revenue must be taken very seriously depending upon existence of stringent legal implications of specific geographical locations and country specific data-protection legal compliances. To avoid this, one must abide by the laws of the country they are operating their businesses in (Lata & Kumar, 2021b).

Challenges

Though the journey of starting an e-business in agriculture and allied sectors seems easy, still it's not a pathway of roses and tulips, as there are possible notable risks involved that one must consider:

Lack of Better Logistics

Agriculture and allied sectors require a well-defined logistics network in order to make the Agri commodities produced reach the final consumers, well in time. If there is any issue in this particular sector, no business will sustain and may have to bear severe losses. So, efficient supply chain, distribution services and effective logistics network is mandatory as if not managed well, can be a huge risk (Wei et al., 2020).

Customer Choice and Preferences

Unlike the other products in the market just like electronics or cloths etc., which are alike in consistency, if from the same brand, the agricultural produce, is based entirely on nature and weather conditions, so it is not necessary that every time the produce will be exactly the same, as it's a gamble of nature (Eroglu, 2014). The Agri commodities produced may vary in size, quality, appearance etc., so some buyers may or may not prefer or accept your produce.

Highly Perishable Products

Agricultural commodities like fresh vegetables and fruits are highly perishable in nature so they may deteriorate in quality very fast. So, without proper & efficient storage and lack of well-equipped transport systems, the whole produce may go to waste. So, before the produce is finally to be sold to the market, one must have an integrated supply chain and storage network along with an already identified market where the buyers may purchase their produce (Mueller and Rolf, 2000).

Dependence on Middlemen

As the e-agri-businesses in India are in infancy stage, so the number of players is very less, who can support the entire online business transactions of the farmers. This means the farmer's dependence on a few middlemen in inevitable, so unless a farmer attains or acquires a visible share in the market,

he still has to rely on these middlemen, which limit the exact sphere of the benefits, that can be availed by the farmers.

The Cash in Hand or Cash on Delivery Payments

Though the Indian Government has put tremendous policies for the adoption of maximum population under financial inclusion, still there is a large chunk of population, that is still dependent upon cash in hand economy. The e-Agri businesses will have to face this risk due to scarcity of well-acquainted market/consumers, with the cashless economy and who trust the digital payment system (Rao, 2003). The fact that the operational costs of the e-Agri business will certainly enhance if more cash on delivery payments are accepted, makes it a major risk.

Conclusion

India being an agrarian economy, there is a bright future when it comes to adoption of these futuristic technologies in agri-business sector, though the way to achieve perfection in the field is certainly a long way to follow, yet this will be indeed impactful not just for the agri-business stakeholders, but the economy as a whole. The whole collaborating value co-creation process, the favorable opportunities of the Indian marketplace, the adaptable nature of large Indian consumer base, etc. will serve as a paddling storm in this nascent yet promising market vertical. Both the Indian and Global market are on the verge of going glocal, even in e-agribusinesses, in times to come and the early adopters of the same will be highly benefitted being the first movers in this space.

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Chapter 8

Online Consumer Behaviour: How to Create and Maintain E-Loyalty

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Abstract

Online loyalty was defined in an issue of the Harvard Business Review as the secret weapon on the web and it is on this secret weapon of human behaviour that the article focuses. The aim of the chapter is to understand, based on existing literature, what influences the creation and maintenance of loyalty in e-commerce. The chapter is a literature review where 31 articles taken from the Scopus database were analysed. The main results indicate that e-loyalty is directly influenced by e-trust and e-satisfaction, which in turn are related to topics such as online brand community, responsiveness and website design, and security/privacy.

Keywords: e-commerce, e-loyalty, consumer behaviour

Introduction

746.4 million people of which 87% are internet users, 757 billion euros in online shopping in 2020, clothing and footwear as the most popular product in 2014, these are some of the numbers that characterise e-commerce on the

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European continent (Ecommercenews, 2021). The emergence of e-commerce dates back to the mid-1970s, in the United States, at the time of requests for archive requests. In Brazil the first record dates to 1996 and is related to a large bookstore. It has been more than 40 years since companies around the world began to take the first step in this adaptation of commerce to the Internet, but it could be said that only now has the real digital transformation begun (Dominios.pt, 2021; Sarraf, 2020).

Data from the Smart E-Commerce Report 2021 highlights the growth of e-commerce. When 10 thousand consumers from some European countries such as Belgium, Germany and France were surveyed, only 40% of them intended to make their purchases in a physical shop, thus a reduction of 14% compared to the pre-pandemic era (UPS, 2021; Freire, 2021).

The pandemic situation associated with the coronavirus disease, also known by COVID-19, has revolutionised everyone's lifestyle (Kumar & Malhotra, 2021; Kumar & Gupta, 2021). All forced to be confined, to change our routines and with the possibility of leaving home according to the few exceptions given, consumers felt the need to seek alternatives, and retailers and brands had to be quick to adopt digital migration measures (Pires, 2020; Lata & Kumar, 2021a). Online commerce in Portugal has thus grown by around 80% in little more than a year, the volume of orders in the domestic market has increased by around 30% and an increase of more than 90% in entities selling in e-commerce has been recorded (Peralta, 2021).

E-commerce, already the future, has made its mark and promises to stay. However, the question is raised as to how online sellers will manage to create and maintain buyer loyalty (Kumar & Pradhan, 2016). The literature has long supported Philip Kotler in a striking phrase where he says that "winning a new customer cost between 5 and 7 times more than keeping a current one" (Stumpf, 2018) which subsequently led to several studies. Data shows us that a loyal customer spends on average 67% more on products/services than a new customer and even if a company introduces only 20% loyal customers, they will be the result of 80% of revenue (Muliki, 2021). A 7% increase in customer loyalty could mean an increase in lifetime profits per customer by up to 85%. In addition, a 3% increase in consumer loyalty could lead to up to a 10% reduction in costs (Silvia, 2020).

Consumer loyalty towards brands and companies is thus a key point for their profitability and growth, so this chapter's main objective is to identify from a systematic literature review what leads to the creation and maintenance of consumer loyalty in online markets.

Analytical Framework

Literature Review

E-commerce emerges as the combination of traditional business with the automation provided by the Internet allowing information sharing, conducting business transactions, and the delivery and sale of goods and/or services (Kumar et al., 2020; Morrison and Marcotte, 2020). In addition, it also allows the dissemination of brands, which may be a strategy to reach other consumer markets, since it combines the communication between the seller and the consumer (Mu, Lennon, and Liu, 2020).

Customer loyalty is the way in which the customer is willing to interact with or buy from the same company on an ongoing basis (Muliki, 2021). It can come in many forms, but in general it is associated with a positive customer experience with the brand, which in turn increases the likelihood of repurchase (Kumar & Ayodeji, 2021; Muliki, 2021). E-loyalty is an extension of the traditional concept of loyalty.

Some of the fatures that seem to create e-loyalty are customer support, on-time delivery, quality information, privacy policies and shipping values (IGI GLOBAL, 2021; Lata & Kumar, 2021b). However, it is worth remembering that the consumer journey to customer loyalty combines several fatures such as purpose compatibility, values, mission, and purchase experience (Silvia, 2020; Pradhan & Kumar, 2016).

Method

Being the objective of this chapter to identify from a systematic literature review what leads to the creation and maintenance of consumer loyalty in online markets, it was followed a qualitative methodology based on articles taken from the Scopus database. In a search through Scopus a total of 44 articles were obtained, the term “e-commerce” and “e-loyalty” were searched, limited by the sub-area of Business, Management and Accounting, and Social Sciences and limited to the keyword “e-loyalty.”

The collected documents were put into an Excel and classified by year of publication. In that same Excel page, data such as the author, the title, the type of document, the journal where the publication was made, the keywords, the abstract, the objectives, the research questions, the variables, the hypotheses,

the context of application, the theories addressed, the sample, the methodology, the results obtained and proposed future research were entered. In some articles it was not possible to complete all the fields, for reasons of coherence, documentary context or access to it. From these data, it was possible to screen the articles. After analysis of the articles, of the 44 removed only 31 were used for analysis.

After this analysis of the documents obtained, a structure for the article was organised based on the points considered important to address.

Results and Discussion

Brief Descriptive Analysis

The 31 papers analysed are situated in a time span of 19 years, 2002 to 2021. However, the year 2021 presents the highest relative frequency. Furthermore, the average per year of articles published in this area is 2 papers (Figure 1).

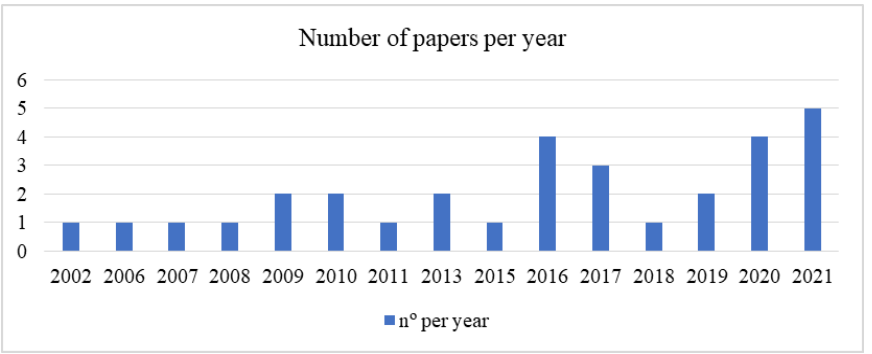

Figure 1. Number of papers per year.

The papers analysed are present in various journals, with the International Journal of Internet Marketing and Advertising being the one that stands out with 3 of the 31 papers analysed, followed by the Service Industries Journal and by the Decision Support Systems each with 2 papers.

Content Analysis

The papers present different types of methodologies, which are summarised in Table 1.

Table 1. Methodologies

Methodologies	Authors of the papers
Survey and questionnaires	Kurniawan, Wibowo, Rahayu, Yulianti, Annisa and Riswanto (2021); Farmania, Elsyah and Tuori(2021); Akroush, Zuriekat, Mahadin, Mdanat, Samawiand Haddad (2021); Ghali(2021); Paștiu, Oncioiu, Gârdan, Maican, GârdanandMuntean (2020); Buhalis, Parra López and Martinez-Gonzalez(2020); Hoang and Nguyen(2020); Parra-Lopez, Martínez-gonzález and Chinea-Martin(2018); Rao and Kothari(2017); Alhijawi and Douglass(2017); Pereira, Cardoso andDionísio(2017); Fang, Shao and Wen (2016); Xuelinand Jian (2016); Xiao, Guo, D'Ambra and Fu (2016); Bressolles, Durrieu and Deans (2015); Yoo, Sanders and Moon (2013); Fuentes-Blasco, Saura, Berenguer-Contrí and Moliner-Velázquez (2010); Kim, Jinand Swinney (2009); Kim, Ferrin and Raghav Rao (2009); Cyr (2008); Zha, Ju and Wang (2006); Srinivasan, Anderson and Ponnavolu (2002).
Literature review	Kurniawan, Wibowo, Rahayu, Yulianti, Annisa and Riswanto (2021); Jayakumar (2016); Krumay, Br and tweiner and Zauner (2011).
Website analysis	Kim and Kim (2020); Jayakumar (2016).
Interviews	Das, Mishra and Cyr (2019); Kim, Jin and Swinney (2009).
Focusgroup	Pereira, Cardoso and Dionísio (2017).
Case study	Jayakumar (2016); Afsar, Nasiri and Zadeh (2013).
Experimental task	Cyr (2008).

