E-Business

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Published by:

MANIBEN M. P. SHAH MAHILA ARTS COLLEGE,

Opp. N. C. Desai Petrol Pump,

Kadi - 382715, Dist - Mehsana,

Gujarat, India

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Published - 2024

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Published at: Kadi

Preface

In the rapidly evolving digital landscape, the concept of business has transcended traditional boundaries, giving birth to what we now know as E-Business. This revolutionary transformation has reshaped the way we perceive commerce, communication, and collaboration. As technology continues to advance at an unprecedented pace, E-Business has emerged not just as a trend but as a fundamental shift in the way we conduct and manage business operations globally.

The digital age has democratized access to markets, enabling entrepreneurs and businesses of all sizes to reach a global audience with just a few clicks. This preface explores the genesis, evolution and impact of E-Business, offering insights into its transformative power and the opportunities it presents.

From the early days of the internet to the sophisticated online ecosystems we navigate today, E-Business has continuously pushed the envelope, fostering innovation and efficiency. This book delves into the critical aspects of E-Business, including e-commerce, digital marketing, supply chain management, and cybersecurity, among others. It aims to provide a comprehensive understanding of how digital technologies are leveraged to create value, drive growth, and enhance customer experiences.

In addition to exploring the technical and operational facets, this book also addresses the strategic implications of E-Business. It highlights case studies of successful digital enterprises, examines emerging trends, and discusses the challenges and risks associated with this digital transformation. By doing so, it offers readers a well-rounded perspective on how to navigate the complexities of E-Business as we embark on this exploration of E-Business, it is essential to recognize that we are not merely witnessing a change in business practices but a paradigm shift that affects every aspect of our professional and personal lives. Whether you are an entrepreneur, a business leader, a student, or simply someone interested in understanding the digital economy, this book provides valuable insights and practical knowledge to help you thrive in the digital age and harness its potential for sustainable success.

E-business aims to use digital technology to facilitate all aspects of business operations, from marketing to logistics to customer support.by incorporating digital tools and platforms, companies can reduce costs and improve customer experience.

The volume contents of known to Importance of e-business. Saving time and cost. Allowing customers worldwide to purchase products conveniently. We have made an effort here so that today's young generation can read and understand e-business, e-payment system, credit and debit card payment Business Application of E-commerce innovations in E-commerce.

Dr. Hina M Patel, and

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Chapter:1 Introduction

Introduction

E-business or Online business means business transactions that take place online with the help of the internet. The term e-business came into existence in the year 1996. E-business is an abbreviation for electronic business. So the buyer and the seller don't meet personally. today's world, we are exposed to various forms of e-Business. Since its emergence, it has grown by leaps and bounds. Some predict that it may very soon overtake brick and mortar stores completely. While that remains to be seen, we cannot ignore the immense role it plays in the current global economy. E-business includes E-Commerce, but also covers internal processes such as production, inventory management, product development, risk management, finance, knowledge management and human resources. E-business strategy is more complex, more focused on internal processes, and aimed at cost savings and improvements in efficiency, productivity and cost savings.

Meaning of E-Business:

E-Business is the conduct of business on the Internet, not only buying and selling, but also servicing the customers and collaborating with the business partners. E-Business includes customer service (e-service) and intra-business tasks.

Example of E-Business:

An online system that tracks the inventory and triggers alerts at specific levels is E-Business Inventory Management is a business process. When it is facilitated electronically, it becomes part of E-Business.

An online induction program for new employees automates part or whole of its offline counterpart.

What Is Electronic Commerce (E-commerce)?

Electronic commerce (e-commerce) refers to companies and individuals that buy and sell goods and services over the internet. E-commerce operates in different types of market segments and can be conducted over computers, tablets, smartphones, and other smart devices. Nearly every imaginable product and service is available through e-commerce transactions, including books, music, plane tickets, and financial services such as stock investing and online banking. As such, it is considered a very disruptive technology.

Online shopping

E-commerce

Electronic payments
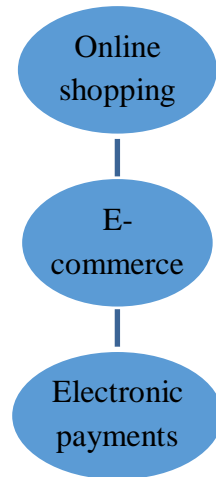
- ❖ Online shopping: Buying and selling goods on the internet is one of the most popular examples of E-Commerce.
- ❖ Electronic payments: When we are buying goods online, there needs to be a mechanism to pay online too. That is where the payment processors and payment gateways come into the picture. Electronic payments reduce the inefficiency associated with writing the Cheque books. It also does away with many of the safety issues that arise due to the payments made in currency notes.

Main difference between E-Business and E-Commerce

| E-Business	E-Commerce
E-Business covers the online transactions, but also extends to all the internet based transactions with the business partners, suppliers and customers like: selling directly to the consumers, manufacturers and suppliers; monitoring and exchanging information; auctioning surplus inventory; collaborative product design. These online interactions are aimed at improving or transforming the business processes and efficiency. An E-Business status is received when we handle the business using phone calls, E-Mail orders, postal orders, and also the online activities.	E-Commerce refers to the online transactions (i.e.) buying and selling of goods and/or services over the internet.

History of E-commerce

Most of us have shopped online for something at some point, which means we've taken part in e-commerce. So it goes without saying that e-commerce is everywhere. But very few people may know that e-commerce has a history that goes back to before the internet began- commerce actually goes back to the 1960s when companies used an electronic system called the Electronic Data Interchange to facilitate the transfer of documents. It wasn't until 1994 that the very first transaction. took place. This involved the sale of a CD between friends through an online retail website called Net Market.

The industry has gone through so many changes since then, resulting in a great deal of evolution. Traditional brick-and-mortar retailers were forced to embrace new technology in order to stay afloat as companies like Alibaba, Amazon, eBay, and Etsy became household names. These companies created a virtual marketplace for goods and services that consumers can easily access. New technology continues to make it easier for people to do their online shopping. People can connect with businesses through smartphones and other devices and by downloading apps to make purchases. The introduction of free shipping, which reduces costs for consumers, has also helped increase the popularity of the e-commerce industry.

Benefits and Limitations of e-Business

Nowadays you can order anything online. You can find everything from a toothbrush to a TV. Progress in technology and growth of e-commerce has given us this benefit. But what exactly is e-business? Is it beneficial for businessmen? Are there any limitations or disadvantages or limitations of e-Business? Let's find out.

Lack of Personal Touch

Security Issues

Delivery Time
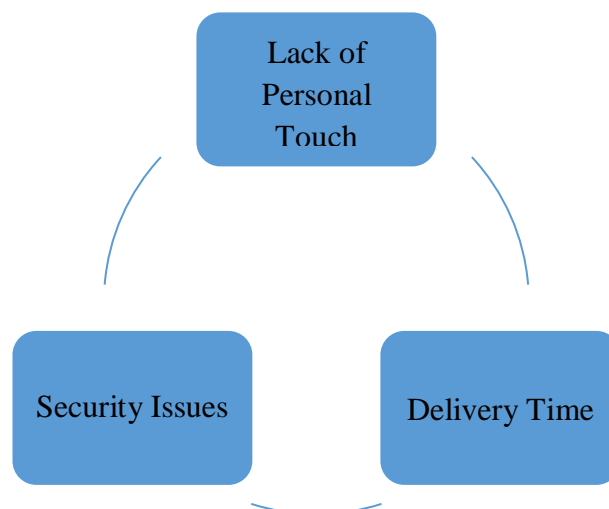
❖ Lack of Personal Touch:

E-business lacks the personal touch. One cannot touch or feel the product. So it is difficult for the consumers to check the quality of a product. Also, the human touch is missing as well. In the traditional model, we have contact with the salesperson. This lends it a touch of humanity and credibility. It also builds trust with the customer. An e-Business model will always miss out on such attributes.

❖ Delivery Time:

The delivery of the products takes time. In traditional business, you get the product as soon as you buy it. But that doesn't happen in online business. This lag time often discourages customers. However, e-businesses are trying to resolve such issues by promising very limited delivery times. For example, Amazon now assures one-day delivery. This is an improvement but does not resolve the issue completely

❖ Security Issues:

There are a lot of people who scam through online business. Also, it is easier for hackers to get your financial details. It has a few security and integrity issues. This also causes distrust among potential customers.

KEY TAKEAWAYS

1. E-commerce is the buying and selling of goods and services over the internet.
2. It is conducted over computers, tablets, smartphones, and other smart devices.
3. Almost anything can be purchased through e-commerce today, which makes e-commerce highly competitive.
4. It can be a substitute for brick-and-mortar stores, though some businesses choose to maintain both.
5. E-commerce operates in several market segments including business-to-business, business-to-consumer, consumer-to-consumer, and consumer-to-business.

Types of e-Commerce

Now there are actually many types of e-Businesses. It all depends on who the final consumer is. Some of the types of e-commerce are as follows

❖ Business-to-Business (B2B)

Transactions that take place between two organizations come under Business to business. Producers and traditional commerce wholesalers typically operate with this type of electronic commerce. Also. it greatly improves the efficiency of companies.

❖ Business-to-Consumer (B2C)

When a consumer buys products from a seller then it is business to consumer transaction. People shopping from Flipkart, Amazon, etc. is an example of business to consumer transaction. In such a transaction the final consumer himself is directly buying from the seller.

❖ Consumer-to-Consumer (C2C)

A consumer selling product or service to another consumer is a consumer to consumer transaction. For example, people put up ads on OLX of the products that they want to sell. C2C type of transactions generally occurs for second-hand products. The website is only the facilitator not the provider of the goods or the service.

❖ Consumer-to-Business (C2B)

In C2B there is a complete reversal of the traditional sense of exchanging goods. This type of e-commerce is very common in crowdsourcing based projects. A large number of individuals make their services or products available for purchase for companies seeking precisely these types of services or products.

❖ Consumer-to-Administration (C2A)

The Consumer-to-Administration model encompasses all electronic transactions conducted between individuals and public administration. Some examples of applications include

- Education – disseminating information, distance learning, etc.
- Social Security – through the distribution of information, making payments, etc.
- Taxes – filing tax returns, payments, etc.
- Health – appointments, information about illnesses, payment of health services, etc.

❖ Business-to-Administration (B2A)

This part of e-commerce encompasses all transactions conducted online by companies and public administration or the government and its varies agencies. Also, these types of services have increased considerably in recent years with investments made in e-government.

Chapter: 2 Features and benefit of E-Commerce

Unique features of E-Commerce

Ubiquity of E-Commerce means E-Commerce technological features are available anywhere and, we can connect to the Internet at any time, because they are web-based. It makes it possible to shop from homes, offices, video game systems with an Internet connection and mobile phone devices. The result is called a market space(i.e.) a marketplace which is able to extend its traditional geographic boundaries and operating hours.

Example: An example includes the ability to access the Internet wherever there is a Wi-Fi hotspot, such as a cafe or airport. Moreover, individuals who have cell phones with data capabilities can access the Internet without a Wi-Fi connection. From the customer's point of view, ubiquity reduces the transaction costs(i.e.) the cost of participating in the market. In order to transact, it is no longer necessary that we spend both time and money, by travelling to a market. At a broader level, the ubiquity of E-Commerce lowers the cognitive energy required to transact in a market space.

Global reach:

Technologies within ecommerce seamlessly stretch across traditional cultural and national boundaries and enable worldwide access. Pearson Education states that instead of just offering goods and services to a population within a specific boundary, businesses can market to and serve an international audience. The Internet and multilingual Web sites, as well as the ability to translate a Web page, allows international visitors all over the globe to access company Web sites, purchase products and make business interactions. Pearson Education is a British-owned education publishing and assessment service to schools and corporations, as well as directly to students. Pearson owns educational media brands including Addison–Wesley, BBC Active, Bug Club, eCollege, Frontier, Longman, My English Lab, Penguin Readers, Prentice Hall, Pantropical and Financial Times Press.

