Analysis of Current and Future Trends in E-Commerce

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Abstract:
Through this paper we seek to assess the potential changes taking place in the present as well as future times in the domain of e-commerce. Findings: Analysis of trends and data in e-commerce shopping has indicated towards a drastic change in the existing business value chains and methods of doing business through increased adoption of technology. The huge strides that e-commerce has made is mainly due to their ever increasing focus in being Client-centric. Mobile and social commerce have been taking a bigger chunk of e-commerce space day-by-day. There is an ever increasing need to constantly upgrade the technologies and methods in e-commerce, along with the customer experience and convenience. This is achieved through many technologies like big data analytics, search engine optimization, etc. Big data has helped businesses identify events before they occur (‘predictive analytics’). Also, successful adoption of advances in technology has played a key role in development of new channels for payment initiation, improved authentication and efficient processing of payment systems. Search Engine Optimization is also an emerging method which helps us optimize the website to stand higher in search results(e.g. Google, Bing). Many big companies have switched to SEO to optimize their websites for Google and attract good quality traffic in large volumes.

Keywords: Client centric, SEO, Big Data, Mobile and Social Commerce, Payment systems.

I. INTRODUCTION
The growing creations and innovations in the field of technology have greatly influenced the way of doing Electronic business. The varied inventions have led to a variety of data formats and conventions of communicating and sharing data over the business and user community all over the world. Even though many standardization efforts were attempted, data problems still prevail and prevent e-business in achieving its complete potential. In this globally connected world there are a lot of barriers in managing business processes with different data exchange formats, vocabularies and structures. The rise of social networks, the mass adoption of mobile technology and the sheer breadth of global companies is transforming how consumers research products and make purchase decisions.

Objective of the Study
• To assess the changing trends in E – Commerce and its impact on Business models.
• To explore the upcoming Information technologies and tools of E – Commerce.

Research Methodology
As the area of research is very broad and sources of data are also spread across multiple locations the study is qualitative and descriptive in nature and most of the data is based on secondary sources of survey data. To arrive at the larger picture on E- Commerce Trends and its enabling technologies and tools, analyzing the existing survey data and specific successful case studies of Business Information Systems would give a better result in finding the answers to the research question framed.

E Commerce Trends
The concepts e-commerce and e-business are often mixed up. E-business can be acknowledged as the ability of a firm to electronically connect, in several ways, multiple organizations, both internally and externally, for many different purposes. E-business covers the application of Internet technology (internet, intranet, extranet) in all aspects of the business world. This involves, apart from e-commerce processes, for example Internet and service providers, and providers of market places and reversed auctions. The Five e-commerce marketing trends1 that dominated in the past few years are summarized as follows.

• Prominence of Content Marketing: Only original and informative content shall be ranked high in Search Engines (SEs).
• Merging of SEO and Social Signaling: Online Ad rates shall be impacted highly only by consumer relevant content extracted by SEs and also with high content sharing by consumers.
• Diversification of Social Media Marketing: With increasing Social media channels like Instagram, Line, etc. apart from Facebook and Twitter, brands will have to diversify their networks.
• Increase in Mobile Marketing: With increased usage of Mobiles, development of user friendly and error free mobile apps, mobile marketing will explode.
• Growth in Remarketing Ads: Cross-device advertising enables the product to follow the customer effectively by using innovative advertising platform like Atlas (FB).

II. ANALYTICS
Although gathering consumer data is great, analyzing the data is what gives e-commerce companies a distinct advantage. E-commerce companies leveraging big data analytics can understand their customers’ purchasing behavior in the context of current market trends. Data analytics is the science of analyzing raw data in order to make conclusions about that information. The techniques and processes of data analytics have been automated into mechanical processes and algorithms that work over raw data for human consumption. It
also helps a business optimize its performance. Text analytics techniques are mainly used for information extraction and opinion mining. NER (named entity recognition) for classification of data and topic modeling algorithms are currently researched in a very large way. With Social media and its impact on various aspects of business and day to day life, large amounts of data produced from blogs, social forums, and networking websites can be analyzed using Web Analytics. The company can get valuable insights on products, services, customer feedback, and the government can attempt to tap public opinion on societal needs and feedback on government reforms and programs. Predictive analytics can help companies develop new strategies to prevent shopping cart abandonment, lessen time to purchase, and cater to budding trends. Likewise, e-commerce companies use this data to accurately predict inventory needs with changes in seasonality or the economy. E-commerce depends on stocking the correct inventory for the future. Big data can help companies prepare for emerging trends, slow or potentially booming parts of the year, or plan marketing campaigns around large events.

### III. SOCIAL COMMERCE

Social commerce involves multiple disciplines, including marketing, computer science, sociology and psychology. Social networking on web portals is one of the primary pillars that led to the rapid explosion of social commerce and user participation is essential to its survival. Social Commerce is defined as the ability to purchase products from within a social media platform.

Traditionally, brands used social media as a tool to direct potential customers to their websites, where they could complete their purchase. However, with the advent of social commerce, customers can complete their transactions from directly within social media platforms, thus eliminating that additional step that often makes a successful sale more difficult. Social media applications are designed by using the principles of social media design, namely the three building blocks: Identity, Conversation, and Community.

Content based advertising, highly targeted searches and personalized recommendations indirectly make it possible to accomplish the long tail marketing concept in reaching customers of niche markets. Social commerce differs from e-commerce in many aspects, including business models, value creation, customer communication and connection, system interaction, design, and platforms.