The main methodology presented was the use of surveys and questionnaires, which may be related to the fact that there is not much data yet to understand how the consumer behaves in terms of electronic loyalty to brands.

Regarding future investigations, the authors of the papers suggest some paths as the ones in Table 2.

Some of the fields of research referred to in the older literature were subsequently undertaken, which demonstrates the relevance these would have to the field.

Table 2. Future investigations

Authors of the papers	Future investigations
Paștiu, Oncioiu, Gârdan, Maican, Gârdan and Muntean (2020)	Extend the research with a more gender-balanced and diverse mix of consumers to understand if the model can be used in different consumer cultures.
Kim and Kim (2020)	To research e-service quality in an omni-channel context and explore ways of creating excellent online service experiences.
Buhalis, Parra López and Martinez-Gonzalez (2020)	Inclusion of other internal and external variables, deepen the relationship between purchase intention and loyalty.
Hoang and Nguyen(2020)	Investigate the relationship between perceived CSR and the five full dimensions.
Das, Mishra and Cyr (2019)	Carry out this study in other countries.
Faraoni, Rialti, Zollo and Pellicelli (2019)	Larger sample.
Parra-Lopez, Martínez-gonzálezandChinea-Martin (2018)	Include other variables in the formation of e-loyalty.
Pereira, Cardoso and Dionísio (2017)	Extend the sample and scope. Compare customer behaviour in online and offline contexts.
Fang, Shao and Wen(2016)	Cross-cultural comparison research.
Bressolles, Durrieuand Deans (2015)	Replicate the study in other industries.
Fuentes-Blasco, Saura, Berenguer-ContríandMoliner-Velázquez (2010)	To examine the process of perceived value formation and its influence on loyalty.
Kim, Jinand Swinney(2009)	Study some product categories and/or compare different categories.
Kim, Ferrin and Raghav Rao (2009)	Consider other antecedents of loyalty and examine whether the dynamics differ for initial versus subsequent purchases.
Cyr (2008)	Larger sample of Websites.

Figure 2. Cloud of words.

Figure 2 corresponds to a cloud of words referring to the first keyword of each paper used in the study. The size of words varies according to the relative frequency with which they appear.

From the 31 documents obtained, 31 keywords are identified, of which "e-commerce" with 10, "e-loyalty" with 4, "customer satisfaction" with 2, and "B2B e-commerce" with 2. All other keywords appear only once. The size of words varies according to the relative frequency with which they appear. This relative frequency allows us to identify some fields directly related to e-loyalty on e-commerce, such consumer behaviour and customer satisfaction. The choice of the first keyword of each paper is because researchers usually place the central themes of the research in descending order, since keywords are usually placed according to their relevance to the paper.

Discussion

In the July-August 2000 issue of the Harvard Business Review, Reichheld and SchefterPhil described online loyalty as the secret weapon on the web, which to be won first companies would have to earn the trust of customers (Reichheld and Schefter, 2000). This was mostly because they were distance driven businesses that entailed risk and uncertainty, leading to the customer needing to trust images and promises, several attributes seem to be relevant in online shopping, but trust is what governs the web (Reichheld and Schefter, 2000).

This trust often emerges related to customer relationship management which in turn presents factors that contribute to e-loyalty (Farmania, Elsyah and Tuori, 2021).

A study developed with 767 active users of the number one e-commerce company in Indonesia analyzed ten factors that seem to contribute to the value of e-Customer Relationship Management leading to e-loyalty, these being: rewards, customization, cultivation, care, online community, choice, convenience, site security, interactivity, and personalization values (Farmania, Elsyah and Tuori, 2021). This study concluded that increasing e-Customer Relationship Management would have a positive impact on e-Loyalty, and out of the ten factors the four with the highest positive significance analysed are interactivity, convenience, customization, and choice (Farmania, Elsyah and Tuori, 2021), which is similar with that observed in a study conducted on loyalty among online consumers in India, where 5 significant variables affecting online loyalty are identified, these being choice, community,

cultivation, convenience, and character (Rao and Kothari, 2017), which is in line with the study of Zha, Ju and Wang (2006).

These factors end up standing out when talking about e-service quality, since they can be included in the five dimensions of quality: reliability, promptness, guarantee, empathy, and tangible aspects (Parasuraman et al., 1985).

E-service quality and perceived value emerge with a significant positive effect on consumers' e-satisfaction and e-trust, with e-satisfaction receiving the strongest effect (Swaid, 2007; Fuentes-Blasco, Saura, Berenguer-Contrí and Moliner-Velázquez, 2010; Bressolles, Durrieu and Deans, 2015; Fang, Shao and Wen, 2016; Akroush et al., 2021; Goutam, Gopalakrishna and Ganguli, 2021; Ghali, 2021). E-satisfaction, in turn, has a significant positive effect on e-trust and e-loyalty (Akroush et al., 2021; Goutam, Gopalakrishna and Ganguli, 2021; Kim and Kim, 2020).

The e-satisfaction and e-trust variables are predicted by convenience, security and privacy, on the other hand themes such as responsiveness website design, personalization and customer service present to have influence only on e-satisfaction which will influence loyalty creation (Kim, Jin and Swinney, 2009; Afsar, Nasiri and Zadeh, 2013; Xiao, Guo, D'Ambra and Fu, 2016; Pereira, Cardoso and Dionisio, 2017; Alhijawi and Douglass, 2017; Parra-Lopez, Martínez-González and Chinea-Martin, 2018; Faraoni, Rialti, Zollo and Pellicelli, 2019; Ghali, 2021; Lata & Kumar, 2021c).

Regarding website design when attractive they help in building lasting relationships with online consumers (Cyr, 2008; Ghali, 2021; Buhalis, Parra López and Martinez-Gonzalez, 2020). A study with a sample of 237 respondents who use banking applications daily in Saudi Arabia concludes that the interactivity of the design of online banking services helped build customer perceptions of them (Ghali, 2021), not to mention that a study that examined the influence of website layout concludes that they have a significant effect on consumers' purchase decision making (Au-Yong-Oliveira, Carvalho, Domingos and Vieira, 2020). In addition to this easy accessibility websites facilitate the consumer's decision-making process which in turn leads to the creation or maintenance of e-loyalty, an effect of perceived satisfaction (Paștiu, Oncioiu, Gârdan, Maican, Gârdan and Muntean, 2020).

The quality of information, although not very highlighted, emerges as a tool that increases customer trust and loyalty, because by providing accurate information about the products/services the customer believes that the retailer is working for their wellbeing. Which will enhance new purchases, in addition

to being created a relationship of trust based on the credibility perceived by the customer and the customer's expectations are met, which will generate loyalty (Bressolles, Durrieu and Deans, 2015; Hoang and Nguyen, 2020).

Related to this quality of information, business ethics, another organisational component, emerges as an influence on customers' trust, this perception of ethics will influence their loyalty (Gundlach and Murphy, 1993; Paine, 2000; Roman, 2003; Hoang and Nguyen, 2020).

With regard to trust, particularly institutional trust, it seems to affect customers' e-loyalty (Xiao, Guo, D'Ambra and Fu, 2016). This happens because the trust in the supplier increases, if we talk about consumers with low familiarity with online commerce their purchasing behavior will depend on the institutional trust, because they are more fearful about security and privacy aspects (Xiao, Guo, D'Ambra and Fu, 2016). However, if they are customers who have shopped more than once, their trust in online retailers is higher and they may in some cases choose where to shop based on their previous demonstrated competence and loyalty to them (Xiao, Guo, D'Ambra and Fu, 2016; Lata & Kumar, 2022).

Studies that have examined the effect of Online Brand Community on E-loyalty have found positive and significant effects, meaning that the better the online brand community management the better the e-loyalty obtained (Kurniawanaet. al., 2021). From the variable online brand community, a possible contribution to the creation of online loyalty was identified, this being community engagement which is correlated with the dimension of favouritism in loyalty (Kurniawanaet. al., 2021). Thus, good management of an online brand community may prevent customers from switching to another brand.

Previous findings on online flash sales suggest some ironic results. The reason for this is that as consumers, when we make the decision to buy in these flash sales, we feel some anxiety given the time constraints and the available stock, then when functional failures occur on the brands' websites these cause disappointment. However, studies point out that when fairness is perceived in recovering the service that has experienced faults customer satisfaction increases, which in turn will have a strong effect on e-loyalty (Das, Mishra and Cyr, 2019). However, these huge discounts do not seem to influence e-loyalty at all (Jayakumar, 2016), thus raising the question whether it is a good methodology by companies. Consumers also seem to increase their loyalty towards a company or brand when it offers offline pick-up and return services, influencing brand preference loyalty and loyalty under a future price increase (Swaid, 2007).

Furthermore, marketers who develop personalized marketing campaigns increase the e-trust of their websites which in turn leads to an increase in e-loyalty (Akroush et al., 2021).

Thus, e-loyalty arises by e-trust and e-satisfaction (Akroush et al., 2021), which is confirmed by authors Goutam, Gopalakrishna and Ganguli (2021), Ghali (2021), Alhijawi and Douglass (2017), Xiao, Guo and D'Ambra (2010), Kim, Jin and Swinney (2009), and Kim, Ferrin and Raghav Rao (2009).

Studies that analyze the luxury products buyers suggest the existence of a gap between offline and online regarding the consumer expectations that will influence the e-loyalty and e-satisfaction (Kim and Kim, 2020). This is because consumers of this type of products prioritize the utilitarian aspects of the online shopping service, basic functions that make this experience more efficient and convenient increasing e-satisfaction, as well as the personalization of the service influencing e-loyalty (Kim and Kim, 2020), which is related to the study of Farmania, Elsyah and Tuori (2021).

Another interesting context to analyse is related to e-commerce in tourism, especially when analysed in recent years (Kovid & Kumar, 2022). With the pandemic situation caused by the coronavirus disease (COVID-19), several digital platforms emerged and/or improved their content in order to help consumers get to know the attractions of a city or see exhibitions in museums without having to pack their bags; we are talking about a 60% growth in demand for this type of content (Orlando, 2021). The trust and satisfaction felt by the consumer thus emerge as a stronger influence on e-loyalty than website design and electronic word-of-mouth (Buhalis, Parra López and Martinez-Gonzalez, 2020). However, perceived trust directly influences satisfaction and indirectly purchases intention and loyalty (Srinivasan, Anderson and Ponnavolu, 2002; Buhalis, Parra López and Martinez-Gonzalez, 2020).