Universal Standards Individuals, businesses and governments use one set of technological, media and Internet standards to use ecommerce features. Consequently, universal standards help to simplify the interactions. An individual can see these standards while shopping online, as the process to purchase items is similar on Web sites that use ecommerce technologies. Similarly, when an individual creates an online account, the site generally requires an individual to create a username and password so he can access his account. This universal technical standards of E-Commerce, greatly reduce the market entry costs. For the customers, it reduces the "search costs(i.e.) the efforts required to find suitable

products. And by creating a single, one world market space, where the prices and the product descriptions can be inexpensively displayed to all to see, and so, the price discovery becomes simpler, faster and more accurate. With the E-Commerce technologies, it is possible for the first time in the history, to easily find all the suppliers, prices and delivery terms of a specific product, anywhere in the world.

Information Richness:

Information provided on the web can be made rich, by adding color to the textual information, and adding audio and video clips. Users can access and utilize text messages and visual and audio components to send and receive the information. Pearson Education states that such aspects provide a rich informational experience in regards to marketing and the consumer experience. An individual may see information richness on a company's blog, if a post contains a video, which is related to a product and hyperlinks that allow him to look at or purchase the product and send information about the post via text message or email. Users can access and utilize text messages and visual and audio components to send and receive the information

Interactivity:

E-Commerce technologies are interactive means it allows for two-way communication between the merchant and the customer. Technologies used in ecommerce require consumer interactions in order to make an individual feel as though he is an active participant in the transaction process. As a result, ecommerce technologies can adjust to each individual's experience. For example, while shopping online, an individual is able to view different angles of some items, add products into a virtual shopping cart, checkout by inputting his payment information and then submit the order.

Information Density:

Information density means the total amount and quality of information available to all the market participants, consumers and merchants alike. The use of ecommerce reduces the cost to store, process and communicate information, according to Pearson Education. At the same time, accuracy and timeliness increase; thus, making information accurate, inexpensive much more about the consumers and plentiful. For example, the online shopping process allows a company to receive personal, shipping, billing and payment information from a customer, all at once and sends the customer's information to the appropriate departments in a matter of seconds. A number of business consequences are resulting because of the growth in the information density. In E-Commerce markets, prices and costs become more transparent.

Price transparency refers to the ease with which the consumers can in out the variety of prices in a market. Cost transparency refers to the ability of the consumers to discover the actual costs, by which the merchants are paying for their products. Also, there are advantages for the merchants as well. Online merchants can discover much more about the various consumers, and this allows the merchants to segment the market into groups, and permits them to engage in price discrimination(i.e.) selling the same goods, or nearly the same goods to different targeted groups with different prices.

Personalization / Customization:

Technologies within E-Commerce allow for the personalization and customization of marketing messages groups or individuals receives. Pearson Education states that companies can base such messages on individual characteristics of a consumer. An example of personalization includes product recommendations based on a user's search history on a Web site that allows individuals to create an account. Merchants can target their marketing messages to specific individuals by adjusting those messages. The technology also permits customization. Changing the deliver product or service based, based on a user's preferences or prior behavior. Given the interactive nature of E-Commerce technology, a great deal of information, about the consumer can be gathered in the market place, at the moment of purchase. With the increase in the information density, a great deal of information about the consumer's past purchases and behavior can be stored and used by the online merchants. The result is a level of personalization and customization, which is unthinkable with the existing commerce technologies. For example, we may be able to shape what we see on a television by selecting a channel, but, we cannot change the contents of the channel, which we have already chosen. Emerging trends in E-Commerce Online businesses have picked up momentum lately, and now people are no more skeptical about shopping online. And why it should be, not like this? E-Commerce sites have given you access to the unfathomable market, they do not tax your patience, and they let you save time in traveling.

In this collaborative world, here are the 10 rising trend related to E-Commerce technology.

Real-time Shopping Experience at Online Shopping:

There is no doubt the people prefer to talk to real sales person and hold the product in their hand! But do not think that E-Commerce sites cannot offer you such pleasure. Most online retailers have facilities to chat online, get suggestions and answer all your queries. Online subscription even allows you to hold the product and touch it (i.e. Style mint, Birch box), and some even lets you chat all along while you are shopping with catalogue.

Using Mobiles and Android Apps for Transaction:

With the mobile devices outnumbering the desktops, the use of these devices for buying will increase in the near future. Additionally, the websites must act like any app and must be very responsive in terms of design. We have many kinds of apps now that assist consumers to check out on his own, use payment wallet, store coupon codes like India plaza coupons (http://www.couponraja.com/indiaplaza.html), loyalties, card numbers and have GPS for proper advertisement of companies. There are also apps that will let you compare the prices of the same product at different outlets.

Multi-channel:

Consumers these days expect a very effortless transaction, and they expect that a commodity added to the cart will be available if one calls the customer care or land up in the store. This will encourage the IT directors to invest in commerce packages, E-Commerce POS systems and CRM systems

Big Data:

Big Data or Hadoop methodology is handling a lot of data. This has been a concept that has been drawing the interest of the E-Commerce site owners, and it is here to stay. It is synching offline data and online data together so that the retailers' decision making capacity may be enhanced. In a nutshell, it allows retailers to understand the hidden consumer patterns.

Features of Online Business

Some of the features of Online Business are as follows:

- It is easy to set up
- There are no geographical boundaries
- Much cheaper than traditional business
- There are flexible business hours
- Marketing strategies cost less
- Online business receives subsidies from the government
- There are a few security and integrity issues
- There is no personal touch
- Buyer and seller don't meet
- Delivery of products takes time
- There is a transaction risk
- Anyone can buy anything from anywhere at anytime
- The transaction risk is higher than traditional business

BENEFITS OF ELECTRONIC COMMERCE

Electronic commerce will Substantially lower the transaction cost. It eliminates many fixed costs of maintaining brick and mortar shops. This allows the companies to enjoy a much higher margin of profit. It provides quick delivery of goods with very little effort on part of the customer. Once customers can place orders online and you can ship a product to their location or provide a service, there's no limit to your reach

Benefits of E-Commerce to Businesses:
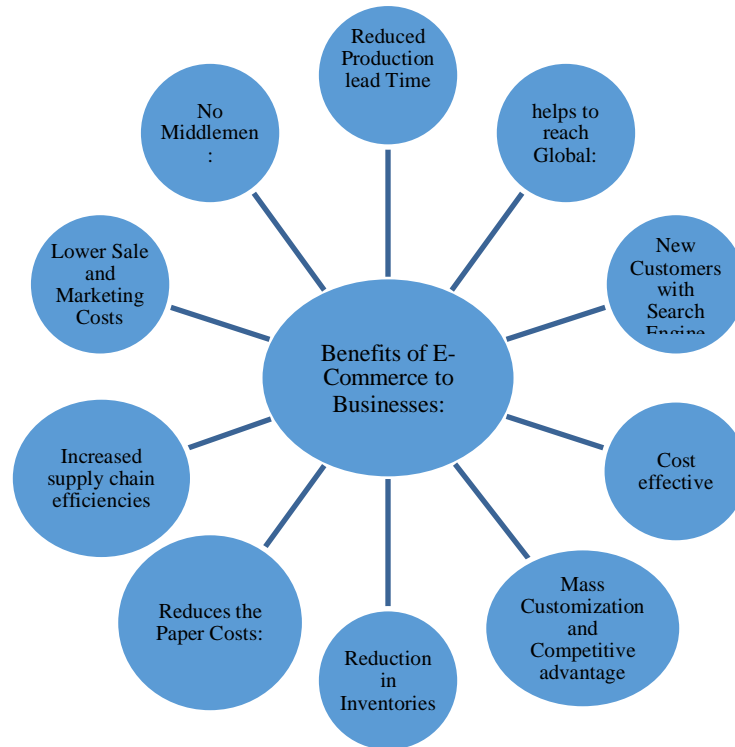
Helps to reach Global:

E-Commerce enabled business now have access to people all around the world. In effect all E-Commerce businesses have become virtual multinational corporations. E-Commerce expands the market place to national and international markets. Internal and web based E-Commerce helps to reach a more geographically dispersed customer base and more business partners as compared to the traditional business methods.

Cost effective:

E-Commerce is proved to be highly cost effective for business concerns as it cuts down the cost of marketing, processing, inventory management, customer care etc. It also reduces the burden of infrastructure required for conducting business. It can also collect and manage the information related to the customers efficiently which in turn will assist the consumer in developing efficient promotional strategy.

New Customers with Search Engine Visibility:

Physical retail is driven by branding and relationships. In addition to these two drivers, online retail is also driven by traffic from search engines. It is not unusual for customers to follow a link in search engine results and land up on an ecommerce website that they have never heard of. This additional source of traffic can be the tipping point for some ecommerce businesses.

Reduces the Paper Costs:

E-Commerce decreases the cost of creating, processing, distributing, storing and retrieving information through the use of FDI systems. This greatly cuts on the cost of paper work in terms of the time taken and the man power required. Also the date is more secure from theft and destruction.

Reduction in Inventories:

A reduction in inventory is desirable to enable reduction in storage, handling, insurance and administrative costs. Internet E-Commerce can help firms to reduce inventories by electronically linking the suppliers and buyers. The process starts from the customer orders and uses just-in-time manufacturing. Information on inventory levels and production rate is shared between manufacturers and their suppliers. Using such information, the delivery schedules are "fine turned" for Justin time manufacturing, rather than maintaining large inventories.

Mass Customization and Competitive advantage:

The web based interactive E-Commerce enables the customization of products/services as per the customer needs. This provides a great competitive advantage to businesses. For example, an online travel agency may customize the literary for a customer who wishes to travel abroad or a computer manufacturer may be able to supply to customized PC to a user.

No Middlemen:

There is a direct contract with customers in E-Commerce through internet without any intermediation. Companies can now focus more on specific customers by adapting different one-to-one marketing strategy.

Reduced Production lead Time:

The production cycle time is the time taken by a business to build a product, beginning with the design phase and ending with the completed product. The internet based E-Commerce enables the reduction of this cycle time by allowing the production teams to electronically share design specifications and refinement processes. The reduction in the production cycle time helps to reduce the fixed overheads associated with each unit produced. This saving in

the cost production can be passed onto the customer or may be used to achieve higher profits. Improved Customer relationship: Customer service can be enhanced using the internet based E-Commerce by helping the customer to access information before, during and after a sale. Customers may need to retrieve information on product specifications and pricing. On the status of an order or may need online help in the installation or use of a product he has purchased. A prompt customer support service can help businesses to earn goodwill of customers in the long run.

Lower Sale and Marketing Costs:

The internet allows businesses to reach many customers globally at lower costs. Thus by shifting the sale and marketing functions to the electronic processes, the organizations can bring down greatly the marketing overheads. For example, advertisements on the internet can cut down the cost of printing and mailing the pamphlets or brochure. Any charge in product specifications in the case of paper- based advertisements may mean re-printing, how-ever in web based advertisement it may mean changes only in the web site. Lower Telecommunication Costs: The Internet is much cheaper than value added networks (VANs) which were based on leasing telephone lines for the sole use of the organization and its authorized partners. It is also cheaper to send a fax or e-mail via the Internet than direct dialing before the coming internet, only few organizations were using the private networks and VANs for their EDI. The cost of installation and running these systems was very high and beneficial only to the larger firms and enough business volumes to justify the cost. New Found Business Partners: Internet based E-Commerce enables businesses to find new business partners globally on the web, thus not restricting themselves to a specific choice of suppliers.

Increased supply chain efficiencies:

E-Commerce minimizes supply chain inefficiencies, reduces inventories, reduces delivery delays. Digitization of Products and Processes: Particularly in the case of software and music/video products, this can be downloaded or e-mailed directly to customers via the Internet in digital or electronic format. The internet helps to expedite access to remote information, thus adding speed to transactions and processes.

