A Project Report on

## E-Book Portal

*Submitted in partial fulfilment for the award of the degree of*

## DIPLOMA

**In**

## Computer Engineering

### By

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**2022-25**

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This is to certify that the Project Report entitled “**Desktop Navigation Using Facial Gestures”** submitted by **Ambati Narendra Pavan (22243-CM-001), Pilli Kiran Teja (22243-CM-040)** in partial fulfillment of the requirements for the award of the degree of Diploma in Computer Engineering from **SRI VASAVI ENGINEERING COLLEGE,** Tadepalligudem, affiliated to the *Jawaharlal Nehru Technological University Kakinada(JNTUK),* is a record of bonafide work carried out by them under my guidance and supervision during the academic year 2024-2025.

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**DECLARATION**

We hereby declare that the project report entitled “**Desktop Navigation Using Facial Gestures**" submitted by us to Sri Vasavi Engineering College(Autonomous), Tadepalligudem, affiliated to JNTUK Kakinada in partial fulfilment of the requirement for the award of the degree of B.Tech in Computer Science and Engineering is a record of Bonafide project work carried out by us under the guidance of **N V Muralikrishna Raja, MTech(Ph.D), Sr.Assistant. Professor**. We further declare that the work reported in this project has not been submitted and will not be submitted, either in part or in full, for the award of any other degree in this institute or any other institute or University.

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**ABSTRACT**

**With the advent of technology and with growing occupancy of the people towards it, online shopping has become the need of the hour. With heavy discounts floating over the e-commerce websites, customers find that online shopping allows them to save both time and money. The e-commerce websites on the other hand seek to avail the early advantage of the frequently visited customers through the recommendation engines by using gamification techniques. This tends to make their products highly attractive with the least cost paid by them along with facilities of extra discounts given to debit/credit card holders. This article provides a coherent picture in the research that has taken place in the area of gamification by comprehensively reviewing 1073 research studies extracted from the SCOPUS database and mostly validates the findings on the effectiveness of gamification in the various fields.**

**This article also peer reviews the various motivating factors that makes customers prefer gamified online shopping over market retailers. The review points out the effects of gamification in e commerce websites in gaining customer retention. The article would also suggest the future of research directions in the field of research of gamification and further research that can be explored in the field.**

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# **CHAPTER-1 INTRODUCTION**

##### **CHAPTER-1**

* 1. **INTRODUCTION**

**The term Electronic commerce (E-commerce) refers to a** [**business model**](https://www.investopedia.com/terms/b/businessmodel.asp) **that allows companies and individuals to buy and sell goods and services over the Internet. Ecommerce operates in four major market segments and can be conducted over computers, tablets, smartphones, and other smart devices. Nearly every imaginable product and service is available through ecommerce transactions, including books, music, plane tickets, and** [**financial**](https://www.investopedia.com/ask/answers/030315/what-financial-services-sector.asp)[**services**](https://www.investopedia.com/ask/answers/030315/what-financial-services-sector.asp) **such as stock investing and online banking. As such, it is considered a very** [**disruptive technology**](https://www.investopedia.com/terms/d/disruptive-technology.asp)**.**

**E-commerce originated in a standard for the exchange of business documents, such as orders or invoices, between suppliers and their business customers. Those origins date to the 1948–49 Berlin blockade and airlift with a system of ordering goods primarily via telex.**

**WE are living in E-century. The Internet and information and communications Technologies (ICT) are central to economic growth and productivity. Internet- based technologies and networks can increase productivity, decrease costs and open new market opportunities. Now-a-days, using the Internet and email to conduct business is not uncommon. However, lack of technical and management skills in Information and Communications Technology is a barrier. There are a wide variety of resources available to help you to improve your e-commerce skills. Simply, decide what skills you need and identify the appropriate Resources to help you to build those skills. The skills that may be required range from basic abilities, like word processing and Internet navigation, to more complex capabilities such as designing and building websites and database management. There are a range of resources to help you broaden your understanding of the E-commerce environment and develop your technical skills. These include online resources, books and magazines, seminars and training courses. Keeping this in mind, a summary on the background of Electronic Commerce is being provided.**

##### **DEFINITION**

**The definition of e-commerce includes business activities that are business-to- business (B2B), business-to-consumer (B2C), extended enterprise computing (also known as "newly emerging value chains"), d-commerce, and m- commerce**.