This electronic word-of-mouth can be positively influenced through e-satisfaction since it has a positive impact on consumer trust and loyalty, being influenced by the relational quality (Kumar &Bhardwaj, 2018; Yoo, Sanders and Moon, 2013; Fang, Shao and Wen, 2016; Pereira, Cardoso and Dionísio, 2017), which is an asset for e-commerce. This happens because we are increasingly facing a digital society in which news or information runs on the internet very quickly, being both true and false, which in seconds can damage the brand image of a company and make its revenues fall instantly (Lata & Kumar, 2022). In addition, as is common knowledge, an unsatisfied customer passes on their negative experience to an average of 11 people, while a satisfied customer will pass it on to 3, a difference of more than 50%. Studies

also show the relevance of providing continuity of new and personalised information to loyal customers to create a long-term relationship (Pereira, Cardoso and Dionísio, 2017).

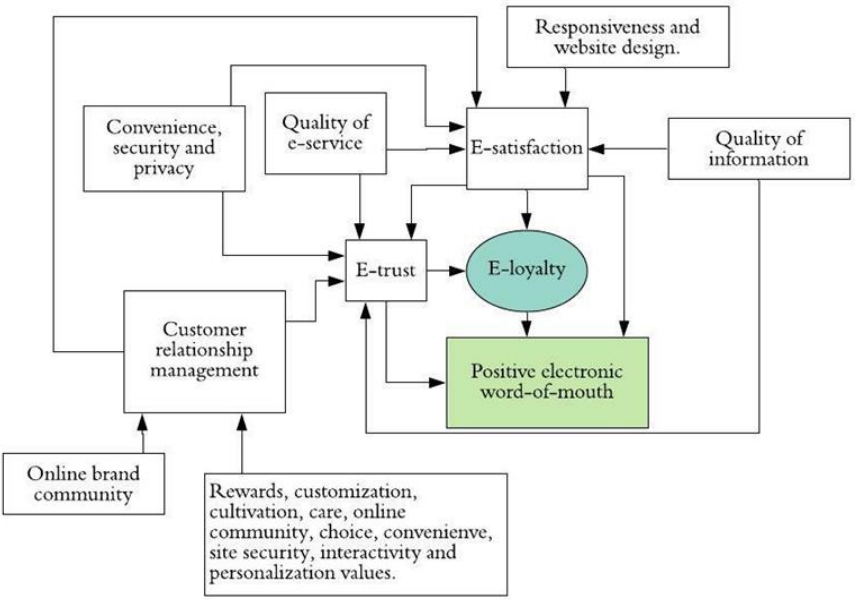

Figure 3. Create and maintain e-loyalty.

Something that seems little talked about in the existing literature is the impact on loyalty of financial switching and relational switching costs. Studies conducted by Xuelin and Jian (2016) comes to present a positive relationship between financial switching costs and positive customer loyalty attitudes, as well as a positive relationship between the cost of switching programs and loyalty, and relational switching on consumer loyalty attitude, which may be related to the fact that these changes are communicated to the customer and the customer feels part of the process. In addition, the loyal consumer is more likely to pay more for the service/product (Srinivasan, Anderson and Ponnavolu, 2002).

Figure 3 presents a scheme that interconnects the concepts present in the literature and in this discussion of results that lead to the creation and maintenance of online loyalty.

In short, the creation of e-loyalty seems to be directly related to e-satisfaction and e-trust. Which means that for a company or brand to achieve consumer

loyalty it will need to work on these two components through the accessibility of the website, quality information, the quality of the electronic service, the security it conveys and the relationship it creates with its consumer?

Another very important point is the positive electronic word of mouth generated by e-loyalty which will lead to new buyers who may come to gain loyalty with the brand. Regarding the maintenance of consumer e-loyalty, for this to be maintained one of the points reported was the importance of consumers being informed continuously about the products/services, perhaps because by being informed they feel part of the process.

Conclusion

"For better or worse, the pandemic prompted us to hit the reset button in many different parts of our lives (Trifonova, 2021). American consumers feel more adventurous, empowered and bolder, their priorities have changed, and they are ready to follow their purpose and be happy, and this is where e-commerce can come in as a tool (Trifonova, 2021).

In an increasingly digital world, where it is easier to have a screen close to the consumer, brands can and should bet on new formats of content and communication, the consumer needs it. As this study has shown, the way to create e-loyalty is related to e-satisfaction and e-trust, this means that our consumer needs to know that he can trust us, that our information and products are of quality, that his personal data is safe when using our platforms and that wherever he is he will be part of our community.

Consumer loyalty is the biggest weapon a brand has at its disposal, it may not be easy at times to work out how to get to it, but it is worth every step on the journey.

In future research it would be interesting to analyse in conjunction with a brand the effects that loyalty produces through positive word of mouth.

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Chapter 9

Smart Tourism as a Sustainable Strategy for Tourism Development

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Abstract

The aim of this article is to analyze smart tourism as a sustainable strategy for the destination development through the various models of integrated approach of smartness and sustainability. To attain this objective, an explorative and qualitative research methodology is used. Different articles related to smart tourism, sustainable tourism, and sustainability were reviewed for this study. As a result, some models related to the integration of smartness & sustainability have been found as well as different challenges and solutions have identified to attain smartness as sustainable strategy for destination development. This study will provide a direction for the destination development in alignment with smart sustainability and most importantly futuristic e-commerce.

Keywords: smart, sustainable, tourism, smartness, sustainability, destination

Introduction

The tourism sector plays an important role in creating wealth at global and local levels (Seng, 2012). This sector also provides job and business

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opportunities as it is connected with all the components of social and economic activity of most of the countries (Kontogianni & Alepis, 2020; Lata & Gupta, 2020). In many developed countries, it has its existence as a well-developed industry in terms of tourism infrastructures and services (Seng, 2012). Due to its numerous benefits, this industry is responsible for making tourism destinations highly demanding for all types of tourists (Kontogianni & Alepis, 2020). In the last decade, a new concept for development of smart tourism destinations from smart cities has attracted the attention of researchers and tourism planners (González-Reverté, 2019). Ye et al., (2020) presents that smart tourism is beneficial for all direct and indirect stakeholders. In many countries like U.S., South Korea and China governments have initiated the programs for infrastructure development of smart destinations and adoption of smart tourism technologies (Lata & Kumar, 2021a). China launched "Guidance to Promote Smart Tourism Development" in 2015. Apart from this, many reputed organizations of the world have a huge data related to potential customers. Online companies and destinations are using the visitor movement data in smart way for marketing (Bhardwaj & Kumar, 2022). Although smart development for destinations is still at infancy stage but many countries are trying to implement it in all components of the tourism industry. The accepted fact is that it will record a remarkable growth in years to come.

González-Reverté, (2019) describes that a tourism destination has become smart with sustainable economic development, improved quality of life, increased investment in human resource development, smart tourism infrastructure, smart technologies, and high level of all stakeholders' participation in decision-making. Smart tourism is, based on sustainability and a destination, cannot considered smart if it is not sustainable. The challenges related to sustainability at destination level can addressed effectively with development of sustainable tourism.

Sustainability at global level, has been recognized as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987; Kumar & Malhotra, 2021). Literature also has focused on the sustainable tourism development supported by smart tools and applications (Seng, 2012). Bifulco et al., (2016) explains that the scholars have recommended the application of sustainability within tourism destinations. The study also advocated sustainable strategies to build a smart environment for all stakeholders and to replace unsustainable practices with sustainable ones (Lata & Kumar, 2021b).

Shafiee et al., (2019) besides sustainability, ICT also plays a significant role in socio-economic development of tourism destinations. In recent years,

a number of tourist destinations have indicated that information and communication technology is supportive for sustainable development (Kumar & Svensson, 2015). Recently, it has focused on sustainability and smart tourism as well as on ICT which is a relevant tool for smart processes. González-Reverté, (2019) suggests that sustainability with suitable strategic management and smart tourism is beneficial to minimize adverse tourism impacts and to maximize the positive impacts on economy, society, and environment. Sustainability must be an integrative concept across all areas of the tourism sector.

Smart Tourism

Smart tourism is another revolution after the internet in the tourism industry (Liu & Liu, 2016), and this concept is in trend from last decade (Gretzel, 2018). Smart tourism refers to a type of tourism in which all stakeholders depend upon the applications and tools of ICT (Ye et al., 2020). Wang et al., (2020), defined it from the technological perspective as an advantage arising from using a range of smart technologies, such as sensors, beacons, mobile phone apps, radio-frequency identification (RFID), near-field communication (NFC), smart meters, the Internet-of-Things (IoT), cloud computing, relational databases, and etc., together form a smart digital ecosystem that fosters data-driven innovations and supports new business models (Lata & Kumar, 2021c).

All technological applications and tools used by tourists belong to smart tourism (Dabeedooal et al., 2019). It helps to fulfill all needs and expectations of tourists in a better way with well customized products and services as well it provides an opportunity to industry and management organizations to customize competitive products and services (Gajdošík, 2018; Lata & Kumar, 2021b). This can also be seen as an interesting model of the future of e-commerce. Ivars-Baidal et al., (2019)proposed a model in which the dimensions need to be explored were (1) Governance, (2) Sustainability, (3) Innovation, (4) Connectivity/Sensoring, (5) Information System and (6) Smart solution. A systematic approach for managing Smart Tourism Destinations is also proposed in this model, which includes three levels: “the strategic-relational, the instrumental and the applied levels.” Wang et al., (2020) described that the governments, local authorities and private organizations have already initiated a number of policies and programs related to smart tourism all over world. Today, smart tourism is attracting the attention of

tourism providers, policy-makers, destination managers, consultants, IT developers, statisticians, and researchers working at global level (Gretzel, 2018). The technical services used in it include recommender system used for suggesting customer's profile, choice-based tourist attractions, location tracking system that is used to assess tourist's behavior, location-based advertising and tools to provide visiting guidance at the destination. (Kontogianni & Alepis, 2020). There are the technological components to provide advantage to smart tourism. The advancement of smart technologies (cloud & fog computing, use of mobile technologies and social media, Sensors, GPS and VAR) is responsible for the emerging development of smart tourism (Singh& Kumar, 2021; Lata & Kumar, 2022a). In this way, smart tourism depends upon smart technologies (Gajdošík, 2018). It is assumed in smart tourism that tourists want to use information technology for their requirements of products and services as well as in their interaction with all other stakeholders (Gajdošík, 2018). It is important to build such an environment which can ensure scenario of offering personalized and customized services with right information at right time through right channel (Kontogianni & Alepis, 2020; Lata & Gupta, 2020). There has been a tremendous increase in the number of research concerning smart tourism due to the integration of ICT with tourism (Femenia-Serra, 2018). Mehraliyev et al., (2020) stated that the research stream in smart tourism academia has been initiated by Buhalis and Amaranggana (2013).