Information sharing:

It takes only few seconds to share information over the internet. a firm can e-mail its customers relating new products and new offers and can solve their product related quires and welcome suggestions.

Benefits of E-Commerce to Consumers

Gives freedom to make choices:

It also gives customers an opportunity to look for cheaper and better quality products. With E-Commerce, consumers can search the specific product or service they require and can even find the direct manufacturer from where they can purchase products at comparatively less price. Shopping online is time saving and convenient. In addition to it, consumers also get to see the reviews of other consumers that will help in making beneficial purchase decision.

Increase in variety of goods:

As the market will expand the variety of goods available will also expand. Wide variety of goods are available than ever before. It gives more choice and alternatives: E-Commerce provides more choice and alternatives to customers that will increase the choice of vendors or products because they are no longer geographically constrained to reach a vendor or a product. A large number of vendors/manufacturers are marketing and selling their products/services on the internet. Virtual shops (e.g. Homeshop18, Snapdeal, Flipkart) can offer the consumers a large number of products/services at a single site.

Convenience of Shopping at Home:

allows the consumers to shop went it is convenient for them not strictly during store hours. Also for handicapped or ill consumers, home shopping on the internet provides a lot of opportunity and convenience. Ensure Secrecy: the various security measures that are in built are used in E-Commerce transactions to prevent any unauthorized access to information on the internet for ensure secrecy they maintain encoding, encryption and passwords.

More Competitive Prices and Increased Price comparison capabilities:

The large amount of information available on the internet is giving more and more power to the consumers. Consumers can make comparison shopping. There are several online services that allow customers to browse multiple ecommerce merchants and find the best prices.

Access to Greater Amounts of Information on Demand:

Consumers can have access to large amount of information online on products and services, their features and prices. This further translates into more choice to customers in shopping and greater price comparison opportunities. Time compression: Time is not a factor with Internet communication between firms and their stakeholders. Online stores can be open 24/7; people can communicate as their schedules permit; time zones disappear for managers collaborating with partners on other continents.

Quick Delivery of Digitized Products/Services:

E-Commerce allows quick delivery in the case of digitized products such as music, software etc. Provide Comparison Shopping: Economic facilitates comparison shopping. There are several online services that allow customers to browse multiple ecommerce merchants and find the best prices. E-payment system: The electronic payment system on the internet is facilitated by payment gateways or intermediary between the business firm and customers and between the business firms for assuring the payments from the customers. (c) Benefits of E-Commerce to Society: Enables More Flexible Working Practices: Which enhances the quality of life for a whole host of people in society, enabling them to work from home. Not only is this more convenient and provides happier and less stressful working environments. It also potentially reduces environmental pollution a fewer people have to travel to work regularly.

Connects People:

Enables people in developing countries and rural areas to enjoy and access products, services, information and other people which otherwise would not be easily available to them. Facilitates Delivery of Public Services:

The health services available over the Internet on-line consultation with doctors or nurses, filing taxes over the Internet through the Inland Revenue website. DISADVANTAGES OF ELECTRONIC COMMERCE The following are the important drawback/disadvantages of electronic commerce: Ecommerce Lacks That Personal Touch: Not that all physical retailers have a personal approach, but we do know of several retailers who value human relationship. As a result, shopping at those retail outlets is reassuring and refreshing. Clicking on "Buy Now", and piling up products in virtual shopping carts.

System and data integrity:

A computer virus is a program that clones itself when an injected piece of program code is executed. it is malicious program. data protection from the viruses that causes unnecessary delays and can clean up all stored information must. In order to create cost effective response to the varied technical and human threats to web site security.

E-Commerce Delays Goods:

Ecommerce websites deliver to take a lot longer to get the goods into consumer hands. Even with express shipping the earliest consumer gets goods in next day. An exception to this rule is in the case of digital goods an e-book or a music file. In this case, ecommerce might actually be faster than purchasing goods from a physical store.

System scalability:

It means regular up graduation of the website is required when the number of website users increase over period of time or during busy seasons. As a result of rush of enquiries on the companies site, it might cause slowdown of the system performance and eventually loss of customers. Dependent on internet: E-Commerce is dependent on internet. Mechanical failures in the system can cause unpredictable effects on the total processes. Furthermore, there are many hackers who look for opportunities, and thus an ecommerce site, service, payment gateways; all are always prone to attack. Things such as viruses could mean losing the site or affecting the customer's computers while on purchasing from the website.

Many Goods Cannot Be Purchased Online:

Despite its many conveniences, there are goods that consumer cannot buy online. Most of these would be in the categories of "perishable" or "odd-sized". It could order both of them online, but consider the inconvenience. The Popsicle would have to be transported in refrigerated trucks. Unless the seller was willing to make a huge loss, the cost of shipping that Popsicle would far exceed the cost of the Popsicle. Products people won't buy online: There are various products which the customers would like to first touch and feel and then buy it. For example: Furniture users want to touch ant they want to sit on it, feel the texture of the fabric.

Ecommerce Does Not Allow Experiencing the Product before Purchase:

It cannot touch the fabric of the garment when consumers want to buy and it check how the shoe feels on our feet, consumer cannot "test" the perfume that consumer want to buy. In many cases, customers want to experience the product before purchase. Ecommerce does not allow that. If they buy a music system, they cannot play it online to check if it sounds right? If they are purchasing a home-theatre system, they would much rather sit in the "experience center" that several retails store set up.

Loyal customers:

Great amount of effort is put on building a customer relationship buy the organizations and retaining them is rather a bigger job. A business cannot survive without a loyal customer. Shopping is Social Experience: People love to shop in the mall because it gives them an opportunity to have fun with friends and family. It's something online stores lack of.

Anyone one Can Set Up an Ecommerce Website:

Where online storefront providers bring the ability to set up an ecommerce store within minutes. The lowered barriers to entry might be a great attraction to the aspiring ecommerce entrepreneur. But for the buyer, reliability can be an issue. This could lead customers to restrict their online purchases to famous ecommerce websites.

Too Many Competitors:

If there are thousands of online stores selling similar products, how company can attract visitors, so they actually but from it and not from others? As the technology has boomed the competition is increasing because more and more people are opening their businesses on internet.

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Chapter: 3 E-Commerce vs Traditional Commerce in the Indian Economy

Introduction

The Indian economy has witnessed significant transformations over the past few decades, with one of the most profound changes being the rise of e-commerce. This chapter explores the differences, advantages, and challenges associated with e-commerce and traditional commerce in India.

Early on in the history of civilization, human wants were basic and restricted. To meet their needs and desires, people used to trade products with one another. A barter exchange system is one in which products and services are directly traded for one another without the need for a medium of exchange, such as cash, and the trade of monetary transactions is progressively enhanced over time. A monetary transaction is a system where goods and services are traded for cash. The Indian economy was liberalized in 1991. The government has drastically changed its stance on a number of issues, including foreign trade, foreign direct investment, currency rates, fiscal restraint, unrestricted access to the market, permitting the establishment of more private enterprises, and reducing government control. Increased competition in the business environment is a result of the new economic policy, which aims to improve the economy's productivity, transparency, consistency, and efficiency.

After new economy reforms internet service in India on 15thAugust, 1995 by Vides Sanchar Nigam Limited. In November 1998, the government opened up the sector for providing internet service by private sector. Internet business conducted by e-mail. E-mail marketing is a form of marketing that can make the customers on your email list aware of new type of products, discount, quality of product, description of product and more other service.

After using e-mail marketing, the innovation of Teleshopping in Indian economy. Tele marketing is direct marketing of goods and services for customer over the telephone, mobile or the internet. people can easily purchase good by using one phone call with advancement of technology in present, e-commerce is extended in such a way that it is becoming very popular in whole economy. E-Commerce means electric commerce or internet commerce. E-commerce means buying and selling of goods and services through internet, and the transfer of money and data to complete the sales.

Government also promotes and makes policy to digital economy. The fast growing e-commerce market in the country and boost whole economy. In present various types of e-commerce like business to business e-commerce, Business to consumer e-commerce, consumer to administration e-commerce.

Overview of E-Commerce in India

E-commerce, or electronic commerce, refers to the buying and selling of goods and services over the internet. The Indian e-commerce market has grown exponentially, driven by increased internet penetration, smartphone usage, and favorable demographics. Major players such as Amazon, Flipkart, and Snapdeal have played pivotal roles in this growth.

- **Market Size and Growth**: The e-commerce market in India was valued at USD 46.2 billion in 2020 and is expected to reach USD 200 billion by 2026.
- **Key Segments**: E-commerce encompasses various segments including online retail, travel services, financial services, and digital content.

In today's fast-paced world, in order to stay in contention and thrive in the business world, it is very important to break -through these conventional rules and adapt the information technology ways of doing business. E-Commerce has important phases explained below:

- It is related with advertising of the products electronically and enabling the customers to browse through the available offers.
- It involves an agreement between the involved parties to continue with the succeeding phases.
- Order is made for the goods after an agreement is concluded
- E-payment systems on the internet are used for receiving payments.

Overview of Traditional Commerce in India

Traditional commerce involves the exchange of goods and services through physical marketplaces. This form of commerce has been the backbone of the Indian economy for centuries, deeply rooted in its culture and society.

- **Marketplaces and Kirana Stores**: Small, family-owned shops, known as Kirana stores, dominate the traditional retail landscape.
- **Employment and GDP Contribution**: Traditional commerce is a significant employer, providing jobs to millions and contributing substantially to the GDP.

Comparison Between E-Commerce and Traditional Commerce

1. Accessibility and Reach

- **E-Commerce**: Offers global reach, allowing businesses to access customers beyond geographical boundaries. It is particularly beneficial for consumers in remote areas.
- **Traditional Commerce**: Limited to physical location, which restricts reach and accessibility.

2. Cost Structure

- **E-Commerce**: Generally, involves lower operational costs due to reduced need for physical infrastructure. However, it incurs costs related to technology, logistics, and digital marketing.
- **Traditional Commerce**: Higher costs related to rent, utilities, and maintenance of physical stores. However, it often benefits from lower transportation costs for local suppliers and customers.

3. Consumer Experience

- **E-Commerce**: Provides convenience, wider selection, and the ability to compare prices easily. However, it lacks the tactile experience of shopping.
- **Traditional Commerce**: Offers personalized customer service and the ability to physically inspect products before purchase.

4. Employment

- **E-Commerce**: Creates jobs in technology, logistics, and customer service sectors. However, it may lead to job losses in traditional retail.
- **Traditional Commerce**: Provides employment opportunities across various skill levels, from low-skilled workers to skilled retail managers.

5. Payment Methods

- **E-Commerce**: Supports multiple payment methods including credit/debit cards, digital wallets, and cash on delivery. This flexibility caters to a diverse customer base.
- **Traditional Commerce**: Predominantly relies on cash transactions, although card payments and digital wallets are increasingly being adopted.

Advantages of E-Commerce

- **Convenience**: Shopping can be done 24/7 from anywhere with internet access.
- **Wider Selection**: Consumers have access to a broader range of products and services.
- **Price Comparisons**: Easy comparison of prices across different vendors.
- **Personalization**: AI and data analytics enable personalized shopping experiences.

Advantages of Traditional Commerce

- **Personal Touch**: Face-to-face interaction and personalized customer service.
- **Immediate Ownership**: Instant acquisition of goods without waiting for delivery.
- **Trust and Security**: Established relationships and trust with local shopkeepers.

Challenges and Opportunities

Challenges for E-Commerce

- **Logistics and Delivery**: Efficient and timely delivery remains a challenge, especially in rural areas.

- **Digital Divide**: Limited internet access and digital literacy in rural regions.

- **Regulatory Issues**: Navigating complex regulations and taxes can be challenging.

Challenges for Traditional Commerce

- **Competition from E-Commerce**: Traditional retailers face stiff competition from online platforms.

- **High Operational Costs**: Maintaining physical stores and managing inventory can be costly.