**E-commerce is simply a part E-business, more specifically, the trading aspect of E-business. Although there are many definitions and explanations of E-**

**commerce, the following definition provides a clear distinction. There are many definitions and understanding about E-Commerce. They are as follows:**

1. **According to the editor-in-chief of International Journal of Electronic Commerce, Vladimir Zwass, ‘Electronic commerce is sharing business information, maintaining business relationships and conducting business transactions by means of telecommunications networks’.**
2. **Electronic Commerce is where business transactions take place via telecommunications networks, especially the Internet – E. Turban, J. Lee, D. King and H.M. Chung,**
3. **Electronic commerce is about doing business electronically – P. Timmers**
4. **Electronic commerce or e-commerce refers to a wide range of online business activities for products and services – Anita Rosen.**

##### **PROBLEM IDENTIFICATION**

**The tragedy of e-commerce can be measured in percentage: 75.8% (almost 8 out of 10) of online shopping carts are abandoned without the purchase being completed. Deficient checkout processes are often singled out as the main cause, but many other problems faced by e-commerce consumers could be behind it. Slow load times, poor return policies, lack of customer warranties or absurd requirements are among the problems that make online shopping difficult**. **In the following lines, you will discover these and other bad practices that reduce the commercial performance of online stores, knowing them is the best way to avoid them!**

**E-commerce provides an easy way to sell products to a large customer base. However, there is a lot of competition among multiple e-commerce sites. When users land on an e-commerce site, they expect to find what they are looking for quickly and easily. Also, users are not sure about the brands or the actual products they want to purchase. They have a very broad idea about what they want to buy. Many customers nowadays search for their products on Google rather than visiting specific e-commerce sites. They believe that Google will take them to the e-commerce sites that have their product.**

**The purpose of any e-commerce website is to help customers narrow down their broad ideas and enable them to finalize the products they want to purchase. For example, suppose a customer is interested in purchasing a mobile. His or her search for a mobile should list mobile brands, operating systems on mobiles, screen size of mobiles, and all other features as facets. As the customer selects more and more features or options from the facets**

**provided, the search narrows down to a small list of mobiles that suit his or her choice. If the list is small enough and the customer likes one of the mobiles listed, he or she will make the purchase.**

##### **OBJECTIVES OF THE STUDY**

* **PRIMARY OBJECTIVE.**
  + 1. **A Study on Emerging of E-commerce.**

##### **SECONDARY OBJECTIVE.**

1. **Reduce management costs.**
2. **Developing business relations.**
3. **Providing a unique customer experience.**
4. **Increasing the number of loyal customer.**
5. **Making responsive ecommerce website.**
6. **Increasing sales.**
7. **Development of Business-Relationship.**
8. **Better-Customer Service**
9. **Getting more Customers.**

##### **LIMITATIONS OF THE STUDY**

* **Return-on-investment is difficult to calculate.**
* **Many firms have had trouble recruiting and retaining employees with the technological, design, and business process skills needed to create an effective electronic commerce presence.**
* **Difficulty of integrating existing databases and transaction-processing software designed for traditional commerce into the software that enables electronic commerce**
* **Many businesses face cultural and legal obstacles to conducting electronic commerce.**
* **Lack of sufficient system security, reliability, standards and communication protocols.**
* **Rapidly evolving and changing technology, so there is always a feeling of trying to ‘catch up’ and not be left behind.**
* **Under pressure to innovate and develop business models to exploit the new opportunities which sometimes leads to strategies detrimental to the organization. The ease with which business models can be copied and emulated over the Internet increases that pressure and curtails longer-term competitive advantage.**
* **Facing increased competition from both national and international competitors often leads to price wars and subsequent unsustainable losses for the organization.**
* **Computing equipment is needed for individuals to participate in the new ‘digital’ economy, which means an initial capital cost to customers.**
* **A basic technical knowledge is required of both computing equipment and navigation of the Internet and the World Wide Web.**