Sustainable Tourism and Smart Tourism

According to Kisi, (2019) numerous fields such as agriculture, architecture, and tourism are using the term 'sustainable' to develop themselves. In our field, the term is used to reduce the adverse impacts and to increase the benefits at the destinations. The European Commission (EC) has described that tourism is firmly connected with sustainability and a destination is recognized as an integration of environment, social and economic dimensions for welfare of local community. Sustainable development helps to fulfill the present needs and also to sustain the resources to fulfill the needs of future generation (Suárez-Eiroa et al., 2019). Sustainability includes responsible and appealing ways to help in conservative goals (Font & McCabe, 2017). Sustainable tourism must express the future status of environmental, economic and social impacts (Lee et al., 2020). Sustainability has become necessary for our industry in order to increase and sustain the competitiveness of destinations

but at the same time sustainable development in tourism is not easy, was the finding of the study (Pivčevi´c et al., 2020). Now it has become essential to make policies and plans for sustainable tourism development because of the increasing contribution of tourism to environmental and climate change along with economic growth (Michael Hall, 2011). Different ways have been considered for sustainable tourism development at different locations (Kisi, 2019). For example, special interest tourism and alternatives forms of tourism are key players to promote balanced growth according to the requirements of local environmental and socio-economic dimensions (Kisi, 2019). Bifulco et al., (2016) suggests that smart tourism destinations are an innovative and effective alternative that helps in sustainable development and helps to facilitate the tourist.

Smart tourism leads with innovation and helps destination development as well as it plays central role in the sustainable development at destination level (Shafiee et al., 2019). It has been described (Gretzel et al., 2015) as "tourism supported by integrated efforts at a destination to collect and aggregate/harness data derived from physical infrastructure, social connections, government/organizational sources and human bodies/minds in combination with the use of advanced technologies to transform that data into on-site experiences and business value- propositions with a clear focus on efficiency, sustainability and experience enrichment." The term smart has been coined for tourism destinations in order to develop sustainability and to utilize the resources in sustainable way (Gretzel et al., 2015).

It is considered that the growth of information technology and need for sustainability are responsible for the origin of smart tourism concept (Gajdošík, 2018). The integrated platform of smart tourism and sustainability provides an opportunity to make destinations more competitive (Shafiee et al., 2019).

Issues and Challenges

Due to the changes in the perception of local people and over-tourism, management based on the sustainability of destinations has become a hurdle for all stakeholders. (Kisi, 2019). There are some challenges for sustainability in tourism like increased energy consumption, environmental pollution and unplanned urbanization (Kisi, 2019). To use the resources with smart technologies and to improve the socio-economic and environmental aspects at

the destination in a sustainable way (Lata & Kumar, 2021c), are the main challenges for tourism industry (Shafiee et al., 2019).

González-Reverté, (2019) stated that there is a lack of strategic planning related to development of smart tourism destinations through sustainability because as on date the performance targets have been not classified and highlighted, no clear solution for the protection of environmental, socio-cultural assets. These can affect the success of marketing strategies of tourist destinations. Some other challenges relating to suitable sustainable planning are also found prevalent at ground level. The growth of tourism can be responsible for environmental damage and sociocultural problems as destinations are facing over-tourism and inclusive tourism issues in terms of sustainability (Goffi et al., 2019). This situation can challenge existing carrying capacity and degrade tourist experience, overload infrastructure, damage nature and threats local culture and heritage (Lee et al., 2020).

Some studies revealed that smartness consists sustainability of destination but this combination is vague (Perles Ribes & Ivars Baidal, 2018). There can be confusion regarding the growth of sustainability due to the lack of suitable sustainable strategy and proper guidelines in smart tourism plans (González-Reverté, 2019).

Solution

Since 1984, tourism as a discipline tried to adopt sustainability in its every initiative sustainable tourism development. It should focus on a balanced distribution of the socioeconomic benefits. Shafiee et al., (2019) described that the smart environment consists tools of sustainability and technology, which helps to face the different challenges in a flexible and quick way (Lata & Kumar, 2022b). The government should try to determine and present a smart tourism framework consisting of sustainable approaches at the macro level (Shafiee et al., 2019). Cities are facing challenges of traditional nature like sustainability, technology-based social infrastructure but smart cities are a suitable creation and innovation to design a sustainable environment for both residents and visitors (Lee et al., 2020). Smart environment of consisting smart technology and sustainability tools helps to reduce the environmental challenges in a better way. Perles Ribes & Ivars Baidal, (2018) proposed some elements of smartness and sustainability like real-time management, monitoring systems, open innovation and public-private cooperation which are related components as smartness is the new form in sustainability of

tourism. Smart tourism is considered as an opportunity by the destinations to improve their competitiveness instead of improving urban sustainability. The sustainability for smart cities has been analyzed by different researchers and found that smartness and sustainability should be integrated in an effective way for the destination development (Ahvenniemi et al., 2017; Haarstad, 2017; Lata & Kumar, 2021a).

Farrell & Twining-ward, (2005) suggested that the process of sustainability implementation is growing and never-ending. For Carpathian region of Ukraine, Grytsiuk et al., (2017) proposed a strategy for sustainability. Its basis was to enhance natives' standard of life. They also stressed effective cooperation among all stakeholders. Sulistyadi et al., (2017) advocated the SWOT analysis with sustainability model for different islands of Jakarta. Paunović & Jovanović, (2017) also mentioned that being knowledge-based, it can be developed with the cooperation of all direct and indirect stakeholders. There is a need to address over-tourism problems with sustainability (Koens et al., 2018). Kisi, (2019) highlighted its linkages to the community's requirement of effective planning. In case of tourism industry in Bangladesh. The researcher concluded that strategies like sustainable economic returns planning, ensuring tourists' security, strict environmental rules and regulations for infrastructure development so that sustainable tourism development can take place (Lata & Kumar, 2022a). González-Reverté, (2019) stated that the objectives must be redesigned on a periodical basis and operational guidelines for a destination should be developed in such a way that it can play the role of a general guide for sustainable development. González-Reverté, (2019) stated that if a tourism destination is to become smart it needs to adopt a sustainable approach which is possible by use of technology. The identification of technologically supported solutions for sustainability is also challenged by a number of factors. Mobility and transport issues, consumption and market competition, profit objectives and stakeholders' numbers are some other important factors which affect the sustainability of tourist areas (González-Reverté, 2019).

Dabeedooal et al., (2019) has stressed the need for a common vision and course of action to be taken by all stakeholders for sustainable tourism development. Lee et al., (2020) proposed solution for reduction of the negative impacts of over-tourism and suggested five themes required for controlling over-tourism and ensuring improved quality of life by "smart preparation, smart guest, smart traveler, smart user of technology and smart immersion." The study also revealed that Vancouver is going to be smart very soon. Identifying and monitoring IT is a prominent project on PPP model in city.

González-Reverté, (2019) described the necessity of the particular approach for technology utility in smart plans. Theses focused on the technological aspects and seeks tailored answers for sustainability. Therefore, to avoid any imbalanced situation, it will be required to adopt an inclusive and collective plan for sustainability in smart destinations.

Model of Smartness and Sustainability

The approach of four dimensions, which includes economic, environmental, social and cultural have been used for further analysis. Perles Ribes & Ivars Baidal, (2018) concluded that if a destination is not sustainable then how itcan be a smart destination. The degree of association between smartness and sustainability depends upon the strategy used for destination development and use of technologies. These both are also related to a governance framework, a basic pillar for sustainability. The levels of sustainable and smartness model i.e., conceptual level, operational level and objective level have been explained in detail and interpretations show that both the concepts share many common elements. As explained in literature, the conceptual level is located on the upper part of model and indicates that a destination cannot be smart if it is not sustainable. The operational level includes a set of smartness with sustainability. All these pillars have been discussed in detail and it seems as accepted things in the existing literature. An interaction has shown between the technology and pillars/elements of sustainability to make a concept of smart sustainability for the destinations. The satisfaction of visitors and residents has been included at objective level. Smartness at destination level can be possible within the framework of sustainability. “Following only sustainability, a destination cannot be smart” seems an accepted fact (Perles Ribes & Ivars Baidal, 2018).

Towards a Synergetic Model for Smart and Sustainable Destinations

Detailed analysis of existing literature of smart cities clearly indicates a research gap with reference to application of smart strategies and sustainability in development of smart tourism is prevalent. Perles Ribes & Ivars Baidal, (2018), have proposed a model with more details for integration of smartness and sustainability in a single one model. The expectation from this model is to

distribute benefits and conservation equally among all stakeholders of this process.

Conclusion

The results of rapidly growing tourism have motivated the concept of sustainability at the destination. Many researchers have analyzed the concept and course of action for sustainability and smartness. Analysis concludes that it is very difficult to develop sustainability and to increase competitiveness with smartness at the destination level. It has become a challenge to integrate smartness and sustainability at numerous destinations at global level. Some challenges have been revealed from the findings of different studies that include dynamic perception of local people, over-tourism, environmental challenges, social injustice, lack of financial and other resources, increased energy consumption, environmental pollution and unplanned urbanization. Apart from this, there are some others critical challenges like lack of strategic planning, lack of infrastructure and superstructure required in creation of smart tourism organizations) and absence of stakeholders' interest. Some studies suggest that sustainable smart tourism can support the destination development, if planned well. It will provide an opportunity for the development of destinations and its competitiveness in the long term. Models of smart sustainability have been proposed to integrate smartness and sustainability. Future research should focus more on smart sustainability. More research studies should be directed to evaluate the association of destination smartness and tourism sustainability.

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Chapter 10

Social and Ethical Aspects of E-Commerce: A Boon or a Bane

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Abstract

The increase in internet usage penetration into rural and tier two cities ensured the growth of e-commerce, with various players like Amazon, Flipkart, Snapdeal, Grofers, and Myntra becoming household names. This growth in the e-commerce sector has given rise to a need of examining the social and ethical aspects of E-commerce. All the stakeholders, primarily the consumers are becoming more concerned about ethical and social aspects of e-commerce, such as security, privacy, and trust. Thus, the purpose of this chapter is to provide insights into the social and ethical aspects of E-commerce. This chapter is a critical and conceptual overview of the positive and negative effects of E-commerce on society. It also outlines the ethical concerns of carrying out e-business. To fulfil these purposes a comprehensive view of academic literature is carried out. Findings suggest that social and ethical issues are present in both brick-and-mortar business as well as E-commerce, but the benefits offered by e-commerce are higher than the cost.

Keywords: e-commerce, e-businesses, social and ethical aspects, issues, brick-and-mortar business

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Introduction

The Internet has become an inseparable part of all facets of our everyday life because it has a vast impact on our social activities (Mittal & Kumar, 2018; Lata & Gupta, 2020). Every day, going to the bank to make cash transactions or withdraw money or go to the market to buy things and essential commodities have become increasingly difficult due to a lack of time. Work has become too demanding that there is no work-life balance. As a result, online purchases have become an increasingly important part of our society. Electronic technologies are causing fundamental changes in how people behave, organise themselves, and interact (Kumar & Nanda, 2022).

In the fourth quarter of 2020, India's e-commerce orders climbed by 36%, with the personal care, beauty, and wellness market benefiting the most. It is predicted that India's e-commerce business would be worth US$111 billion by 2024 and it would be worth US$ 200 billion by 2026 (Commerce Industry in India, 2022). This growth pattern is even accelerated by the global pandemic COVID-19 (Kumar & Gupta, 2021). Governments worldwide had to impose lockdowns to contain the spread of the coronavirus and consumers were left with no choice but to shift to online shopping (Kumar & Malhotra, 2021). Powerful global and regional industry transformations were recorded in 2020 as reported by United Nations Conference on Trade and Development (COVID-19 and e-commerce: a global review, 2022).