- **Limited Reach**: Physical limitations restrict market expansion.

Opportunities for E-Commerce

- **Rural Market**: Expanding into rural areas with growing internet penetration.

- **Technological Advancements**: Leveraging AI, big data, and block chain for improved services.

- **Innovative Business Models**: Exploring subscription services, online-to-offline (O2O) models, and direct-to-consumer (D2C) strategies.

Opportunities for Traditional Commerce

- **Omni channel Strategies**: Integrating online and offline channels to enhance customer experience.

- **Local Sourcing**: Promoting locally sourced products can attract conscious consumers.

- **Customer Loyalty Programs**: Implementing loyalty programs to retain customers.

Conclusion

Both e-commerce and traditional commerce play crucial roles in the Indian economy, each with its unique strengths and challenges. While e-commerce continues to grow rapidly, traditional commerce remains vital, especially in smaller towns and rural areas. The future lies in a hybrid approach, where businesses leverage the benefits of both models to create a seamless and enriched shopping experience for consumers. By embracing technological advancements and adopting innovative strategies, India can harness the full potential of both e-commerce and traditional commerce to drive economic growth and development.

Chapter: 4 Case Studies: Impact and Strategies of Leading E-Commerce and Digital Platforms in India

1. Walmart

Background: Walmart, the global retail giant, entered the Indian market through a significant investment in Flipkart.

Strategies and Impact:

- **Acquisition of Flipkart**: In 2018, Walmart acquired a 77% stake in Flipkart for $16 billion, marking the largest e-commerce acquisition globally. This move allowed Walmart to tap into India's burgeoning online retail market.
- **Synergies**: Walmart leverages its vast supply chain and retail experience to enhance Flipkart's operations, offering competitive pricing and improved product availability.
- **Omni channel Strategy**: Walmart is working on integrating Flipkart's digital presence with physical retail experiences, aiming to create a seamless shopping experience for Indian consumers.

Challenges:

- **Regulatory Hurdles**: Navigating India's complex retail regulations, including restrictions on foreign direct investment (FDI) in multi-brand retail, has been a challenge.
- **Competition**: Facing intense competition from Amazon and other local players in the Indian e-commerce market.

2. Amazon

In recent years, Amazon has emerged as a global leader in the e-commerce industry, with a significant presence in various countries. This case study focuses on Amazon's digital strategy in India, a country with a burgeoning e-commerce market. India's rapidly growing internet penetration and the increasing adoption of smartphones have presented both opportunities and challenges for Amazon. The case study explores how Amazon has leveraged digital technologies to establish a strong foothold and drive growth in the Indian e-commerce landscape. This case study examines the digital strategy implemented by Amazon E-Commerce in India, analysing key elements such as customer-centricity, technology adoption, logistics optimization, and market expansion. By incorporating relevant references, this study provides a comprehensive understanding of Amazon's successful growth in India's competitive e-commerce landscape.

Background: Amazon entered the Indian market in 2013 and has rapidly expanded its footprint.

Strategies and Impact:

- **Extensive Product Range**: Offering a vast selection of products, from electronics to groceries, catering to diverse consumer needs.
- **Amazon Prime**: The introduction of Amazon Prime has been a game-changer, providing benefits like free delivery, exclusive deals, and access to streaming services, driving customer loyalty.
- **Innovations in Logistics**: Investments in warehouses, delivery networks, and innovations like Amazon Pantry and Amazon Fresh for grocery delivery.

Challenges:

- **Regulatory Compliance**: Navigating FDI regulations and e-commerce policies specific to India.
- **Local Competition**: Competing with Flipkart and emerging local players in a price-sensitive market.

3. PhonePe

Background: PhonePe, a digital payments platform, was founded in 2015 and acquired by Flipkart in 2016.

Strategies and Impact:

- **Unified Payments Interface (UPI)**: Leveraging UPI for seamless and instant digital transactions, making it one of the most popular payment apps in India.
- **Partnerships**: Collaborating with various merchants, online platforms, and service providers to expand its ecosystem.
- **Financial Services**: Expanding into financial services like mutual funds, insurance, and gold purchases.

Challenges:

- **Security Concerns**: Ensuring robust security measures to protect user data and prevent fraud.
- **Intense Competition**: Competing with other major digital payment platforms like Google Pay and Paytm.

4. Flipkart

Background: Founded in 2007, Flipkart is one of India's leading e-commerce platforms.

Strategies and Impact:

- **Innovative Sales Events**: The Big Billion Days sale has become a hallmark event, driving massive sales and customer engagement.
- **Diverse Product Range**: Offering a wide array of products including electronics, fashion, and groceries through Supermart.
- **Technology and Logistics**: Investment in AI, machine learning, and a robust logistics network to improve customer experience and operational efficiency.

Challenges:

- **Regulatory Issues**: Compliance with evolving e-commerce regulations in India.
- **Competition**: Maintaining market leadership against Amazon and new entrants.

5. Big Basket

Background: Big Basket, founded in 2011, is India's largest online grocery delivery service.

Strategies and Impact:

- **Extensive Inventory**: Offering a wide range of grocery items including fresh produce, staples, and household essentials.
- **Subscription Services**: Introducing subscription-based models like BB Daily for daily essentials.
- **Partnerships**: Collaborating with local farmers and suppliers to ensure fresh and quality products.

Challenges:

- **Logistics and Supply Chain**: Managing a complex supply chain for perishable goods and ensuring timely deliveries.
- **Competition**: Facing competition from Amazon Fresh, Flipkart Supermart, and local grocery delivery start-ups.

6. Justdial

Background: Justdial, founded in 1996, is a local search engine and directory service.

Strategies and Impact:

- **Comprehensive Directory**: Providing information on a wide range of services and businesses across India.
- **Digital Services**: Expanding into online services like booking tables at restaurants, flight bookings, and ordering groceries.

- **Mobile App**: Enhancing user experience through a robust mobile app offering various services at users' fingertips.

Challenges:

- **Monetization**: Finding effective ways to monetize the platform while maintaining free access to basic services.
- **Data Accuracy**: Ensuring the accuracy and reliability of the information provided to users.

7. OLX

Background: OLX, founded in 2006, is a global online marketplace for buying and selling used goods.

Strategies and Impact:

- **User-Friendly Platform**: Simplifying the process of listing and buying used goods, making it accessible to a broad audience.
- **Mobile App**: Focusing on mobile usability to cater to the growing smartphone user base in India.
- **Local Focus**: Emphasizing local transactions to build trust and ease of use among users.

Challenges:

- **Fraud and Safety**: Ensuring safe transactions and minimizing fraud on the platform.
- **Competition**: Competing with other classified and e-commerce platforms offering similar services.

8. Ola

Background: Ola, founded in 2010, is one of India's largest ride-hailing companies.

Strategies and Impact:

- **Diverse Offerings**: Offering a range of services including cabs, auto-rickshaws, bike taxis, and electric vehicles.
- **Technology Integration**: Utilizing technology for efficient ride matching, fare estimation, and route optimization.
- **Geographic Expansion**: Expanding services to smaller cities and towns to capture a larger market share.

Challenges:

- **Regulatory Compliance**: Navigating various regulatory requirements across different states.

- **Competition**: Competing with Uber and other local ride-hailing services.

9. Oyo

Background: Oyo, founded in 2013, is a hospitality chain offering budget accommodations.

Strategies and Impact:

- **Standardization**: Ensuring a standardized quality of service and amenities across all Oyo properties.

- **Technology**: Leveraging technology for booking, customer service, and property management.

- **Expansion**: Rapidly expanding in both domestic and international markets to become a global player.

Challenges:

- **Quality Control**: Maintaining consistent service quality across a vast and diverse property portfolio.

- **Profitability**: Balancing rapid expansion with profitability and sustainable growth.

Conclusion

The case studies of Walmart, Amazon, PhonePe, Flipkart, Big Basket, Justdial, OLX, Ola, and Oyo illustrate the dynamic nature of India's e-commerce and digital service landscape. Each of these companies has adopted unique strategies to navigate the challenges and leverage the opportunities presented by the Indian market. Their experiences provide valuable insights into the factors driving success and the complexities of operating in a rapidly evolving economic environment.

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Chapter: 5 Business Application of E-Commerce

E-commerce has significantly transformed the way businesses operate, offering numerous applications that can enhance efficiency, expand market reach, and improve customer satisfaction. Here are some key business applications of e-commerce:

1. Online Sales Platforms

Direct Sales: Businesses can sell products and services directly to consumers through online platforms like Amazon, eBay, or their own websites. This eliminates the need for physical stores, reducing overhead costs.

Subscription Services: Companies can offer subscription-based services (e.g., streaming, software as a service) that generate recurring revenue.

2. Market Expansion

Global Reach: E-commerce allows businesses to reach customers globally without the need for a physical presence in different countries. This enables small and medium enterprises (SMEs) to compete with larger companies on a more level playing field.

Localized Marketing: Businesses can tailor their marketing efforts based on geographic regions, targeting specific demographics and cultural preferences.

3. Supply Chain Management

Automation and Integration: E-commerce platforms can integrate with supply chain management systems to automate order processing, inventory management, and logistics. This improves efficiency and reduces errors.

Just-In-Time Inventory: By closely monitoring consumer demand, businesses can implement just-in-time inventory systems, reducing storage costs and minimizing waste.

Customer Relationship Management (CRM)

Personalized Marketing: E-commerce platforms collect data on customer behavior, allowing businesses to create personalized marketing campaigns, recommend products, and improve customer service.

Loyalty Programs: Online stores can easily implement loyalty programs that reward repeat customers with discounts, points, or exclusive offers.

5. Digital Payment Systems

Secure Transactions: E-commerce facilitates secure and efficient payment processing through digital payment gateways, reducing the risk of fraud and improving the customer experience.

Multiple Payment Options: Offering various payment methods, including credit cards, digital wallets, and cryptocurrencies, caters to a wider audience and increases conversion rates.

6. Data Analytics

Customer Insights: E-commerce platforms provide businesses with valuable data on customer preferences, buying patterns, and market trends, enabling data-driven decision-making.

Performance Monitoring: Businesses can track key performance indicators (KPIs) like conversion rates, cart abandonment, and customer lifetime value to optimize operations.

7. Cost Reduction

Lower Operational Costs: E-commerce reduces the need for physical infrastructure, such as storefronts and warehouses, leading to significant cost savings.

Efficient Marketing: Digital marketing strategies, including SEO, social media marketing, and email campaigns, are often more cost-effective than traditional advertising methods.

8. Enhanced Customer Experience

24/7 Accessibility: E-commerce platforms are available around the clock, allowing customers to shop at their convenience, leading to higher satisfaction and sales.

Mobile Commerce: With the rise of smartphones, businesses can optimize their websites for mobile use, making it easier for customers to shop on the go.

9. New Business Models

Drop shipping: Businesses can operate without holding inventory by using a drop shipping model, where products are shipped directly from suppliers to customers.

Marketplace Models: Companies can create online marketplaces where third-party sellers offer their products, expanding the range of offerings without managing inventory themselves.

10. Omni-Channel Retailing

Seamless Integration: E-commerce enables businesses to integrate online and offline operations, providing a seamless shopping experience across multiple channels (in-store, online, mobile).

Click-and-Collect: Customers can order online and pick up their purchases in-store, combining the convenience of online shopping with the immediacy of physical retail.

E-commerce is not just a trend but a crucial element of modern business strategy, enabling companies to innovate, reach new markets, and stay competitive in an increasingly digital world.

Chapter: 6 Success factors in mobile commerce

Success in mobile commerce (m-commerce) is driven by several key factors that influence user experience, customer satisfaction, and business outcomes. Here are some of the most critical success factors:

1**. User-Friendly Interface**

Intuitive Design: A clean, easy-to-navigate interface enhances user experience. Buttons should be easily trappable, and menus should be simple.

Responsive Design: The platform must work seamlessly across different devices, including smartphones and tablets of various sizes.