**CHAPTER-2 REVIEW OF LITRETURE**

##### **CHAPTER-2**

* **2.1 REVIEW OF LITERATURE**
* **Gupta (2014) in her paper “E-Commerce: Role of e-commerce in today’s business”, presents a comprehensive definition of e-commerce while isolating it from e-business. The paper enlists the different ecommerce models i.e. B2B, B2C, B2G and C2C, narratively analyzing the nitty gritties of each. Rina (2016) also elaborates the different applications of e-commerce in “Challenges and Future Scope of Ecommerce in India”, at the same time, defining the degree to which they are operational in the country.**
* **Gunasekaran, Marri, McGauhey & Nehwani (2002) give a broad outlook of electronic commerce within organizational system in “E-commerce and its impact on operations managements” defining it with reference to e-trading and elaborating- how it has permeated every field of business. The paper identifies the revolutionary changes brought by the internet applications like e-mail and electronic data interchange and details the revolutionary changes brought by the internet technologies in manufacturing, marketing, purchasing, design, productions, selling and distributions, warehousing and human resources management. Internet based technologies have enable businesses to shorten development purchase and procurement cycles, maintain up to date product and market information, significantly increase the speed of communications and increase the quality of customer relationships by facilitating close contact and constant communication. The paper studies in depth, the significance of web based technologies in different business operations, thus improving their efficiency through effective B2B E-commerce.**
* **Mishra & Kotkar (2015) trace the timeline and development of B2C e- commerce in an “A study on current status of e-commerce in India: A Comparative analysis of flipkart and Amazon” with its inception in the mid 1990’s through the advent of matrimonial and job portals. However,due to limited internet accessibility, weak online payment systems and lack of awareness, the progress was very slow. The Indian B2C E-commerce industry got a major boost in mid-2000 with the expansions of online services to travel and hotel bookings which continue to be major contributors even today.**
* **Das & Ara (2015) observe in “Growth of E-commerce in India “that though online travel and hotel booking still control the lion’s share of E-commerce in share has comparatively fallen over the years due to the recent augmentation and consequent rise E-tailing services. There has been a tremendous surge in the volume of investment in this sector. With the E-commerce markets in the west reaching their saturations, investors see tremendous potentials in the Indian markets, in the light of which, many startups have received funding from venture capitalists and private equity firms.**

**1)China’s Alibaba group and affiliate Ant financial become the largest shareholders of one communications, the parent of Indian e-tailer Paytm, by investing $6680 million, in2015 (Aulakh, 2015). To tap potential of what it regards as “underdeveloped internet economy” of India, Japanese Investment Company and technology powerhouse Softbank invested $627 million into online retailing marketplace Snapdeal and $210 million in Ola cabs. (Mac, 2014). Similarly, New York from Tiger Global Management has funded companied MakeMyTrip, Flipkart, Myntra and Quickr. The availability of funds has presented a favorable ecosystem and growth opportunities for is as well as small companies. It has enabled local startups to survive in cut throat competition against foreign giants and has facilitated the penetration of e- commerce to every facet of human life such that the differention between e- commerce and traditional business is getting burred (Aggarwal, 2014).**

**2)Through “ Problems and Prospects of E-Commerce”, Raghunath & Pauga (2013) present a comprehensive analysis of various muances of e-commerce while accemtating that, in present time every business activity , be it advertising , ordering , payment etc., can be performed in the digital ecosystem . The paper also enlists numerous points can the importance of e- commerce which is responsible for its development as the new convention. It has enabled the creation and exploitation of new business opportunities, at the same time increasing the way of customers in the development of new products and services. E-commerce has not only augmented the performance of internal business management, but has also enabled better customer relationships by promoting a business model that is essentially based on information sharing. The accessibility of internet connectivity and other online tools herald a new revolution. SWOT analysis of e-commerce conducted by Awais & Samin (2012) highlights ubiquity, low operating cost, improved customer interaction and time saving as the unique strengths of e-commerce, but at the same time accentuates upon the necessity for the firms to adapt themselves to the changing environment and innovate constantly to come up with better offerings for customers.**

**\*With an increase in the number of players in the B2C segment, competition for the first position is set to intensify, making it imperative for the firms to enhance service quality and to invest in logistics, so as to derive benefits from increase in the disposable income of households, rise in internet subscriptions and derive benefits from increase in the disposable income of households, rise in internet subscriptions and infiltrations of mobile commerce. (Das & Ara, 2015). In the face of rising competition, the survival of the firms will depend upon how efficiently they are able to bridge the existing gaps in e-commerce transactions. The ubiquitous nature of internet has enabled e-commerce to defy geographical boundaries and permeate different markets, so as to elicit demand from sub-urban and rural areas, after having** successfully tapped its potential in metropolitan cities.