The number of digital buyers grows every year as internet access and adoption grow at a rapid pace around the world. In 2020, nearly two billion people have purchased products or services online, with global e-commerce sales exceeding 4.2 trillion dollars. Global retail e-commerce sales increased by more than 25% in the year of the pandemic, with Argentina reporting the highest percentage increase (Coppola, 2022). Strong uptake of e-commerce was witnessed across countries including China, Latin America, Africa, Kazakhstan, Thailand etc. but not all countries are ready for this digital transition (Kumar & Ayodeji, 2021a). Many of the world's least developed countries could not take advantage of pandemic-induced -e-commerce opportunities due to some barriers like overreliance on cash, lack of consumer trust, costly broadband services and lack of digital skills among consumers (UNCTAD, 2022; Lata & Gupta, 2021).

By 2024, India's e-commerce market will grow at a 27 per cent compound annual growth rate (CAGR), with grocery and fashion/apparel set to be the main drivers of incremental development (Commerce Industry in India, 2022). This data highlights the increasing demand for e-commerce and its

significance in our day-to-day life. E-commerce has given immense benefits and advantages to the economy and society (Kovid & Kumar, 2022). But at the same time, this form of business has resulted in numerous social and ethical challenges as well. In this chapter, we will discuss the positive and negative aspects of -e-commerce from the social and ethical perspective (Lata & Gupta, 2020).

Positive Social Aspects of E-Commerce

Encourages Entrepreneurship

Imagine doing business a few decades ago when e-commerce was not present. What all someone would require to plan a brick organization. First of all, one would need a nice physical store at a posh location, which either he or she will construct or rent out. But today with e-commerce people are starting their businesses even from their garage. Sometimes they don't have an office initially and they meet over coffee houses and run their business from there. Sixty-three per cent of e-commerce businesses are launched by first-time entrepreneurs[1]. Seventy-two per cent of entrepreneurs are under the age of 35, and nine per cent are women[2].

The costs of starting a business have considerably decreased thanks to e-commerce. Rather than building or renting a physical store, all that is required for an online store is a functional website or social media account. For budding entrepreneurs, this makes the process of beginning a business much less intimidating. Starting and sustaining a business with an online presence is far less expensive than opening a store and finding a location to store products (Lata & Kumar, 2021a).

With the advent of technology and e-commerce, people are starting their businesses at a very young age. The young generation is making new avenues of income through blogging, YouTube, and online coaching. They are not only meeting their financial needs but also helping their families. One such story of a young entrepreneur is Ritesh Agarwal, who brought disruptions in the hospitality industry with his app Oyo Rooms (Ritesh Agarwal, 2022).

[1] https://inc42.com/buzz/the-goodness-from-the-e-commerce-bubble-in-india/.
[2] http://timesofindia.indiatimes.com/ tech/tech-news/Indian-startups-on-track-to-raise-5-billion-in-funding-Nass-com/articleshow/49357947.cms/.

Born in a small town in Odisha (India), he became a millionaire by the age of 22. Today his company OYO has its presence in 80 countries and more than 800 cities. Ritesh named his company OYO 'On Your Own'. Oyo Rooms is a network of hotels, where the company partner with hotels, lease some rooms and sell these rooms under the OYO brand (Ritesh Agarwal: The Economic Times, 2022).

Bhavish Agarwal (founder of Ola), Vijay Shekhar Sharma (founder of PayTM), and Phanindra Sama (founder of Red Bus) are a few more examples who used the power of the internet to address the issues of society. With their innovation and technological advancement (Lata & Kumar, 2021b), they could touch the pinnacle of success in their career.

Furthermore, because it is now easier than ever before for anyone to start a business online, there is a lot of competition out there, which stimulates innovation in the digital world. Competition in the digital market is different from traditional markets. Rapid technological progress and innovation are the main features of the digital market, without which survival of the companies is very tough (Lata & Kumar, 2021b).

Fuel the Dreams of Womenpreneurs

E-commerce is emerging as a powerful tool for women's empowerment. With the availability of the internet and e-commerce platforms, starting a business is now more accessible to women than ever before. It gives good opportunities to women from rural and semi-urban backgrounds. E-commerce has created great opportunities for women who, due to social and family obligations, cannot participate in the mainstream economy.

The story of one such woman is Nisha Madhulika. She lives in Noida (Uttar Pradesh, India) and is a housewife. Nishaji's age is 56 years. She is mainly from Agra, when her children grew up and started living away from home for their studies and jobs, Nishaji was surrounded by loneliness. He has also done a job, which he had to leave due to some reasons. She started thinking of escaping the emptiness at home and doing something positive. One day she read a recipe blog on the Internet, seeing that she felt that she too could do this work and do it in a better way because she loved cooking. In the year 2007, Nishaji started her website[3]. Many people who commented on her website told her that if she shows the videos of making these recipes then it

[3] https://nishamadhulika.com/.

will be easy for him to understand how to make them. Keeping this in mind, She uploaded her first video on YouTube on May 16, 2011. Today his YouTube channel gets millions of views from all over the world. Nisha Madhulika YouTube Channel is one of the most subscribed YouTube Channels in India.

Today there are more than 10 million subscribers of the Nisha Madhulika channel on YouTube, to which 5-6 thousand new subscribers are added every day. His videos have been viewed more than 2 billion times (2,072,055,044) on YouTube. Nisha Madhulika has made 1657 videos for her channel so far. Today around 11-12 lakh people in India and around the world watch videos of Nisha Madhulika every day.

Nisha Madhulika earns around 10-12 lakh rupees every month due to the advertisements running on the screen of her videos. She has received the YouTube Top Chef India 2014 award.

Like Nisha Madhulikamany, women are starting their own business from home like tiffin service, cloth bags, packed food, pickle and papad, clothes etc. All this has been possible only through the internet and e-commerce. The online business presents the most promising career opportunity for women in rural India. Parvesh, a woman from a rural area of India, is not highly qualified. She along with five other women used to work in a small homegrown association 'INDHA'. They scaled up their business by creating a Facebook page for their brand, from 10 orders to more than 1000 orders per month. And now they have more than 300 women working for their brand (Forbes India, 2022). Parvesh is not alone, women from different parts of the country and different backgrounds leverage the power of digital and use social media as a platform to reach out to people.

'Women will' is one such platform launched by Google to empower women through digital skills and community building. Google also announced to grant $ 500,000 to Nasscom to train women in digital and financial literacy across various states of India (https://www.livemint.com/companies/news/google-pledges-to-support-1-million-rural-women-entrepreneurs-in-india-11615184185395.html).

Preservation and Promotion of Arts and Handicrafts Through E-Commerce

Due to the variation in culture, India is one of the most popular places for handicrafts. The handicrafts industry is one of the largest employers in rural

India. Around 6 million artisans get jobs in this industry including women and people from weaker sections of society (Editorial Staff, 2022). In addition to that, India is one of the largest users of the Internet worldwide. Hence there are huge and untapped opportunities hidden in e-commerce for big businesses as well as local artisans. Ecommerce offers a great marketing platform for domestically produced handicrafts.

E-commerce has bridged the wide gap between artisan groups and the potential market in India. In July 2020, the Odisha government signed an MoU with Flipkart to promote the arts, crafts and handloom sector in e-commerce (Orissa diary, 2020). As a result of this agreement, handloom artisans living in remote areas will be able to better market their products across India with the help of Flipkart.

In August 2021, Amazon India and Tribes India announced the launch of 'Karigar Mela', which will offer a dedicated store for primitive tribal and local Indian handicrafts on the e-commerce site (The Hindu, 2021[4]). Bidri, Dhokra, Ikkat, Patachitra, blue art ceramics, and other distinctive art forms will be available for purchase as part of the Karigar Mela. The Indian economy revolves around the tribal artisan and weaving group. It's also one of the industries that's been hardest hurt by the current pandemic. During these difficult times, the introduction of Karigar Mela would be critical in assisting artists and weavers in reviving their livelihoods and accelerating their growth.

Tribal Cooperative Marketing Development Federation of India (TRIFED) and Amazon have partnered for a long time to help raise visibility for indigenous products by bringing them to the mainstream. TRIFED and Tribes India are two organisations that represent a family of 5 lakh tribal master craftsmen and women in India that manufacture a large amount of handicraft and handloom products. The partnership between Amazon and TRIFED will allow tribal products made in India to reach clients all over the world.

Convenient and Time Saving

Because internet businesses have reduced overhead expenses, the mark-up on their products is typically substantially lower, as they may sell items for less and still break even. Furthermore, shoppers can easily compare similar products from multiple online businesses to choose the best deal, resulting in

[4] https://www.amazon.in/b?ie=UTF8&node=26984333031/.

fair pricing. A product search engine like Google Shopping helps in finding the lowest price at the selling stores and lists it for buyers[5].

E-commerce allows consumers to shop for goods and services at any time of day or night, making society more efficient and productive. This is a huge benefit for individuals who get off work late and don't have time to rush down to their nearest store to get the product. They can have it by ordering online. Retail online is often more convenient than going to a shopping mall (Kumar et al., 2020). The time saved by buying online can be put to better use in other learning and development activities. Because of increasing competition, the - e-commerce websites are trying to differentiate themselves by offering more and more convenience to customers like free delivery in one day or two, delivery at your preferred time and place, no question asked return policy etc.

Comforts for Disabled and Elderly

Those with disabilities, whether physical or mental or those who are elderly, may find it difficult to buy at a traditional shopping mall. These people may order the products and services they want from the comfort of their own homes when they shop online. Online medicine apps and the possibility of online doctor consultations have made life easier for the elderly and people with disabilities and also for those who do not have a caregiver. Many of the obstacles that people with disabilities have while shopping in physical stores are eliminated when they purchase online. Shopping obstacles for those who have trouble walking, climbing stairs or using a wheelchair, cane, or walker include finding reliable transportation, a scarcity of accessible parking, a lack of elevators, and high product shelves. Many of these issues are eliminated when purchasing online. E-commerce also makes it easy to compare and shop for the finest brands at the greatest prices, which is critical for a population with lower average incomes, higher medical costs, and lower employment rates.

E-commerce businesses can't afford to overlook their elderly customers. Not only is the number of elderly individuals increasing as a percentage of the population, but this demographic also has a higher level of wealth than other demographics (Ecommerce Guide, 2022). The notion that elderly people do not use the internet is no longer valid. Older age groups are becoming more likely to use social media and shop online, and their online involvement is

[5] https://www. google.com/shopping?hl=en/.

continuing to rise. It's not a demographic that can be overlooked, and if this group is properly targeted, there's a lot of money to be made. Having items and services delivered to your door makes a lot of sense as their mobility declines. However, there are unique obstacles for elderly persons who use the internet. Older people are more likely to have vision problems than younger users, therefore raising the text size on the website may be more appealing to them (Smith, 2018). Many younger users may have vision difficulties, poor memory, or be novice online shoppers. Successful e-commerce businesses will be those who will have a thorough understanding of and management of various demographics and their needs. For that, e-commerce companies must communicate with their users frequently, collect their feedback, and learn from both positive and negative experiences. All internet users are becoming older, and the younger users of today will be the senior shoppers of the future. is In years to come it will be competent internet users of today who are becoming elder shoppers of tomorrow.