2. Performance and Speed

Fast Load Times: Mobile users expect fast-loading pages. Delays can lead to high bounce rates and lost sales.

Minimal Data Usage: Efficient data usage is critical, especially in regions with expensive or slow mobile data.

3. Secure and Simple Payment Methods

Multiple Payment Options: Offer various payment methods such as credit cards, mobile wallets, and bank transfers to cater to different customer preferences.

Security: Implement strong encryption and fraud detection systems to ensure secure transactions. Trust is critical in m-commerce.

4. Personalization and User Engagement

Personalized Recommendations: Use data analytics to provide personalized product recommendations based on user behavior and preferences.

Push Notifications: Engage customers with relevant offers and updates through push notifications, but avoid overloading them with too many alerts.

5. Seamless Checkout Process

Streamlined Checkout: Minimize the number of steps required to complete a purchase. Features like autofill and guest checkout can reduce friction.

One-Click Payment: If possible, integrate one-click payment options to speed up the purchasing process.

6. Effective Search and Navigation

Search Functionality: Ensure the search function is robust, with auto-suggestions, filters, and sort options.

Product Categorization: Clearly categorize products, and allow users to filter and sort products easily.

7. Customer Support

In-App Customer Service: Provide easy access to customer support through live chat, Chatbots, or a dedicated support section.

FAQ and Self-Service: An accessible FAQ section or self-help tools can resolve common issues quickly.

8. Social Integration

Social Sharing: Allow users to share products or their shopping experiences on social media platforms, which can drive more traffic.

Social Proof: Integrate user reviews and ratings to build trust and credibility.

9. Loyalty Programs

Rewards and Incentives: Implement loyalty programs that reward repeat customers, encouraging them to return.

App-Exclusive Deals: Offer special discounts or deals exclusively to app users to increase app engagement.

10. Analytics and Optimization

Data Analytics: Continuously track and analyse user behavior to optimize the app and the shopping experience.

A/B Testing: Regularly conduct A/B tests on different features and layouts to find what works best for your audience.

11. Marketing and Visibility

App Store Optimization (ASO): Optimize the app listing in app stores to increase visibility and downloads.

Mobile Advertising: Use mobile-specific advertising campaigns, including in-app ads, to reach a larger audience.

12. Cross-Platform Integration

Consistency Across Channels: Ensure a consistent shopping experience across mobile, web, and physical stores, allowing users to switch seamlessly between them.

By focusing on these factors, businesses can enhance their mobile commerce platforms, improving customer satisfaction and driving higher sales.

Chapter: 7 Credit Card and Debit Card Payment Rupay Cards

Credit card

INTRODUCTION

Industries in the manufacturing sector grew because they produced tangible goods which satisfied physiological needs of human beings like food, shelter and clothing. As these basic needs were fulfilled there was a demand for improved satisfaction, and this led to a proliferation of variations in the same product and number of companies involved in their manufacture. The economic development of society and the socio- cultural changes accompanying these changes, has led to the growth of service industry. Increasing affluence combined with increasing complexity of life and increasing insecurity has led to the phenomenon of CREDIT CARDS. The credit cards provide convenience and safety in the purchasing process. The Credit card is generally known as "plastic money', as these cards are made of plastic, is widely used by the consumers all around the world. The convenience and safety factors add value to these cards. The changes in the consumer behaviour led to the growth of credit cards. Credit card is a document that can be used for purchase of all kinds of goods and services in the world. It is a card that identifies its owner as one who is entitled to purchase things without cash, purchase services without money and be eligible to get credit from a number of establishments. The cards issuer issues credit cards depending on the credibility of the customers and also enters into a tie-up with merchant establishments which are engaged in various fields of business activities**.** The issuer, for its convenience and for proper scrutiny sets up a credit limit on its card holders and a floor limit for its merchant establishments. The credit card offers the individual an opportunity to buy rail/air tickets, make purchases from shops, and stay at hotels when they need. A credit card also enables an individual to purchase certain products/services without paying for them immediately. He needs only to present the credit card at the cash counter and has to sign some forms. In short, he can make purchase against credit card without making immediate cash payment. Therefore, credit cards can be considered as a good substitute for the cash and cheques. However, these cards will be accepted only by those establishments which have consented to entertain, them. These establishments are known as Merchant Establishments.

What is Credit card

A **credit card** is a card which allows people to buy items without cash. Each card has a unique number. Using this number, plus other details on the card (such as the validity date, or a code), the client can buy goods or services. The issuer of the card automatically transfers

the money to the seller. The person using the card gets a credit. The customer has a certain amount of time to pay the credit card bill. If the bill is left unpaid for some time, the customer will have to pay interest for the amount that is left unpaid. Payment using a credit card is one of the most common methods of electronic payment. A debit card similarly allows paying without cash, but it pays with money in the user's bank account.

Two credit cards

Credit cards are usually small plastic cards with a unique number attached to an account. Most are magnetic stripe cards and many have an EMV chip for use by card readers. Paying with a credit card means you borrow the money and must pay it back in a specified time. Users who fail to pay in time may have to pay much more.

HISTORY OF CREDIT CARDS

Even in the earlier days some companies and shops used to sell goods on credit depending upon the credibility of the consumers. This system helped both consumer and the creditor. If we analyse the past, we can see that some form of local credit invariably exists. World's first credit card was issued by MOBIL OIL in the year 1940. This was initially issued by the company to give specialized services to its regular customers. This helped them to boost sales and increase customer base. Following the success of MOBIL CARD, various organizations began to think about the use of cards in different areas like travel, leisure, etc. this resulted in the introduction of DINERS CLUB, AMERICAN EXPRESS and CARTE BLANCHE cards. The period following World War II saw USA becoming the world's first "service economy". It is quite obvious can be see that the main growth and development in the credit card business took place in USA during this period. First bank credit card was issued by RANKLIN NATIONAL BANK, USA, in the year 1952. During this period, credit cards were issued and operated without any specific system. For the successful operation of credit cards, the banks found a need for a particular acceptable system. Thus, in 1960 present credit card operating system was developed by BANK OF AMERICA, USA. It was subsequently licensed to some other USA Banks and eventually to an international bank card system called VISA INTERNATIONAL. Other competing USA banks followed and another international bank card system called MASTER CARD was established. Today VISA and MASTER CARD together command the bulk of credit card business. Banks in the USA wanted to introduce the credit card system in other parts of the world. As a part of it, in the year 1966 the same successful system was licensed to BARCLAYS BANK, UK and BARCLAY CARD was launched with VISA tie-up. ACCESS CARD was launched in the 1962 in UK by a consortium of British and Scottish banks with MASTER CARD tie-up. With the astounding success of

credit card system in UK, EURO-CARD was introduced in most of the West European countries with ACCESS tie-up. The eighties saw the development of special purpose cards. There was a host of special purpose cards issued by departmental stores, airlines, oil companies, etc. First women only card-MY CARD was launched by INTERNATIONAL BANK OF ASIA in Hong Kong in the year 1988. The membership was highly encouraging. Seeing the potential LADYS CARD was introduced in Malaysia. In 1990 GREEN CARD was launched in U.K. and Europe to promote contribution to the protection of the environment.

Credit cards and debit cards are both commonly used for making purchases, but they function differently and have distinct features. Here are the key differences:

TYPES OF CREDIT CARDS

The credit card system can give a wide range of products and services. The varied uses of credit cards can be obtained from a spectrum of acceptance venues. Today's payment business is growing dramatically while consumer demand is driving the industry's growth, technology is making it possible to address that demand with a broader range of products and with the ability to support these products, at an expanded spectrum of points of interaction. The growth of service industry mainly depends on knowing the needs of the customer. These needs are taken care off by different card issuers which target different segments of customers. Thus there are generally four basic types of cards based on the issuers:

- TRAVEL AND ENTERTAINMENT CARD, for example: DINERS CLUB CARD
- BANK CARD, for example: CITI BANK CARD, BOB CARD, ICICI CARD, SBI CARD, etc.
- STORE OR RETAIL CARD for example: SEARS REOBUCK CARD, SPENCER'S CARD
- FUEL CARD, for example: MOBIL CARD, BHARAT BOB CARD, CITI BANK-INDIAN OIL CARD

There are many types of credit cards which are being used in India and in the World.

These cards can be classified as follows depending on the geographical reach, usage pattern and the class of membership, etc.

Category I: Based on mode of credit recovery

a) Credit card (Revolving credit type)

b) Charge card

Category II: Based on status of credit card

a) Standard card

b) Business card

c) Gold card

Category III: Based on geographical validity

a) Domestic usage card

b) International usage card

Category IV: Based on Franchise/tie-up

a) Proprietary card

b) Master card

c) VISA

d) Domestic Tie-up card

Category V: Based on the category of the user

a) Cards issued to Individuals

b) Corporate cards

Now let us know more about each of these categories of cards.

Category I: Based on Mode of Credit Recovery

a) Revolving credit type of credit card: This credit card is generally built around the revolving credit principle. Generally, a limit is set to the amount of money one can spend in a month using the card. At the end of every month, the card holder has to pay a percentage of the outstanding credit (this may be from 5% to 10%). Interest is charged on the outstanding amount. The interest rate charged by the issuer may vary from bank to bank.

b) Charge Card: A charge card is a convenient instrument not a credit instrument. Instead of paying cash or Cheque every time you make a purchase, this facility gives a consolidated bill for a specific period (usually a month). Bills are payable in full on presentation, so there are no interest charges and no pre- set spending limits either.

Category II: Based on Status of Credit Card

a) Standard Cards: It is a normal credit card generally issued by all card issuing banks, by which a card holder is able to purchase without having to pay cash immediately. It offers limited privileges to card holders when compared to the holders of other cards in this category. Some banks issue standard cards in the brand name as "CLASSIC" cards, etc.

b) Business Card: Business cards are generally issued to small partnership firms, solicitors, firms of CA's, tax - consultants, etc. These cards are given to the executives of a firm to make

their business trips more and more convenient. It enjoys more credit limits and privileges than the STANDARD cards. These cards are issued in the name of "EXECUTIVE" card by some banks. These cards mainly serve the credit needs of business persons particularly when they are traveling.

c) Gold Card: The Gold card is one which has got a high value for the elite. It Credit Cards offers the card holder some additional benefits and facilities which he can't enjoy with Standard or Executive cards. These cards will have more credit limits, more cash advance limits than the other cards.

Category III: Based on Geographical Validity

a) **Domestic Card**: These are generally available credit cards from most of the banks, and will be valid in India and Nepal only. They can't be used in rest of the countries. All the transactions will be in rupees only.

b) **International Cards**: This type of credit cards will be issued to persons who travel abroad frequently. These cards will be honored in every part of the world except in India and Nepal. The card holder can make purchases in currencies such as Dollars etc., subject to RESERVE BANK OF INDIA AND FEMA **rules and regulations**.

Category IV: Based on Franchise/tie-up

a) **Proprietary Card:** Generally, credit card issuers will have their own brand of credit card reflecting the name of the bank (example CANCARD of Canara Bank). These cards will be issued by the banks in addition to their other tie-up cards.

b) VISA: This is a type of credit card which can be issued by any bank, that is having tie-up with VISA International Corp., USA (The original Visa Card issuers). The banks which are issuing Visa Cards on franchise basis can avail the facilities of Visa network for their transactions.

c) Master Card: This is also a type of credit card having brand name as Master Card. The issuing bank has to obtain permission or franchise from the Master Card Corporation of USA. The franchised cards will be honored by the establishments which are in the Master card network.

d) Domestic tie-up Cards: These are the cards issued by a bank having a tie-up with domestic credit card brands such a Can card and in card etc. (Example: Indian Overseas Bank has tie-up with Can card). These banks issue cards to users through the original banks. However, they can have the bank name on the card. They give credit to customers on similar lines as the original card issuers. Though there inspire of the existence exists all these types of cards in

India, most of the issuing Banks have either tied up with Visa or Master or both the networks in order to have wider acceptability.