Use a four-component model to analyze the various facets of social commerce movement. In view of the multidisciplinary nature of social commerce, the model emphasizes people and information, in addition to technology and business. People are viewed as the driving force for socialization, commerce, technological advancement, and information creation and use. In social commerce, people may be individual consumers and sellers, be in small or large groups, or be in identifiable user communities that benefit from the technologies.

Zhou, Zhang and Zimmermann propose a research framework with an integrated view of social commerce that consists of four key components similar to Wang and Zhang et.al. business, technology, people, and information. The framework helps us understand the development of social commerce research and practice to date (refer Figure 1).

### IV. BIG DATA

The growth of big data analytics (or BDA) is the new frontier of innovation and competition in the giant spectrum of the e-commerce landscape. Big data has thrown up new challenges and opportunities, which have been forged by the information revolution. In this infographic, we explore a variety of ways that businesses are currently using big data in e-commerce. Some key uses of big data and analytics for online retailers includes, Personalization, Logistics, Customer Service, Managing Fraud, Dynamic Pricing. A price recommendation engine requires taking data from multiple sources, such as competitor pricing, product sales, regional preferences, and customer actions, Predictive Analytics. With increasing small shopping malls and small business which are also using web based purchase channels, the possibilities of analyzing user behavior, strategy formulation, daily best price recommendation, etc. can also be explored using statistical analytics tools like R based on associations rules, classification analysis, and RFM (Recency, Frequency, Monetary value).

#### Need for Big Data: E-commerce has seen 5 years of growth happening in just 90 days during the height of the COVID-19 pandemic. And as the popularity of online shopping keeps growing, a tremendous amount of data is generated, which further propels the market's growth. Contextual and programmatic advertising, one of the upcoming trends in this industry, uses these data sets to identify target customers. In India the usage and application of Big Data Analytics is still in a very nascent stage. Some of the likely and needed sectors in India of Big data analytics include agriculture, banking and governance. E – Commerce Trends and Future Analytics Tools and healthcare. For example, in a country like India with agriculture as the backbone, with precision farming and predictive analytics, farmers can get most up-to date farming and propagation techniques, pest control knowledge, and can also track the whole process from production, distribution to consumption.

#### Database classes: One aspect that makes non-relational, or NoSQL, databases unique is the independence from Structured Query Language (SQL) found in relational databases. NoSQL databases are typically designed to excel in one specific area: speed. To do so, they will use techniques that will seem frightening to relational database users such as not promising that all data is consistent within a system all of the time.

**Figure 1. Integrated View of Social Commerce**
MapReduce: MapReduce is currently the shiny new thing when it comes to big data, and a lot of big data technology relies on this programming interface.

Enterprise search: Enterprise search products, such as ElasticSearch, Apache Lucene, and Apache Solr, use a concept called facets that enable you to treat data within documents as you would the fields within a relational database.

V. PAYMENT SYSTEMS

According to Harish Natarajan, in the report on findings from the World Bank survey on innovations in retail payments over the last five to six decades shows the following trends:

• Successful adoption of advances in technology has played a key role in development of new channels for payment initiation, improved authentication and efficient processing;

![Figure 2. Payment Process in Retail and Online Sales.](image)

• Development of new payment needs like at transit payments, Internet auction sites, and social networking sites recently and a need for expanding financial inclusion also have led to creation of new payment mechanisms.

• Payments infrastructure created for one payment product have been successfully leveraged for other payment products – like using Automated Clearing Houses (ACH) for online banking enabled payments and successful leveraging of infrastructure created for credit cards and debit cards. Electronic cheques and bank transfers involving higher value transactions are significant features of business-to-business (B2B) segment and whereas cash /card based low value transactions are significant features of the business to consumer (B2C) segment. One way to categorize innovations in retail payments is to look at the payment process. Typically, the overall payment process or payment scheme is described as a four-party system consisting of the payer, the payer’s PSP, the payee and the payee’s PSP as depicted in Figure 2.

VI. FUTURISTIC E-COMMERCE TECHNOLOGY – CLOUD COMPUTING

Cloud computing can be seen as the development of Parallel Computing, Distributed Computing and Grid Computing. Cloud Computing can be defined as collection concepts in several research fields like Service Oriented Architectures (SOA), distributed and grid computing.

In Cloud Computing, the three complementary services, Hardware-as-a-Service, Software-as-a-Service (SaaS) and Data-as-a-Service (DaaS); together form Platform-as-a-Service. There arises complexity in selling the Cloud service in the market place, as the traditional business value chain which is more like product based approach does not suits cloud computing in which many actors are involved.

VII. CONCLUSION

With global expansion in Big data, application and usage of Big Data Analytics tools is not only restricted to E-commerce and Business decision making, it can also be expanded to Government and Society (G2C, G2G) centric practical applications, utilities and decision making, like tax evasion prevention, Congestion pricing, intelligent transportation information system, Safety Monitoring, disaster sign information. In India the recent impetus given by the Government of India for compulsory AADHAR (Citizen) card and proposed investments for building (IT enabled) smart cities across India is a welcome sign for utilizing the power of Big data analytics for citizen benefit, energy efficiency and better governance. With increased pollution levels in cities and the need to reduce Greenhouse gases, smart cities are the ideal solutions for the future generation to utilize regional natural resources for the energy conservation, smart water management and mitigation of waste. The inception of big data may be growing exponentially and advancing technology may allow the world economy to store and analyse ever greater quantities of data, but there may be limits to our innate human ability—to our sensory and cognitive faculties—to process this data torrent. Also the human capital and training needed for handling big data related work activities face huge shortages in the near future.

VIII. REFERENCES