Better Reach and Interconnectedness for Small Retailors

Small businesses can engage with a wider range of customers through e-commerce than they could through a physical store. E-commerce can even allow them to sell to people who live outside of your region or country.

Facebook released many advertisements under the tagline 'Dil Kholo, Duniya Khulegi[6] shows the power of the internet in spreading your business horizons and increasing your customer base. It shows, with the help of Facebook, how a retail carpenter gets furniture orders in abundance during festival season, a small garment manufacturer receives bulk orders for jerseys during a cricket match, a group of friends manages to get a sewing machine, some old clothes from the neighbourhood that results into a shop of refurbished clothes. Not only this, but the ad also shows how Facebook bring people together in difficult times.

A small brick-and-mortar store can't expect to attract more customers other than the one available nearby. Customers are not constrained by geography when it sets up an e-commerce site, on the other hand. They can sell to customers all around the world. Simultaneously, they must ensure that their consumer base can locate them and their items online. When a company is small, its website may not always be appealing enough to attract enough

[6] https://www.youtube.com/watch?v=gmW_MbtMSrY/.

customers. But e-commerce isn't limited to single websites; there are numerous commercial platforms available to all businesses, regardless of size. Platforms like Amazon and Etsy provide visibility as well as analytics tools and assistance with sales and shipment. Small businesses can now benefit from free or low-cost promotional possibilities thanks to e-commerce and the Internet. Advertising in the newspaper or on television has continued to rise in price, while physical advertising elsewhere might cost thousands of dollars. On the other hand, the Internet offers a plethora of options on a much fairer playing field. Regular posting on social media platforms such as Twitter and Instagram might help boost sales. The capacity of social media to persuade people to advertise for business is one of the best aspects of web marketing. Customers can help a business reach more people if they post about it on social media. Overall, e-commerce has simplified the procedure. Not only is it easier to sell as a small business online, but the buyer also benefits from the simplicity and convenience of doing so.

Mohammad, a Kashmiri shawl manufacturer, has made a living by selling items such as Kashmiri shawls online and avoiding middlemen. "Initially, we would get 10 orders every month," Mohammad adds, "but as time has gone on, it has climbed to 300 orders per month." Since partnering with an e-commerce site (Kashmir Box) five years ago, he has reportedly sold INR 50 lakh ($80,000) in merchandise and has even hired ten more artisans to fulfil the rising demand for his products, which he now distributes exclusively through the website[7].

Employment Generation

The e-commerce business and its ecosystem have a direct and indirect impact on India's employment landscape. People in the e-commerce industry are not only hired but are also upskilled through regular training and interventions. For at least a decade, if not longer, this industry would be the major employer. Because India is still a largely untapped e-commerce market, there is a huge growth potential for e-commerce businesses, logistics firms, Small and Medium Enterprises (SMEs), IT/ITeS enterprises, and startups, which is likely to boost the employment situation (Lata & Kumar, 2021a). Three to four employments might be produced in downstream industries for every job

[7] http://www.zdnet.com/article/e-commerce-enables-impoverished-indian-artisans-to-become-rupeemil-lionaires/.

created by the e-commerce business. By 2021, the e-tail and related ecosystem is estimated to generate 1.45 million job openings, driven by the logistics and warehousing industry, which is expected to generate over 1 million jobs (Technopak Report, 2013). By 2020, the number of online sellers is predicted to reach 1.3 million, creating more than 10 million net new jobs. E-commerce is having a major socio-economic impact by reaching the interiors of the country, with over 70% of online merchants predicted to originate from smaller towns by 2018-19[8].

People from many walks of life and ages can find work in the e-commerce industry. It's also proving to be a doorway into society for many disabled persons. Mirakle Couriers, a courier service in and around Mumbai that employs deaf persons who make up 99 per cent of the total workforce, is one such existing example[9]. The company has dabbled in e-commerce deliveries and sees this as a potential new development area. It has received numerous prestigious awards, including the Helen Keller Award for being a role model employer for persons with disabilities and the Indian Government's National Award for the Empowerment of People with Disabilities.

Negative Social Aspects of E-Commerce

These were some of the benefits which e-commerce has offered to society, but everything comes with both negative and positive aspects and E-Commerce is no exception to this. Though e-commerce has made an impactful and positive shift in society, we can see some negative effects as well.

Safety and Health of Delivery Boys

Men on motorcycles with a food box attached are a typical sight on Indian roadways these days, delivering orders to offices and households. On their backs, young boys carry such big loads.

With the growth of e-commerce and the desire for doorstep delivery of products ordered online, delivery employees have become the backbone of the e-commerce industry and play a critical role in last-mile delivery. Young and middle-aged males are mostly employed as delivery boys by third parties.

[8] http://gurcharandas.org/forget-the-jetsetting-modiji-just-think-jobs-2016/.
[9] http://www.pressreader.com/india/the-financial-express/20140915/281565173964654/.

Many of them are underserved by social security programmes. The nature of their jobs requires them to work long hours, which causes a lot of stress and exhaustion. Some of the general health concerns expressed by e-commerce delivery boys include back pain due to heavy load bag carrying materials, climbing multiple staircases etc. The other threats include injuries resulting from minor road accidents, getting the improper address of customers and long waiting for delivery.

In March 2021 a video went viral on social media where a woman named Hitesha Chandrani, a content creator and Instagram influencer alleged that Kamraj, a delivery boy of Zomato attacked her and injured her nose on March 9, after they got into an argument over a late delivery. after which the police arrested Kamraj. He was later released on bail.

A Day later, Kamaraj revealed his side of the story in a video of his own. With tears in his eyes, he insisted that Chandrani had refused to pay for the food, saying the delivery was late. He said an argument broke out after he told her she would either have to pay for the food or return it. He said her injuries were self-inflicted and caused by her ring when she was attacking him. After this incident Deepinder Goyal, CEO of the company, tweeted and wrote that they are in constant touch with both the parties and covering their medical and legal expense.

In December 2018, a video of a Zomato delivery boy wearing a red Zomato t-shirt pulling out a food box from his bag, taking a couple of bites, and resealing it before departing for his delivery destination became viral. Zomato took notice of this and conducted an investigation, concluding that the video was genuine. The company said the video was filmed in Madurai and the delivery man was immediately fired. The video sparked a lot of controversies, and the "act" was seen over 4 million times on social media platforms. Social media users responded in a variety of ways.

The incident, on the other hand, was an unpleasant revelation of the fact that the anonymous, unidentified deliverymen we take for granted are real humans who suffer a variety of challenges in their occupations, ranging from long hours and job insecurity to low pay and insufficient facilities. It's a pretty apparent fact that delivery workers, particularly in metro cities such as Delhi, Mumbai, and Bengaluru, are constantly under pressure to deliver goods on time. Every day there is news of delivery boys being attacked and robbed of money and parcels from them.

Packaging and Waste

The number of transactions and shipments is increasing as digital commerce grows (Kumar &Ayodeji, 2021b). There is a significant amount of packaging, garbage, and waste connected with shipping, mostly cardboard boxes and space-filling, protective plastic air cushions. The waste connected with packaging left behind after delivery is perhaps the most evident negative effect of e-commerce.

"Drowning in A Sea of Cardboard" and "Built on A Mountain of Cardboard" are some of the phrases that highlight the seriousness of the problem of waste produced by e-commerce. Amazon's Prime programme alone dispatched around 5 billion shipments in 2017. Recycling is often suggested as a remedy to all of this garbage, and although it is a viable option, it comes with considerable difficulties (Gupta & Kumar, 2010). There is a specific requirement which needs to be met for recycling the products. The materials which cannot be recycled are sent to landfills (Gupta, 2020).

But if see this against the waste which is produced in traditional retail commerce, it is not as bad as it seems. In retail channels also the shopkeepers receive products in cardboard boxes and further delivered them to customers in one or two packets including paper and plastic. These retailers also produce some more waste in terms of receipts, bills, advertisement flyers, catalogues etc.

Traffic and Emission

The increased vehicle traffic required to make deliveries is another highly noticeable negative effect of the growth in e-commerce activities. All of these items necessitate ever-larger fleets of planes and delivery trucks, which generate CO2 and worsen traffic congestion. More emissions are produced when the number of delivery vehicles and traffic increases. According to estimates, the rise in carbon dioxide (CO2) due to increased delivery traffic will be 32 per cent over the next ten years (Industry Agenda, 2016). This raises concerns among sceptics, but it also poses a health risk, particularly for residents of major cities, where poor air quality already causes numerous respiratory problems.

There is a dire need for government interventions in terms of environment-friendly packaging, off-peak delivery hours, electric delivery vehicles, and various other requirements. Though some companies have

started following these practices as an environment-friendly initiative there is a need for a stricter law.

However, when compared to traditional retail transactions, digital commerce is less destructive. Rather than travelling to and from multiple places to suit their needs, shoppers can order from a single online retailer and have their products delivered all at once on a single truck that is likely carrying goods for hundreds of other customers. Scholars have just lately begun to investigate whether the negative effects of more delivery vehicles have been countered by the benefits of fewer consumers on the road. However, the findings are mixed.

Energy and Resource Consumption

Increased use of delivery trucks on the road and cargo planes in the sky contributes to increased congestion and CO2 emissions, as well as increased use of non-renewable resources, particularly petroleum products, as fuel. It also has possible beneficial benefits, as previously stated. With just one delivery van on the road, many buyers may opt to stay at home rather than waste gas travelling to stores. Traditional retail commerce can consume a lot of electricity. One major use is lighting and signs, but the most significant is the air conditioning equipment required to keep shoppers and personnel comfortable. Fountains, garden irrigation, and restrooms all use a large quantity of water. Fewer stores also mean fewer paper items in food courts (producing trash from paper sacks, tray liners, and napkins), fewer store signage and fliers, and fewer chemicals and cleaning supplies for toilets, floors, and windows. All of these are substantial e-commerce social and environmental benefits.

Companies are also investigating the possibility of collecting and returning packaging from end users for reuse. Other businesses are focusing on designing packaging that is biodegradable rather than focusing on its return. Legislators are exploring at least two major initiatives to reduce traffic and emissions, particularly in large cities: restricting delivery times to night hours only (i.e., outside of normal working hours) and requiring the use of electric delivery vehicles.

We cannot give a definite answer to the question of whether e-commerce is a cost or a benefit to society. Although some serious negative effects exist, the benefits outweigh them. Society is reaping more benefits from negative impacts, which means increased consumer, social and environmental benefits

against less harm. E-commerce companies and the government with their policies and practices are making constant efforts to reduce the negative impacts of e-commerce and we can expect that soon they will be able to remove all possible pitfalls (Lata & Kumar, 2021a).

Ethical Aspects of E-Commerce

Privacy Is a Myth

Whatever we do or search on the internet is being observed and recorded. Have you noticed that if you google search on a particular topic, soon after that you will start getting advertisements related to that product or service? Off lately I started doing yoga and to better understand it I searched on google about various yoga poses and then the next moment I see on my Facebook page a couple of advertisements related to various fitness apps which are selling their yoga programs. Even if you don't want to see them, they will keep appearing on all the internet pages, whatever and whenever you open them. That is because of artificial intelligence (AI).