Category V: Based on the Category of the User

a) **Individual Cards:** This category of cards is issued to individual persons. Generally, all the brands of cards will be given to individuals except Corporate cards.

b) **Corporate Cards**: This type of credit cards is issued to corporate companies and business firms only. These credit cards will be used by the executives and top officials of the firms. The cards bear the name of the firm. Bills will be paid by the firm to the banks. Now-a-days two more new types of cards came into market. They are: 1) mini credit cards, and 2) pre-paid credit cards. Mini Credit Card resembles a normal credit card in most ways except in size. It is about 40% smaller in size and provides the convenience of carrying. Sometimes, there may be some additional freebies attached to these cards. Standard chartered visa mini cards and ICICI Bank visa mini cards are examples of this type of cards. In case of pre-paid card, a customer has to make the payments in advance and get the card charged. This means the customer is not getting credit facility from credit card and on the contrary he is paying his expenses before he actually spends. Presently oriental bank of commerce and IDBI Ltd. are offering these cards.

ADDITIONAL FACILITIES AND SERVICES

Besides providing credit facility, credit card organizations extend some additional facilities to attract more customers. Some of these facilities offered by Indian and foreign banks are: revolving credit facility, free insurance, emergency cash, tele-draft facility, flexi-limit, 24-hour helpline, lost card liability, and mutual funds. In addition to this, these banks have used their strong clientele of card holders with strong purchasing power as a leverage to extract certain facilities/concessions for their customers from the merchant establishments. There are some facilities which are exclusive. These are: 'Great Life' offers, airport lounges, special hotel privileges, special hospital facilities, special travel services. Some of these facilities and services are explained in detail hereunder.

a) Free Insurance Protection

Some of the Indian and Foreign Banks depending on the type of card issued, insures the life of the cardholder free of cost for a particular sum. Citibank offers a complimentary personal accident insurance up to Rs. 20 lakhs in case of an air accident and up to Rs. 5 lakhs in case of any other accident to its international gold master card holders. BOB card issued by the Bank of Baroda extends insurance protection to add-on cardholders also. It's not only insures the cardholder against personal accident to the tune of Rs.10 lakhs in case of air travel

or Rs. 5 lakhs in case of any other accident but also gives the benefit of personal accident cover to the add-on cardholder to the tune of Rs. 2 lakhs.

b) Emergency Cash Withdrawal

All the credit card issuing banks provide emergency cash withdraw facility to its card holders Cardholder can withdraw emergency cash from 24 hour ATMs in all leading cities. The Indian Banks believe in not restricting cash withdrawing power only at a few automated and/or metropolitan locations, therefore, they allow the cardholders to draw cash from all notified branches of Indian Banks spread across the country.

c) Twenty-four-hour Customer Service

The revolutionary phone banking service ensures that the Indian and Foreign Banks are just a phone call away and courteous banking officers are standing by to assist the cardholder twenty-four hours a day, seven days a week. Foreign Banks provide a world class service to card holders. One can call phone banking and ask for temporary credit line increase any, time in the day or night.

d) Photo card Option

A cardholder may choose to have his photograph and signature digitally imprinted on the front of his card in color. So that he gets the extra recognition and security if he/ she losses the card. This facility is also provided by all foreign banks and most of the Indian banks.

e) Travel Privileges

The banks provide travel assistance to their cardholders by offering a wide range of services like Airline and hotel bookings, discounted holiday packages, car rentals and more. For example, Bank of Baroda has entered into a tie-up with I.B.T.C. to provide Credit Cards these services and Hong Kong Bank has a tie-up with SITA World Travels to provide the same services. Through SITA World Travel's vast network of offices, a package of exclusive travel services: Tele ticketing, Special Holiday and Conference packages, International and Domestic tickets and Car rental services etc. are provided to the cardholders who are travelers at SITA.

f) Temporary Credit Line Increase

Indian and foreign banks provide a temporary credit line increase based upon the ability to pay back, as demonstrated by cardholder's financial resources and his past spending and payment patterns. This credit line can be increased by 25% for 3 months. The cardholder can ask for a temporary credit line increase from the Banks when he wants to buy jeweler, or consumer durables like a TV or a Refrigerator or to pay for vehicle repairs. He/she can also use this unique feature when there is a function in the family like weddings, anniversaries, birthdays or when a business or holiday trip goes beyond the budget.

g) Draft on Phone

Credit cardholders of selected Indian banks and foreign banks can use their cards to pay for personal expenses where credit cards are not accepted yet. All that the cardholders have to do is to call the bank and instruct it to make payment for mutual funds, public issues, making down-payments, and paying telephone and electricity bills.

h) Choose when and how to Pay

It is possible to purchase high-value items with the flexibility to plan your payments. All the Indian and foreign banks offer a revolving credit facility that allows the cardholder to get the things that he/she wants, when he/she needs them the most and pay as little as 5% of his total outstanding every month.

i) Buy anything on your Card

The cards issued by Indian and foreign banks are welcomed at member establishments which are franchisees of Master Card and Visa Card across India and Nepal. The credit card can be used both for major occasions and also for everyday purchases like groceries, cosmetics, petrol and auto accessories. To buy high-value items also the card can be used. And even paying customs duties and hospital bills becomes so convenient with card.

j) Purchase Protection

This facility protects the purchase against damage or loss due to fire and theft at no extra cost. The cardholder can claim the value of the product damaged or lost from the Insurance Company. This protection may be available for a specific period from the date of purchase of the product on the card.

k) Fuel Facility at Petrol Pumps

Fuel facility at Bharat Petroleum outlets is provided by BOB card and likewise at Indian Oil petrol pumps, Citibank and Standard Chartered Cards are accepted. This is very convenient for cardholders at many major cities.

l) Emergency Medical Advance Facility

Cardholders can draw cash in case of medical emergencies for meeting expenses on treatment at location other than their home town. This facility is available with all Indian and foreign banks depending on the type of cards issued by the bank. 10% to 20% discount on services at hospitals in leading cities across the country is offered to cardholders by Standard Chartered Bank. This facility covers special rates on medical facilities, diagnostic tests, check-ups, lab tests, nursing charges and professional fees.

m) Supplementary Cards

As a cardholder of any Indian or foreign bank one can obtain a maximum of two supplementary cards for his immediate family members at the prevailing card fee.

n) Hotels Discount Facility

Cardholders can receive membership to clubs at a special price. The programme also earns some points on every rupee charged, every time the cardholder dines or stay at the hotel. Specifically, 25 points for every Rs. 1,000 spend plus an extra 10% points credited to the cardholder's account if he uses his card along with his hotel club card. These points can also be exchanged for Airline tickets, hotel stays and consumer products ranging from Microwave oven to Ray-ban sun glasses. Cardholder can also earn points by using the services of select airlines who have a tie-up with the respective bank.

o) Joint Credit card and ATM Facility

Foreign and Indian banks alike have introduced a joint credit card so that the cardholder can also access his personal accounts with the Bank (Savings/Current) through the ATMs.

p) Validity and Renewal of the Card

The cardholder can use the card within the validity period only. A new card is sent by Indian and foreign banks once in every 2-3 years before the expiry of the old card. The fees and the eligibility criteria from credit cards varies from one bank to another. It is cheaper to get a card made from Indian banks compared to foreign banks. All the above facilities/services are not necessarily offered by each and every credit card organisation in to two. Different organizations may be offering different services to different types of cardholders. Similarly, the degree and amount of facilities may also be different in the case of different organizations and may keep changing from time to time.

CREDIT CARD BUSINESS CYCLE

Credit cards enable the holder to make purchases, avail the services at various designated Merchant Establishments (MEs) like Departmental Stores, Star Hotels, Indian Airlines, Railways, etc., who will accept all valid credit cards in lieu of cash payment. In this way, the cardholder can avoid the risk of carrying cash. When a cardholder purchases anything, he presents his credit card to the Merchant establishment instead of paying cash. The retailer checks the number on the card against the hot list or warning bulletin provided to him by the bank. This is the authenticity test which proves whether the cardholder is the genuine owner of the card or not. The cardholder is also required to sign on the voucher, and the signature has to tally with the one on the credit card. The merchant establishment has to then present the

necessary sales vouchers to the bank which in turn reimburses it for the customer's purchases. The bank charges a commission from the merchant establishment, rates of which vary from bank to bank. After the completion of this procedure, it sends the bill to the cardholder and receives the money.

The credit card operating cycle comprises of the following six steps:

1) Cardholder purchases goods/services and gives credit card;

2) Merchant Establishment delivers goods after taking credit card and noting the number and taking signatures on some forms.

3) Merchant Establishment raises the bill for the purchase and sends it to the credit card issuing Bank for payment.

4) Issuing Bank pays the amount to the Merchant Establishment.

5) Issuing Bank raises the bill on the credit cardholder and sends it for payment.

6) Credit cardholder makes the payment to the Issuing Bank.

BENEFITS OF CREDIT CARDS

The benefits of credit cards can broadly be classified into two categories, benefits to the cardholders and benefits to the issuers. Benefits to the Cardholders: the following are the benefits the user will get by using a credit card:

1) The first and most useful benefit is that the cardholder need not carry cash and he needs to just take credit card with him during his travel or during shopping.

2) It will benefit the user as a convenient instrument for paying any type of bills and for buying anything just by paying hardly 5 to 10 per cent of outstanding credit per month.

3) The cardholder will be covered by free life insurance.

4) It can be used for identification purposes in some situations, since some credit cards will contain photo of the cardholder.

5) Rewards and free gifts to cardholders by the use of the credit card being offered by some banks.

6) Special counters and online booking of Air and Rail tickets to these card holders.

7) Entry to special lounges in airports for certain classes of credit cards.

8) 24-hour help-line to cardholders of certain credit cards.

9) Cardholders of certain cards get complimentary magazines.

10) Add-on card facility for the holder's spouse, parents and major children.

11) If the credit card is stolen/lost the liability will be limited to a maximum of one thousand rupees or zero liability in case of some cards.

12) up to 30 to 45 days' free credit to users.

13) Some credit card holders will get free services such as confirmed ticked bookings, hotel reservations from certain travel agencies.

14) Cardholders can get benefit from the world-wide network of certain cards like Amex, Master card and Visa.

Advantages of Credit Cards Business to Issuers

Apart from the advantages to users of credit cards, there are also advantages to credit card issuers. Some of the advantages to issuers are:

1) The reasons for more and more banks jumping into this credit card business is the high profitability that this business offers. For instance, banks charge a 2.5% commission from establishments selling goods and services through credit cards. There are instances of banks charging as much as 7% to high margin merchant establishments like Antique shops.

2) For the customers, banks offer a credit period of 30 to 45 days, but charge 2.5% per month on all outstanding. Thus, a single purchase transaction through credit card, assuming the customer does not pay within the stipulated credit period, will fetch a commission much more than the lending rate of many banks.

3) Apart from the above financial yields, the issuers can also improve their name and image by serving huge number of credit cardholders. This may also promote the regular banking of the issuers. So the issuers can very well improve their turnover, and thereby profitability, image and regular banking by improving the credit card business. After listing the uses/benefits of the credit cards, let us see, whether the credit card has any drawbacks to the user or not. There are some drawbacks, though these are very few when compared to the advantages. Some of the drawbacks are:

1) It is a waste of money to subscribe to credit card if the utility of the card is less.

2) It may lead to some unnecessary purchases. Since the user need not pay instantly, it may tempt them to purchase some products/services which are not required/needed at the time of their shopping.

3) If the repayment of the credit used is not done properly it may lead to more overdraft, finally it may drag the user into financial problems.

4) Sometimes the recovery agents appointed by some issuers, may pressurize the users to pay the outstanding dues. This may lead to loss of mental peace to the user.

5) Since most of the honoring merchant establishments offer only the products/ services at a higher cost than outside the user may pay more of his precious money unnecessarily.