**In anticipation of increasing demand from Tiger 2 and 3 cities, many e-commerce firms are undertaking efforts to widen their reach by investing in better infrastructure. In the light of growing number of website, offering similar goods and services, greater significance is being attributed to Internet. Marketing, which shall play and unparalleled role in audience acquisition for E-commerce websites, by displaying the advertisement on search engine result pages and other portals. Internet marketing shall not only propel e-commerce but also emerge as an important support tool to bring and mortal stores.**

**(Gangeshwer, 2013**). **Apart from Internet Marketing, Deshmukh, Deshmukh & Thampi (2013) recognize another important development: M-commerce, which they identify as a subset of E-commerce. “Transformation from E-commerce to M- commerce in Indian Contest” reviews the current and potential status of e- commerce and m-commerce in the Indian market, why projecting the latter as the potential future. The paper discerns ubiquity, personalization, flexibility and immediacy as the singular advantages of m-commerce. The authors affirm the idea that smartphones penetration and rise in internet user base, mostly driven by youth, shall propel the growth of e-commerce. Statistical data is used to emphasize that the infrastructure requisite for m-commerce development already exists; however, it is yet to be properly deployed. With mobile penetration providing a boost to digital downloads and enabling cheaper monetary transfers the needs of the hour is to enhance customer confident by providing them assurance of safety and privacy, which shall accelerate movement towards a cashless economy.**

**CHAPTER-3**

**AIM AND SCOPE OF EMERGING OF E-COMMERCE**

### **CHAPTER-3**

##### **AIM OF EMERGING OF E-COMMERCE**

**E-commerce, in full, electronic commerce, is maintaining business relationships and selling information, services, and commodities by means of computer telecommunications networks. (Zwass, 2013)**

**E-commerce has been discovered couple of years ago with huge things and it was running successfully as well as right now. In Bangladesh, Government has an aim is to improve the e-commerce** [**business**](https://www.bartleby.com/topics/business)**.**

**As a business analyst, I had to identify the aims, functions, stakeholders and their relation to the e-commerce clothing business, started by Mr. Rahman. In my work I tried to research in the aspect of Bangladesh. As a developing country the** [**customer**](https://www.bartleby.com/topics/customer) **behaviour, their mind and market opportunity differ from the other well developed country.**

**2. Aims of the Business**

**In the beginning every business should determine their aims of business. A business aim is the goal a business wants to achieve. When there is no aim there is no gain. A primary aim for all business organisations is to add value and in the private sector this involves making a profit. More strategic aims include expansion, market leadership and brand building. In following lines we will try to determine the aim of a private e-commerce clothing store.**

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

**Today, online shopping is a reality in India. The market place is flooded with several ecommerce options for shoppers to choose from. In the recent past, the growth of e-commerce industry in India has been phenomenal as more shoppers have started discovering the benefits of using this platform. There is enough scope for online businesses in the future if they understand the Indian shopper’s psyche and cater to their needs. Listed below are the reasons that guarantee the future prospect of E-commerce in India.**

* + - **Enhancing domain registrations,**
    - **Rising internet users,**
    - **Easy access to internet,**
    - **Awareness about internet even in rural areas,**
    - **Rising number of cyber cafes,**
    - **Growing need for E-commerce.**

##### **Cash on delivery (COD)**

**Indian e-commerce industry has evolved over a period of time with innovations that have changed the rules of the game globally. COD is one**

**such example. In a country where credit card penetration is much lower than other developed markets and where e-commerce companies are still working hard to build trust among shoppers, introducing cash on delivery has been one of the key factors for the success of the segment. At present, COD is the preferred payment mode for close to 55-60% of all online transactions in the fashion and lifestyle segment in India. Executing COD efficiently and painlessly for the customer is critical to the success of any E-commerce player in the country.**

##### **Delivering experiences.**

**E-commerce needs to focus on customer experience to build trust and confidence. Customer experience encompasses every interaction of a customer from placing an order to interacting with customer service team, to the actual delivery experience. Providing a great delivery experience is one of the core aspects to delighting customers. This not only mean faster deliveries but also consistency and reliability. The more faith the customer has in your delivery service, the more likely he is to buy again. Besides, it builds a good brand image and word-of mouth publicity.**