You will have to give information about your mobile number, email Id etc., and keeping your data safe is another ethical implication for -e-commerce websites (Kumar & Nanda, 2022). We all use social media. There was news in the month of May that large social media players like Facebook, WhatsApp Twitter etc may be banned by the government for not following the new IT Rules 2021. These new rules require the company to appoint a chief media officer who can give information about any user to the government if asked. What does that mean? Have you noticed whenever you send a message on WhatsApp, there is a message shown-'your messages are end-to-end encrypted, which means the message is encrypted on the sender's system or device, and only the intended recipient can decrypt it, which prevents third parties from accessing data while it's transferred (Lata & Kumar, 2022)? If WhatsApp accepts the New IT rules 2021 as imposed by the government, then our messages will no longer be end-to-end encrypted. There will be no anonymity, all the messages can be traced and the original sender of the messages also can be easily identified. So, in the world of the internet, Privacy can be a MYTH (Lata& Kumar, 2022).

Internet Abuse, Responsibility and Use of Personal Information

When we visit an e-commerce website, it frequently stores identifying information, such as a cookie file, on our computer's hard drive without our knowledge. Cookies are commonly used to save information such as which website we were on previously and where we go when we leave a website. This data can then be merged with cookie files from other e-commerce sites to provide businesses with a full account of entire multi-site web purchasing sessions.

While making online purchases, customers are required to provide various personal information such as name, address, birthday, phone number, and credit/debit card information. Storing and securing customer data, and not sharing it with third parties are the main ethical concerns in e-commerce.

Deception, Dishonesty and Accuracy

When an e-service provider uses deceptive techniques to persuade consumers to buy e-products, such as intentional misrepresentation and false representations regarding products and services, this is referred to as deception. Customers are unable to touch the object they wish to purchase. They will examine photos and videos of the goods, which were clicked in optimal lighting, with photoshop processing and artistic touches. They will read the description, which may tell nothing (or a lot) about the goods. Customers shopping on the internet may not see the precise item they will receive. As a result, it's critical that you attempt to list your products as fully, totally, and honestly as much as possible. The original product should be delivered exactly as shown on the website and as per the quantity ordered. It is not easy for internet users to click on the buy button. Confidence is an obstacle in realizing the potential of e-commerce. Thousands of e-commerce websites offer a wide variety of products and services. But are we comfortable placing an order on any random website…? No, and the reason is 'trust.' We are most familiar with big names like Amazon, Flipkart, Myntra etc. Because they have established trust among their customers.

Companies that ethically conduct themselves are more likely to build confidence and maintain business transactions in the internet world. Ethical marketing is made possible by a general commitment to consumer happiness.

Selling Counterfeit Products

We have already discussed the importance of having correct product listings. But what about the actual products? Do you know if the items that you're selling are genuine?

Third-party suppliers, drop shipping, and other dynamic order fulfilment strategies available today can provide a lot of value to the company. They do, however, entail some risk. How can you know where a thing comes from if you buy it from someone who isn't the manufacturer? You must take steps to ensure that you are selling genuine goods. Here are some steps companies may take to safeguard their business and customers from fake goods:

- Check what you're selling.
- Verify with the manufacturer
- Only work with trusted suppliers

The case of Nykaa is worth mentioning. Nykaa is an e-commerce startup that sells personal care and cosmetic products. They display authenticity certificates for all of the brands sold on their website, which helps to ensure that the products are genuine. Customers can shop with confidence on Nykaa since they don't want to endanger their hair and skin by buying fake or counterfeit products.

Conclusion

In both e-commerce and brick-and-mortar businesses, intellectual property is a concern. Earlier, Music fans used to buy music on cassette tapes or compact discs (CDs) from stores. And further, they used to duplicate their purchased music on cassette or CD and share it with their friends. This was unethical and illegal. Since sharing and copying electronic media is easier, the possibility of copyright infringements is outweighed by the prospect of -e-commerce. Companies that are believed to behave ethically are more likely to build confidence and retain business interactions in the internet world. Ethical marketing is made possible by a general commitment to consumer happiness. E-commerce ethics and brick-and-mortar company ethics are fundamentally the same, but e-commerce challenges take on different forms and have a broader scope. In the context of e-commerce, we see an ethical lacuna. When

the rate of technological progress outpaces the rate of ethical development, ethical lag arises. We are unable to provide a definitive response to the question of whether e-commerce is a net expense or benefit to society. While there are some major negative consequences, the overall advantage is greater. There's a case to be made that society can get more out of less, which means more consumer, societal, and environmental advantages with fewer total resources.

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Chapter 11

Traditional to Digital Commerce: Impact of Scams on Consumer's Attitude towards Online Shopping

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Abstract

With the proliferation of modern e-commerce, many demerits of traditional commerce were eliminated, but a number of limitations also got emerged.

From the usage of internet for online transactions which demand the sharing of financial personal details puts a question mark on the security, though the online platforms and applications developed for these transactions claim utmost security. The proneness to digital scam still remains a big challenge to be addressed. As the platforms are formed between the user and bank interface, these platforms undoubtedly give space to hackers and frauds to leap in making the customer population fall into the trap of looters.

This chapter conceptualizes the psychosocial effect on the attitude of the customer towards online shopping and digital marketing themes after being a victim of scams during online transactions. Safety measures have been presented to support the positive attitude of customers towards the e-commerce.

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Introduction

Commerce when backed by internet changes the world scenario. The start of commercial activities is traced back to times when the money factor did not exist; rather, the commodities were exchanged between the people as per their demands and need to fulfil the requirements of all. This method was called 'barter system' (Ozgul, 2019). But gradually, some loopholes present in the system gave rise to the development of next system of exchange called the 'Monetary system' (Poskart, 2020). Money was introduced as the catalytic factor between the buyer and seller for the completion of transaction. This enabled them to give or take the required item irrespective of the availability of the item, at any point of time, store the more required items and an open market to the other scope of exchanges. Money also served as the unit to label the value of any item or service with a standard rule (Poskart, 2020). Now before further development to current trend of online and digital commerce through use of technology and internet, these exchanges of items via money was the commonest way of commercial transactions even for national and international purposes, political, defence reasons. But after the development of internet and ignition of its utility in the commercial world, the mode of commercial transactions shifted largely. These shifts can be termed as eras of commerce.

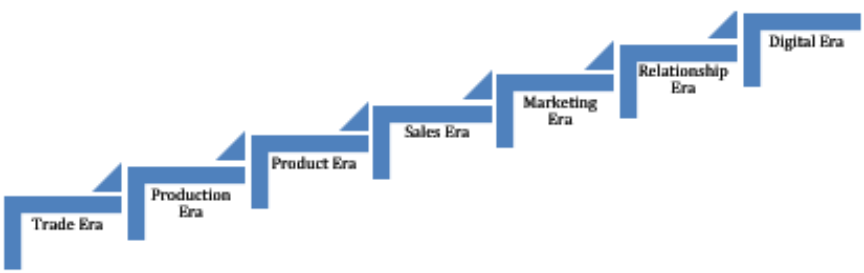

Figure 1. Process of change from traditional to digital marketing.

Here, the Trade Era consisted of handmade products leading to less quantity of products. Then came up the Production Era which had mass production with low price while the Product Era introduced changes in the quality of the products. Next came in the Sales Era in which the producers

came in to competition and made strategies to enhance their sales and profit. This competition rose due to high level of products and varieties in the market. In the Marketing Era, to enhance the sales and as per the rising demands of the consumers, marketing strategies were made and applied to attract consumers, while in the Digital Era which is currently in race, the main focus is on the real time and social exchange based on social interactions and online platforms (Bhatia, 2019). The evolution of digital marketing from the traditional era of marketing has been depicted in Figure 1.

Emergence of E-Commerce

Despite the benefits of monetary system of trade and commerce, some of its limitations like insecurity, chances of human error in calculation, transaction, problem in trading from distant parties etc gave way to use new form of financial transaction namely Electronic Commerce, commonly known as e-commerce (Bhatia, 2019; Kumar & Ayodeji, 2021). The e-commerce includes all the activities done related to trade, business, finances, marketing etc. between or among two or more than 2 identities - be it individuals, organisations or firms through internet (Karakaya & Charlton, 2001).The emergence of e-commerce came to life in 1979 when the internet was first merged with commercial transaction by demonstrating first online shopping system by Michel Alderich (Tkacz & Kapczynski, 2009). It did not take much time for the commercial transactions to take the support of internet (then a new concept) for self-development and broadening. During the late 1960s and early 1970s, internet was taking its shape as the pioneering researches for development through ARPANET (Advanced Research Projects Agency Network) (Karakaya & Charlton, 2001).

Gradually, the availability of internet expanded from the reserved rights of the financial institutes and organisations of political importance towards the general population. By the late 1980s, the usage of internet started to be widely used (Lata & Kumar, 2021b). This usage included surfing, e-mails and also online shopping. The major online merchants which provided products to the consumers via online shopping were amazon and e-bay during 1990s and which are still progressing in their fields (Kumar et al., 2020). The e-commerce unlike traditional commerce offers options to the consumer like online purchases of products like (amazon, flipkart, myntra), online services (paid software downloads). It also offers participation in online marketplaces, business to business transactions, data collection and analysis through digital

contacts and social media and digital marketing including online advertisements and prelaunch of products etc (Reynolds, 2000; Lata & Gupta, 2021). Though the e-commerce seems to have opened lot many ways to develop the global economy but still has some loopholes. These limitations need to be addressed to support the futuristic applications of E-commerce.

Digital Era and E-Commerce

In the shifts from sales era to marketing, then to relationship era and digital era, the role of e-commerce is continuously increasing in each stage. As the names goes, the digital era and e-commerce interconnect and supplement to each other because both are ruled by the internet. The digital platforms are now being usedby a lot of trading merchants for sale and purchase purpose be it B2B (Buyer to Buyer), B2C (Buyer to Consumer), C2B (Consumer to Buyer) or C2C (Consumer to Consumer) (Bhatia, 2019). Like the traditional shopping methods, online shopping also gets completed when the final financial transactions are done between the seller and the consumer. Digital marketing, online shopping and online financial transactions have undoubtedly influenced the marketing style and largely replaced the traditional marketing. The consumers are now not bound to stay physically present in the marketplace and make out special time for the shopping purposes. In simple words, digital marketing can be explained as method to expose the products of various brands to a large group of potential customers with the aim to communicate with them, via promotions, social media, online advertisements etc. and make the marketing procedure complete online along with financial transactions done (Viteles & Brief, 1932).

Though the online method also demands notable time but is relatively and significantly less hectic. The digital marketing has both benefits and negatives as usual but a large number of financial transaction methods have started to give way to frauds and hackers which increases the probability of drastically impacting people's lives.

Table 1 reports clearly indicate that the online mode of transactions or e-commerce is developing in a great speed and also the fact that people are highly open to this system. Such approach also has some major reasons like (1) Urbanisation (2) Migration of people for white collar jobs which make them economically strong enough for making online purchases frequently. Such high pace of use of e-transactions indicates the amount of trust and reliability of people on the apps and online platforms that they share their

personal financial details with the mediating applications like Google pay, paytm, Amazon or any other used for online transactions except the government authorised banks.