INDIAN SCENARIO

The first credit card that entered in India was Diners Club Card in the year 1964. The First-Indian Banks to launch credit cards were ANDHRA BANK and CENTRAL BANK. The first credit card introduced by Andhra Bank was VISA Classic in the year 1981, followed by Central Bank of India's credit card in collaboration with Master Card Corporation in 1981. The other nationalized Banks-Canara Bank, Bank of India and Bank of Baroda etc., gradually introduced their credit cards in India. Though ICICI Bank and SBI, entered late, have emerged as major players among the Indian Banks. Apart from these Indian banks, many foreign banks such as CITI Bank, Standard Chartered Bank, ANZ Grind Lays Bank, Bank of America and American Express Bank have also Credit Cards introduced their proprietary cards and other franchised cards in India through their branches in India.

Initially, Indian Banks issued only proprietary cards. These were valid as Charge cards in a merchant base which was exclusive to the market. Early tie-ups like those of Central Bank of India with Master card and Andhra Bank with VISA in 1981, were solely for acquiring business. There are many major banks both foreign and Indian banks which are giving cards in India at present. Many other banks such as Indian Overseas Bank; Dena Bank; Corporation Bank; Vysya Bank are having affiliations to the principle issuers like Canara Bank, Citi Bank, Bank of India for issuing credit cards to users using the brand name of original issuers. Now, in India the credit card business is a multi-crore business. In 2004, the cardholders of international visa card alone have spent Rs. 4,100 crores in India. This is an increase of more than 40% from the last year. This is primarily because of India becoming a popular tourist destination with more and more tourist visiting India. According to current growth estimates, the spends on the credit and debit cards are likely to see a three bold increase i.e. to Rs. 62,000 crores. In the next five years the total number of credit cards are likely to increase to 35 million. An under – tappet market, growing middle class and consumerism, new segments and new categories of cards and cardholder are expected to be major contributors for this growth. In India, at present there are many credit cards being sold by both foreign and Indian banks. These include nationalized banks, private sector banks and some cooperative banks. Almost all the credit cards issued by these banks are the Franchisees of original Master Card or VISA Corporation.

REGULATION OF CARD BUSINESS

From the above discussion it is clearly evident that the card business is going to grow at a rapid speed. Already we find multiple cards not only in a single family but also multiple cards with a single individual. This is because of the growing consumerism, changing life styles, increased use of IT in India, etc. it is also natural, with the growth of business the related problems also increase some of these problems are:

Charging of hidden costs, making of false promises with regard to waiver of charges and providing additional facilities, disturbing people with unsolicited offer of cards by direct selling agents, etc. In addition to these problems, the problem of misuse of cards by the unauthorized persons is also likely to increase. In order to deal with these problems is a need to work out a code of conduct and some regulation by the regulator who can attend to the genuine grievance of the card holders. The Indian Banks' Association and the reserve Bank of India are in the process of working out some regulation in relation to the credit card industry. The Reserve Bank of India may soon empower its 15 ombudsmen to redress complaints of aggrieved credit card holders against banks indulging in unfair practices. With this card holder shall have some grievance redressal mechanism and there will be some regulation in the credit card industry.

Credit Cards

Borrowing Funds: When you use a credit card, you're borrowing money from the card issuer, which you'll need to pay back, usually with interest if not paid in full by the due date.

Credit Limit: Each card has a set credit limit, which is the maximum amount you can borrow.

Interest Rates: If you don't pay your balance in full each month, you'll be charged interest on the remaining balance.

Rewards: Many credit cards offer rewards, such as cash back, points, or travel miles, for purchases.

Credit Score Impact: Proper use of a credit card (e.g., making on-time payments and keeping balances low) can help build or improve your credit score.

Fraud Protection: Credit cards typically offer stronger fraud protection, with limited liability for unauthorized transactions.

SUMMARY

Credit card business is fast catching up in the country. The potential available for the business in a country like India is really vast. Credit card business is going to be a major segment of banking business in our country also. It is going to be a major profit center for

every bank. The credit card is now an opportunity of our everyday life. The choices available in the market are many and most cards offer different features. In addition to credit, credit cards provide various other facilities and services like free insurance protection, emergency cash withdrawal, draft on phone, temporary credit-line increase, choose when and how to pay, buy anything on your card, purchase protection, fuel facility at petrol pumps, emergency medical advance facility, hotel discount facility, ATM facility, etc. Various benefits are available through credit cards to the cardholders as well as to the operating agencies. In India, many Indian and foreign banks are offering credit cards. There are many innovations that are gaining more and more popularity in the payment business like- Smart Card, Debit Card and E-Commerce, etc.

Debit Cards

INTRODUCTION

A Debit Card is a popular type of money that many of us carry with us. As digitization has increased rapidly over the past few years, plastic and electronic money have become very famous. A Debit Card is one of the most popular and widely used forms of plastic money.

When it comes to a cashless society, Debit Cards are your pals. You can avoid carrying rolls of cash wherever you go by using this. Almost as simple as using money, using a Debit Card is more secure and safer. They are helpful anytime and anywhere.

Debit Cards are compatible with various mobile payment systems, including Apple Pay, Samsung Pay, and Google Pay, as well as with cash registers, ATMs, and numerous money transfer apps, including Venmo and Cash App.

In this blog, we've compiled a comprehensive overview of Debit Cards, along with all the essential details about them that everyone should know.

Debit Card: Benefits, Types, Best Debit Cards

A Debit Card is a popular type of money that many of us carry with us. As digitization has increased rapidly over the past few years, plastic and electronic money have become very famous. A Debit Card is one of the most popular and widely used forms of plastic money. When it comes to a cashless society, Debit Cards are your pals. You can avoid carrying rolls of cash wherever you go by using this. Almost as simple as using money, using a Debit Card is more secure and safer. They are helpful anytime and anywhere.

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So continue reading to discover the wonders of a Debit Card!

Understanding Debit Card

Debit Card Definition – A Debit Card is a prevalent type of plastic money that gives you electronic access to your savings account at any bank.

The access is generally via ATMs. For example, suppose you swipe your Debit Card to pay a bill in a restaurant. Now, the concerned amount can only be used if it is already in your bank account when swiping the Debit Card. This is contrary to Credit Cards, where money can be accessed in advance and paid later.

These days, a debit card is readily offered when opening a new savings account, even without applying for one.

There are four significant debit issuers Cards worldwide – *American Express, Discover Card, Master Card,* and *Visa*. In addition, some country-specific Debit Card issuers are - Union Pay in China, Rupay in India, and Maestro in the United Kingdom.

How Are Debit Cards Beneficial?

- Debit Cards give you access to instant cash because they are almost universally accepted at ATMs.
- Additionally, it reduces costs associated with handling large amounts of cash and helps merchants swipe Debit Cards on point of Sales (PoS) devices.
- Banks encourage using Debit Cards by providing a range of incentives, including cashback deals, bonus points, free movie tickets, and more.
- Using Debit Cards instead of carrying cash makes it easier to keep track of your spending. In addition, they provide practical features like email and SMS alerts with information on every transaction.
- In contrast to a Credit Card, it promotes frugal spending. Only funds that are currently in your savings bank account may be spent.

● Unlike in the case of a Credit Card, here you cannot spend in advance, and thus it reduces the risk of irrational spending.

Types of Debit Cards in India

We categorize Debit Cards in this segment according to their technology, usage, and payment platform. But first, let us examine the various types of Debit Cards.

1. Visa Debit Cards

A Visa card is a payment card branded by Visa and operates on the Visa network. The company started only with Credit Cards but has since expanded to include Debit, prepaid, and gift cards. Even though Visa cards bear the Visa logo, they are not issued by the company.

2. MasterCard Debit Cards

Debit MasterCard is a Debit Card brand offered by MasterCard. They use the same structures as standard MasterCard credit cards but do not provide the customer with a line of credit, instead relying on funds in the customer's bank account.

3. Rupay Debit Cards

Rupay Card is a domestic Indian card created and initiated by NPCI in 2012. This card was launched in the Indian payment strategy to eliminate the monopoly of foreign gateways such as Visa and MasterCard because these are foreign or American companies with high commissions, resulting in a high transaction cost.

4. Contactless Debit Cards

In a wireless financial transaction known as contactless payment, the customer approves monetary compensation for purchase by placing a security token close to the merchant's point of sale (PoS) reader. Chip-enabled bank cards and smartphone digital wallet apps are standard security tokens for contactless payments.

Other names for contactless payments include touch-free, tap-and-go, and proximity payments. Frictionless checkout is the term used to describe a transaction in which goods or services are purchased using contactless payment.

5. Maestro Debit Cards

MasterCard offers Debit Cards under the Maestro brand. Both in-store and ATM cash withdrawals are possible with Maestro cards. In addition, based on the associated bank, most Maestro cards also support online transactions

When it comes to a cashless society, Debit Cards are your pals. You can avoid carrying rolls of cash wherever you go by using this. Almost as simple as using money, using a Debit Card is more secure and safer. They are helpful anytime and anywhere.

Debit Cards are compatible with various mobile payment systems, including Apple Pay, Samsung Pay, and Google Pay, as well as with cash registers, ATMs, and numerous money transfer apps, including Venmo and Cash App.

In this blog, we've compiled a comprehensive overview of Debit Cards, along with all the essential details about them that everyone should know.

Credit Card Vs Debit Card

You need to understand this fundamental concept. There is a critical distinction between the two.

Credit Card	Debit Card
Credit Cards are borrowed funds issued by banks.	In Debit Cards, the money is subtracted from your bank account when used.
In Credit Cards, interest rates and fees range and differ.	In Debit Cards, there are no interest rates.
Credit cards can provide benefits such as rewards, discounts, and travel points.	Debit Cards can help you avoid debt accumulation.
Excessive compulsive spending through Credit Cards can lead to debt.	Debit Cards do not assist you in building credits.

Debit Cards access the funds held in the cardholder's bank account. On the other hand, a Credit Card is a loan or credit a bank gives. It is comparable to taking out a bank loan and paying it back over time.

On timely repayment of the amount borrowed using a Credit Card, no interest will be paid.

Fees & Charges Associated with Debit Cards

All banks charge some fees for providing the services of a Debit Card. As a Debit Cardholder, knowing the various charges that could be levied on using the debit card is essential. Some of the standard charges associated with Debit Cards are:

1. **Annual Maintenance Fee**

As the name suggests, annual maintenance is a yearly fee charged to the customer for using the Debit Card. It could range from ₹100 to ₹500 in most cases. However, this charge varies from bank to bank and also depends upon the type of Debit Card.

2. POS Fee

This is a unique charge for fuel-based transactions. Usually, no extra charge is levied upon the cardholder for making purchases through the Debit Card. However, only when the Debit Card is used for fuel-based transactions an additional surcharge is set at the rate of 2.5%.

3. Card Replacement Fee

As the name suggests, a card replacement fee is charged for replacing your Debit Card with a new one. The charge for the replacement of the debit card may vary from one bank to another. It also depends upon the relationship of the bank with the client.

4. Duplicate PIN or Regeneration of PIN Fee

This charge is levied in case the cardholder forgets their PIN. A duplicate PIN is sent to the client (either electronically or physically), and a nominal fee is charged for this service.

5. Transaction Charges

Different banks have different policies as regards levying charges based on a number of transactions. But, the transactions made on the same bank's ATM are usually free. However, there is a specific limit on the number of free transactions per bank from other banks' ATMs. Therefore, a nominal charge is levied per transaction if the specified number of free transactions is crossed.

6. International Transaction Charges

As the name suggests, international transaction charges are levied on using the Debit Card for cash withdrawal in foreign countries.

Do's and Don'ts of Using a Debit Card

Debit Cards use technology to facilitate paperless transactions. However, everything related to technology comes with the risk of misuse or fraud. In this regard, special care needs to be taken as to the usage of the debit card.