##### **Growing the base**

**India has more than 130 million online users at present, out of which as many as 10% are engaging in online transactions. The online user base is expected to cross 300 million in the next 2 – 3 years and a larger percentage of people are expected to transact online by the end of 2015. This large base will provide vast scope for e-commerce businesses to establish themselves in India.**

##### **Growing opportunities.**

**The e-commerce industry is growing at a rapid pace and changing the dynamics of the retail industry. In the coming years, e-commerce is expected to contribute close to 8-10% of the total retail segment in India. This growth is bound to continue provided e-commerce companies focus on innovating, building strong technology infrastructure and delivering the best customer experience.**

##### **Online Travel Segment.**

**The online travel segment has seen a CAGR of 55.5% from 2007-2012. The is due to rise of disposable income, surge in demand for domestic travel and the boom of the tourism industry. Domestic travel contributed to as much as 50% of the total market, followed by railways tickets, international air tickets, hotel bookings and bus tickets.**

##### **E-Tailing.**

**E-tailing encompasses buying consumer items like apparels, electronic devices, home and kitchen appliances, jewellery, online. Competition is**

**intense due to low entry barrier of this segment. However, Amazon.com, flipkart, snapdeal.com, jabong.com, and myntra.com are some of the major players. This segment is expected to grow further as people become more pressed for time. Also the choice that e-tailing sites offer to customers will drive demand for this segment. However, there will be intense price based competition in this sector and consolidations are in the order.**

##### **Online Financial Services.**

**The financial services segment includes applying for insurance, paying online bills, and premiums and online transactions for financial services. The costs of these insurance policies are lesser with premiums being 40%-60% cheaper. This is a win-win situation for both the insurance provider and the customers. Also the convenience provided by online portals has led to more customers choosing the online route for bill payment.**

##### **Classifieds.**

**It is in a very promising stage and has lot of scope for growth. Online advertising is lot cheaper than conventional methods and unlike the latter, it is not constrained to a geographic location. The growth is mainly fuelled by services like online job (60% of the segment), online matrimony, B2C classifieds and B2B classifieds. Naukri.com, timesjob.com, monster.com are the major players in the job market while jeevansathi.com, shaadi.com are the major matrimonial sites.**

##### **Other online Services.**

**These include sites offering online services like buying entertainment tickets, food and grocery.**

### **CHAPTER-4**

### **System Design Architecture**

##### **4.1 Architecture Pattern:**

**Several architectural patterns can be used for e-commerce websites:**

**Monolithic Architecture: All components are bundled into a single one application. Simple to develop and deploy but can become difficult to maintain and scale as the website grows.**

**Microservices Architecture: The application is broken down into smaller independent services that communicate via APIs. Offers better scalability, flexibility**

**and fault tolerance but can be complex to manage.**

**Headless Commerce: The frontend and backend are decoupled, allowing for greater flexibility in choosing technology stacks and customizing the user experience.**

##### **4.2: Technology Stack:**

**A typical technology stack include:**

* **Frontend: HTML, CSS, JavaScript, React, Angular, or Vue.js**
* **Backend: Node.js, Python (Django or Flask), Ruby on Rails, or Java**
* **Database: MySQL, PostgreSQL, MongoDB, or Amazon DynamoDB**
* **Cloud Platform: AWS, Google Cloud Platform, or Azure**
* **Payment Gateway: Stripe, PayPal, or Braintree**
* **Content Delivery Network: Cloudflare, Akamai, or Fastly**

##### **4.3 Image Management:**

**Storage: Store images in a cloud storage service like Amazon S3 or Google Cloud Storage.**

**Optimization:** Use tools to compress images without sacrificing quality, reducing load times.

**CDN:** Distribute images across multiple servers using a CDN for faster delivery.

Lazy Loading: Load images only when they are visible in the viewport to improve initial page load speed.