Table 1. Major achievements of e-commerce in 2010-2020

Year	Achievement
2010	Highest per capita e-commerce spending in United Kingdom.
Year	Achievement
2012	Sales through e-commerce topped $1 trillion. International transactions between china and other countries rose 32% accounting to 9.6% of its total international trade.
2013	Online platform Alibaba had market share of 80% through e-commerce in China. Czech Republic got biggest contribution of total revenue from e-commerce with 24% turnover. Brazil e-commerce expected to have growth at double digit pace by 2014.
2014	With highest population, china became biggest online market.
2015	10% of total retail sales were through online shopping in China ($253 billion). Above 50% e-commerce growth is accounted by amazon.
2016	China also became the largest e-commerce market by value of sales ($899 billion). India launched BHIM UPI fordigital payment interface.
2017	Retail sales through e-commerce reached $2.304 trillion.
2020	The BHIM UPI made 2 million digital payment transactions in India.

Digital Era and E-Commerce during the Pandemic

During the COVID-19 Pandemic, it was worth noting that the consumers who initially relied more on tradition shopping or sale/purchase system were compelled to use digital marketing and online shopping for self and others safety purposes (Kumar & Gupta, 2021; United Nations Conference on Trade and Development [UNCTAD], 2020). Due to the imposed lockdown in almost all the countries of the world, shutting down of the local-markets boosted up

the use of online methods of shopping and having financial transactions done online (Kovid & Kumar, 2022; Kumar & Malhotra, 2021). E-commercial advancement immensely helped people go through the hard pandemic times for getting the survival requirements. Getting items like groceries and other items at the door-step did prove that the online shopping and digital marketing methods appeared as a boon to the mankind during pandemic (Sheth, 2020).

Loopholes in Online Payment Giving Way to Scams

The online transactions involve the give and take of money without the hard cash in hands. It is associated with numerous benefits like convenience, security, discounts to name a few. These cashless transactions mostly takes place either through services provided by their respective banks like credit/debit cards, cheques, Demand Drafts, National Electronic Funds Transfer (NEFT) or various e-payment application platforms be it government owned or private companies. The latter services mostly use an application generated UPI ID (Unified Payments Interface), along with the other common online payment platforms like e-wallets etc. The working system of these platforms are like being a mediator between the spares bank account and the receiver's bank account (Kaushik & Puri, 2012). The personal details of the user provided to the bank are available with these payment applications. Though, these applications do take the permissions of having data from the individual as agreement while installing the application (Kaushik & Puri, 2012).

Initiatives for developing online transactions launched by the Indian government like (BHIM UPI – Bharat Interface for Money-Unified Payment Interface) or the private companies (paytm, phone pay) etc has significantly lowered the workload due to cash transactions in hard form. But unfortunately, the online platforms providing the services of financial transactions are not still viewed as the safest method for consumers regarding their financial security. With the emergence of cashless payment platforms, the banks of the consumer do not work in the front line for getting the online transaction completed. The UPI-IDs provided by the payment platform works as the main medium between the bank accounts of the creditor as well as debtor (Kaushik and Puri, 2012). It is common that the registered phone numbers of the user is used to link the UPI ID making the registered phone number highly vulnerable. The vulnerability of mobile number works as the loophole for digital attackers to hack and misuse consumer finances (Kumar and Bhardwaj,

2018). Though, India has the highest percentage of population as youngsters, but the mobile application users are not confined to this group. The uses include elderly people who are not that technically efficient and ignited regarding the novel methods and features launched regularly by these applications.

This gives direct loopholes to the frauds and technical hackers to loot the consumers. As all the online transactions are done via internet connections where all the confidential data are saved in an online traceable source (though highly guarded by government intelligences and security) (Lata & Kumar, 2022), it is obviously not 'impossible' for any professional or technically skilled person to actually get to the bottom of the data source. Growing revenues has increased the instances of fraud which has become one of the most concerning issue in e-commerce now.

The financial losses faces by the consumers due to such hackers do significantly change the attitude of the people towards the online shopping and transaction methods from positive to negative. It is natural that the investment of time or energy in visiting the place and choosing the products own-self is much cheaper than having the complete bank account hacked and emptied by an unknown brute for no reason other than a few steps of online clicking.

Scams and common types: Scams or fraud in online transactions is basically of any sort of illegal and illusive monetary transaction persuaded by one person over the other by making him directly or indirectly make the payment to any false account where the payer may or may not be intentionally doing the act. In other words, e-commerce frauds are illegal transaction performed by a fraudster using hacked confidential private data of the victim in latter's ignorance, sometimes called purchase fraud. It has been found that the number of online shopping frauds registered with the National Consumer Helpline has hiked almost six times from FY17 to FY20 (Christensen & Low, 2003).

Some of the general possible reasons for increase in fraud can be like the rural working area gives less information to the customer making the fraudsters easy to fool them, hiring unethical employees with undetailed background check etc. With everything gradually changing into digital form with the help of Artificial Intelligence, fraudsters are getting more easy ways to derive novel ways and become more sophisticated with the technical tricks and hacks which helps them to fool common man with novel styles of loot method (Lata & Kumar, 2021a). Till then the security advisory spreads in community from the national portals like cyber-crime cell etc. these hackers already make large amounts to their profits. The scams are not a few in

numbers making the task much harder for every man to get aware about before getting hit by at least any one of them. During the Pandemic time, no doubt each man is hit by the financial crisis, be it in low proportion or heavy loss, hundred thousands of people went unemployed due to imposing of long term lockdown (Lata & Gupta, 2021).

Common Digital Frauds

1) *Identity Theft:* In this, the fraudster obtains and misuses personal confidential information of another person (Bhardwaj and Kumar, 2014). Not only consumers but also merchants are effected by such frauds. One sub type of identity fraud is the account takeover, in this the fraudster uses another user's account and engages in unethical and illegal activities like purchasing and selling illegal items on the account of some other person.
2) *Chargeback Fraud:* Also called Friendly fraud mostly headed by frauds as consumer. Keeping the goods purchased online, the fraud still asks for refund claiming that either the purchase has not taken place or the payment has been made twice mistakenly or item not received.
3) *Clean Fraud:* Clean fraud happens through stolen credit cards. The stolen card and card holder's information is used to commit the fraud which looks like a legitimate purchases.
4) *Phishing:* Unethical collection of personal information of a regular user by a fraud person through fraudulent SMS or email is called Phishing (Bhardwaj & Kumar, 2022). This information are then used to make an online purchase illegally or without the owner's knowledge. Most cases includes email or SMS demanding user ID, passwords, credit card details etc before debiting bank account. Where, the sender institution seems to be credible and authorised claiming information due to a change in the system.
5) *Triangulation Fraud:* Triangulation fraud involves creating fake online shop offering products at very low rates than usual which are actually meant to confidential financial data of the customers. After the consumer places the order, the criminal places orders of the real

product from the real seller using the stolen financial information making the actual consumer pay twice for the good.

6) *Refund Fraud:* In such fraud hacks, the fraudster makes purpose overpayment using someone other's credit card. Then the selling firm is contacted to inform and trace back the accidental overpayment asking for repayment. The fraud also blocks the credit card and requests the firm to pay through any alternative method making the firm repay the full amount along with the fact that the credit card does not receive the actual payment.
7) *Card Testing:* Card testing fraud is a well-known fraud method for which much awareness announcements has been made by the various respective banks from time to time. It involves the practice of creating and testing credit card validity in order to use it illegally. The fraudsters' calls acting as a banker of any common bank asking for details of the card claiming that the expiration date of the card is nearing and he/she will renew it instantly if the details are given to them. Also the PIN (Personal Identification Number) of the Credit/Debit card is asked by the holder along with OTP (One Time Password). After getting the information, the customer receives the SMS that the complete account has been emptied.
8) *QR Scan Scam:* This scam involves the QR Scan code sent by the fraud in the form of customer to the seller while making the payment which the seller is told to scan. As this activity is followed by the sellers account show debit option, the fraud defends that some new technical method has come up which requires this process to be completed. As soon as the seller scans the QR Code, the account of the creditor gets empty (Christensen & Low, 2003).

Impact on Attitude

The increasing rate of e-commerce fraud in online transactions definitely has its negative effects on the financial status of the people as they probably lose their hard earned money in seconds. Such financial blow hurts the psychological as well as social strength of the person greatly. These strengths include loss of self-esteem, needs of safety and security as per the Maslow's Hierarchy of motivation. Decreased motivation has the potential to reduce or

tilt the trend or interest of consumers on online shopping. Apart from this, increment in anxiety, stress and fear; development of guilt, worthlessness and a hit on the power of resilience proving it to be a traumatic experience (Whitty & Buchanan, 2016).

People may develop negative attitude towards online shopping and transactions based on past experiences and also may not promote it further. Such advancements are not in support of enhancing e-commerce rather may work as future hindrance. Hence, major steps needs to be taken to remove the fraud incidences in order to maintain strengthened e-commercial transactions and digital marketing.

Detection and Safety: Safety from such high tech fraud systems needs the consumers to increase their awareness and know more about the novel methods to frauds as early as possible so that the consumer becomes capable to defend themselves from getting into the clutches of fraudsters. Some detection methods have been suggested below:

- First-time shoppers on an online website must have someone experienced by their side.
- Large quantities of products must not be bought in a single go.
- Consumers must remain suspicious and curious regarding unusual announcements like great sale, really early shipping, free vouchers etc.
- Getting the delivery of goods to any suspicious address.
- The mismatch between shipping address and IP address of the merchant or customer should be checked on rigorously
- Using multiple ATM cards on a single IP address should not be overseen.
- Multiple transactions in a short amount of time should be noted and enquired for.
- Never give personal details or confidential financial information.
- Shop only through verified original sites.
- Use fraud detection and management software.
- Fraud awareness sessions for employees and customers.
- Don’t follow the steps as told by the debtor.
- Multiple orders to the same account using different credit cards or multiple purchases to a single credit card in a short time should be checked.

- Passbook updates should be made regularly.
- Phone numbers should match the billing address's area code.

These initiatives can definitely help and safeguard an individual from getting victimised by the online fraudsters and stay financially secured despite of using online mode of transactions.

Conclusion

The increase in digital marketing has supported both the sellers and the buyers, but it has also offered a playground to the fraud callers and hackers in aiming their online victims in a variety of ways.Along with the various common types of e-commerce frauds which regularly loot genuine customer and sellers, its negative impact on the attitude towards online shopping and financial transactions has been discussed. Negative attitude towards e-commerce is not a green flag for any developing country making it a must to dal strictly with the fraudsters and disabling them to carry out more technical ways of harassing people. Hence, a lot of work is still required to increase the trust users in e-commerce and support its futuristic growth.

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THE FUTURE OF E-COMMERCE

The book offers a futuristic outlook of e-commerce, covering the latest developments, applications and technological trends. Analytical perspectives of e-commerce has been presented with examples of social media analytics and web analytics. The role of artificial intelligence has been explored with the implementation of machine learning methods. Case studies and examples have been integrated from different parts of the world to identify the customer centric approaches of e-commerce models in the near future.

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