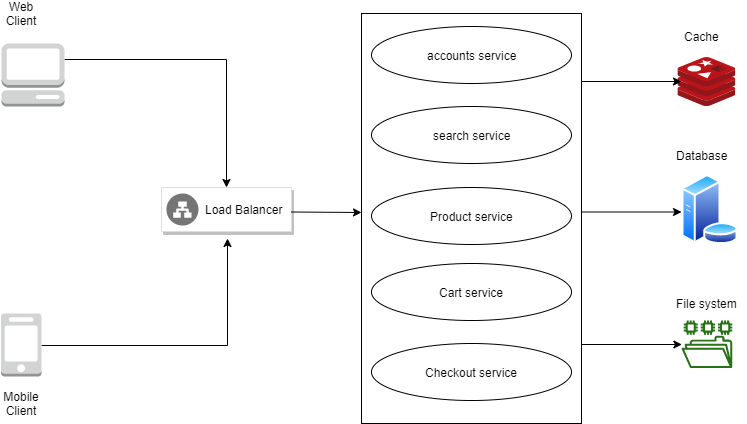
##### **4.4 Security Considerations:**

* **Data Encryption:** Protect sensitive data like customer information and payment details using encryption.
* **Regular Updates:** Keep software and libraries up-to-date to address security.
* **Web Application Firewall (WAF):** Use a WAF to protect against common web attacks like SQL injection and cross-site scripting.
* **Secure Coding Practices:** Follow secure coding guidelines to prevent common security pitfalls.

##### **4.5 Scalability:**

* **Horizontal Scaling:** Add more servers to handle increased traffic.
* **Vertical Scaling:** Upgrade existing servers with more powerful hardware.
* **Caching:** Store frequently accessed data in memory to reduce database load.
* **Content Delivery Network:** Distribute content across multiple locations for faster delivery

##### **4.6 Design:**



A server-client architecture is a distributed computing model where a central server provides services to multiple clients. This model is widely used in vari

ous applications, including web servers, database servers, and file servers.

**Key Components**

1. **Server:** The central computer that handles requests from clients. It processes data, performs calculations, and provides services.
2. **Client:** A computer or device that sends requests to the server and receives responses. Clients can be desktops, laptops, smartphones,or other devices.

### **CHAPTER-5**

### **TECHNOLOGIES**

##### **5.1 :**

having to leave the comfort of your home. But getting a great deal online involves more than just getting the lowest price.You’II want to be sure that products arrive on time, that quality is what you expected, that items include a proper warranty, and that there is a way for you to return products or get support with any questions or issues you have. Apply these tips to improve the online shopping. **‘Free shipping’ is the magic words to many customers. Think about it. Offering free shipping shows that you care about the customers’ experience, even as they’re paying for their goods. They’ll remember that, and they’ll be back.** **There are so many fraud cases with online customer that’s why they don’t want to again use E-Commerce and one more thing some time they confused what we should do and where we should do they complain. Security of the funds also of the main reason of the behind the E-Commerce .Sometimes, online customer faces the problem of the refund of the funds. So government as well as facilitators of the E- Commerce should make the clear guideline regarding this.** **Nothing’s worse than a site where the customer can’t see where to go. Map your site out so they can see exactly what you sell, and where they should go to get it. It saves them time and hassle when they come to buy.** **Allow online shoppers to engage with your ecommerce site and visualize how to incorporate your products into their everyday lives with the power of social proof. These are the visual and text reviews that customers leave endorsing your products. Platforms like Instagram, YouTube, and Facebook have given brands the ability to collet real visual stories from customers about their products and visual marketing software such as Pixlee allows marketers to display this user generated content on their brand sites.**

**CHAPTER-6 SUMMARY AND CONCLUSION**

CHAPTER-6**Summary of Emerging of E-commerce**At its core, electronic commerce or e-commerce is simply the buying and selling of goods and services using the internet, when shopping online.However, the term is often used to describe all of a seller's efforts, when selling products directly to consumers.**conclusion**Research in e-commerce implementation can give a significant result. In order to get an overview of the current research in this area, a systematic literature search was undertaken to identify ecommerce implementation articles from four databases. We have found 65 most related articles after inclusion and exclusion criteria process for obtaining the maximum relevance to our study objectives. The articles were published between 2006 and 2015. The results of this review indicate the e-commerce implementation as a whole process is rather inadequately addressed. Although there are extensive studies of factors in e-commerce implementation, we have found the utmost relevant factors. There are no research efforts, at least in our selected papers, which have actually provided the solution or activities in the e-commerce implementation. Nevertheless we feel that the results presented in this paper have few imperative implications. This study contributes to the first systematic literature review of e-commerce implementation area. Hence the results from this review may assist researchers in the area of ecommerce implementation.

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