Let us have a look at some of the fundamental yet essential do's and don'ts related to the usage of the Debit Card-

DO's of Using a Debit Card	DON'Ts of Using a Debit Card
Report Loss of Your Card In case you lose your Debit Card, you must immediately report the loss of the card to the concerned bank. The second step is to stop all transactions from the concerned card and block the card from future misuse.	Don't Use Unsafe Online Platforms Don't use your Debit Card on websites that are not authentic. Many websites are made to extract your personal account details (including PIN) and steal money from your account.

Follow SMS Alerts Setting up SMS alerts for each transaction made using the debit card is advisable. This will ensure safe usage and help you track your Debit Card spending.	Don't Cause any Physical Damage to Your Debit Card Mishandling of the Debit Card could destroy or harm the magnetic stripe or the chip in your Debit Card. A typical example is exposure to sharp objects or magnetic materials. The physical damage can harm the technology in the Debit and render it useless.

Best Debit Cards in India

Let us have a look at a few of the best Debit Cards:

1. ICICI Bank Coral Pay Wave International Debit Card

The ICICI Bank Coral Pay Wave International Debit Card is a revolutionary Debit Card that allows you to make faster, contactless payments. It also promises superior value through exciting shopping, entertainment, and other features.

The Coral Pay Wave Debit Card unlocks a world of convenience, security, and speed. This Debit Card is thus regarded as the best debit card.

2. HDFC Bank RuPay Premium Debit Card

The HDFC Bank RuPay Premium Debit Card has features and benefits that allow you to save money no matter what you spend. For example, you will receive a 5% Cashback and a 1% Fuel surcharge waiver when you use the card to pay your dreaded utility bills. In addition, the card provides you with a Personal Accidental Death/Permanent Disability cover worth up to Rs. 2 lacs.

The RuPay Debit Card is intended for use on Indian websites, merchant outlets, and ATMs. However, it is not intended for international use; therefore, if you want a card that can be used internationally, you must go to a bank branch and request a Visa / MasterCard Debit Card.

3. Kotak Bank Pay-Shop-More International Chip Debit Card

The Kotak Bank Pay Shop More Debit Card is a visa card and one of Kotak Bank's most customer-friendly and beneficial debit cards. The card allows you to shop conveniently and cash-free at over 30 million stores in India.

The card can be swiped smoothly on both websites and mobile apps. Furthermore, you can use your card for shopping even when travelling abroad.

4. **Axis Bank Burgundy Debit Card**

This premium Debit Card by Axis Bank gives users higher daily withdrawal and purchase limits. Moreover, it provides a new 'contactless' feature for a faster and safer shopping experience.

It is one of the selected few cards that allow free ATM withdrawals from any bank's ATM worldwide. Not only this but this Debit Card also provides complimentary movie tickets and access to exclusive airport lounges.

5. **SBI Platinum International Debit Card**

The Platinum Debit Card from SBI is available in Visa and MasterCard versions. Aside from the convenience of cashless transactions and ATM withdrawals, the card provides numerous customer benefits. The card also includes a 5-lakh insurance policy. The State Bank of India Platinum Debit Card provides customers access to cashless transactions and ATM benefits.

The card is issued in collaboration with either VISA or MasterCard. This debit card is ideal for heavy spenders due to its high transaction and withdrawal limits. In addition, cardholders can earn reward points while shopping through the State Bank Rewards Scheme. Hence, this card is another card regarded as the best Debit Card in India.

Debit cards benefits

Direct Access to Funds: Debit cards are linked directly to your bank account. When you use a debit card, the money is immediately deducted from your account.

No Borrowing: You can only spend what you have in your account, so there's no borrowing or interest involved.

No Credit Limit: Your spending limit is determined by your account balance.

Limited Rewards: Some debit cards offer rewards, but they are generally less generous than those offered by credit cards.

Impact on Credit Score: Debit card usage does not typically affect your credit score.

Fraud Protection: Debit cards also offer fraud protection, but it can be more cumbersome to resolve unauthorized transactions as the money is taken directly from your account.

Pros and Cons

Credit Card Pros:

- Can help build credit.
- Offers rewards and benefits.
- Provides better fraud protection.

- Allows for larger purchases with flexible repayment options.

Credit Card Cons:

- Can lead to debt if not managed properly.

- High interest rates on unpaid balances.

- Potential for overspending.

Debit Card Pros:

- Direct access to funds with no interest charges.

- Helps with budgeting as you can only spend what you have.

- Easier to avoid debt.

Debit Card Cons:

- Less fraud protection compared to credit cards.

- Doesn't build credit.

- Fewer rewards and benefits.

Choosing between a credit card and a debit card depends on your financial habits, needs, and goals. Many people use both, leveraging the benefits of each for different types of transactions.

Conclusion

Debit Cards have become an essential part of our daily lives. The responsible and efficient use of Debit Cards greatly simplifies our transactions. In addition, it is very portable and simple to use, and it is accepted in most places via Point of Sale (PoS) machines.

A Debit Card's primary feature is that it Debits Funds directly from the cardholder's bank account.

This is what sets it apart from a credit card. Users can choose from various debit cards based on their requirements and convenience. In addition, they come with a slew of intriguing advantages and rewards.

Payment Rupay Cards

INTRODUCTION

RuPay is an Indian multinational financial service payment network launched by the Reserve Bank of India (RBI) in the year 2012. It is a National Payment Corporation of India's (NPCI) initiative to boost retail payments in India. RuPay was launched with an objective of a less cash economy. It is derived from the words "rupee" and "payment", which highlights that it is India's approach to virtual card (Vcard) payments.

A RuPay debit card is a plastic card used as a method of payment issued by the bank to a customer who has a bank account with them. It has wide acceptance at any point of sale (POS) devices, automated teller machines (ATMs) and e-commerce platforms. RuPay is India's entry into the international payment market through a local card facility. RuPay is an Indian multinational financial service payment network launched by the RBI in 2012. Here's all you need to know about RuPay debit cards.

RuPay is an Indian domestic card payment network launched by the National Payments Corporation of India (NPCI). Here are some key points about RuPay cards:

Types of RuPay Cards: RuPay offers various types of cards including debit, credit, and prepaid cards. These can be used for ATM withdrawals, online transactions, and point-of-sale (POS) purchases.

Types of Rupay Debit Cards

The RuPay debit cards are available in various plans based on qualifications.

RuPay Classic Debit Card

The basic classic debit card caters to the growing class segment of society. It lowers the annoyance of carrying various cards and you can just carry an all-purpose RuPay classic debit card. It is well-designed and can be used for both online and offline transactions. It also can be used at a wide range of ATMs to withdraw cash and to avail of various merchant offers.

RuPay Platinum Debit Card

The platinum card caters to the rich segment of society. It offers exclusive and advantageous benefits to the Rupay platinum debit card holders. They can get amazing discounts like Amazon Pay and Swingy offers and cashback on every transaction done on the utility bill.

Other Benefits

- Complimentary Lounge Program
- Up to INR 2 lakh Comprehensive Insurance Cover
- Exclusive Merchant Offers
- 24/7 Concierge Services

RuPay Select Debit Card

The select card caters to the High Net worth Individual segment of society. It is highly curated with premium offers that suit the wealthy lifestyle of cardholders. The offers hold a great understanding of the elite section of society and have amazing gym and wellness offerings.

Other Benefits

- Spa Services
- Health Check-ups
- Lounge Access
- Golf Program
- Up to INR 10 lakh of Comprehensive Insurance Cover
- 24/7 Concierge Services

Contactless Debit Card

RuPay's contactless debit card offers one simple solution for all your low-value transactions. It's quick and used for daily transactions that include bus, cab, metro, toll, parking and other fewer amount payments. The aim is to go contactless to provide a quick implementation for low-value payments (LVPs).

A contactless debit card allows you to make payments within seconds. You just have to tap the card on the card reader and it's done, no trouble entering the pin or remembering a password. The contactless card limit is up to INR 5,000 a day without entering a pin at the POS.

Government Schemes Debit Card

There are various government schemes utilized by the people under the RuPay cards.

PMJDY (Pradhan Mantri Jan-Dhan Yojana) Debit Card:

The RuPay PMJDY debit card is issued to customers who have an account under the scheme. It is a national initiative for financial inclusion that was expanded to provide citizens access to banking and financial activities. The card allows the user to make transactions at all ATMs, e-commerce sites and POS terminals. It also has insurance coverage for disability and personal accidental death.

Pun Grain:

The farmers who have an account under the Pun Grain Scheme can register for the RuPay Pun Grain Card. It is a grain procurement project developed by the Punjab government in the year 2012. The main objective was to help Punjab farmers benefit from the services of

Arthias. The RuPay Pun Grain Debit Cards can be used at any POS, e-commerce sites, ATMs and to avail automated grain procurement facilities at the mandis.

Features of RuPay Debit Card

RuPay debit cards have some amazing features that can be compelling.

- RuPay debit card is a domestic payment gateway.
- The transaction cost is low.
- The transaction processing is faster.
- RuPay banks don't have to pay any network registration fees.
- It is handy and accessible even in rural areas with limited or no banking availability.
- Customers can easily book train tickets via Indian Railway Catering and Tourism Corporation (IRCTC) RuPay prepaid debit card.
- RuPay debit cards offer higher transaction and withdrawal limits with mobility.
- RuPay debit cards are accepted in more than 10,000 e-commerce sites, 1.8 lakh merchant terminals and over 8 lakh POS terminals.

Steps to Use RuPay Debit Card for Online Transactions

If you are new to using a debit card for online transactions follow the simple steps:

Step 1: For using a RuPay card you have to register for e-commerce payments.

Step 2: Once registered, a payment screen will appear. Click on the RuPay card as your option for the transaction.

Step 3: Enter the details like your card number, expiry date and Card Verification Data (CVD) which is either a three-digit or a four-digit number behind your card.

Step 4: You will receive a one-time password (OTP) on your registered mobile number or your registered email address and then enter the OTP.

Step 5: Now you have to choose an image from a collection of images and the image you choose is essential as it will be required for all your future transactions.

Featured Partners

1

IndusInd Bank Savings Account

Interest Rates on Savings Account Up to 6.75*% p.a

Fixed Deposit Interest Rates 7.99*% p.a (with sweep in/sweep out Rewards

Discounts and Offers on top brands*

2

IDFC Saving Bank Account

Interest rates Up to 7.25% p.a*

Features Zero Charges on all Savings Account Services, IMPS, Debit Card, SMS Alerts & more

Benefits Free and unlimited withdrawals

3

Axis Bank Amaze Savings Account

Welcome Benefits Enjoy rewards worth Rs. 11,000

Other Benefits

Zero-balance account, no domestic banking charges, Free debit card and Cheque book, Get 3 months of Amazon Prime (INR 599) with your first online rewards card transaction within 30 days.

Fees INR 200/month

4

Yes Bank Savings Account

Interest rate: up to 6.25%

Balance required: Zero

Special feature: Earn up to 16000 Yes Bank Rewards Points worth 4000 INR RuPay is an Indian multinational financial service payment network launched by the RBI in 2012. Here's all you need to know about RuPay debit cards.

What Are the Required Documents for Applying RuPay Debit Card?

To apply for a RuPay debit card you need to fill in the application form and submit the following documents.

- Proof of address
- Proof of identification
- Two passport-sized photos

Top Banks Offering RuPay Debit Card

State Bank India (SBI) Debit Card

SBI provides three types of debit cards: domestic, co-branded and international. The SBI debit cards are linked to your bank account and the money is deducted directly from your account while you make a transaction.

Key Points

- Some debit cards offer reward points on various transactions that can be redeemed against several products and benefits like complimentary lounge access.
- The terms and conditions are time changes so the benefits are subjected accordingly.
- They exclusively offer equated monthly instalments (EMI) or no-cost EMI at the finest shopping portals.

HDFC Bank Rupay Debit Card

HDFC Rupay premium debit card can be held by both Residential Indians and Non-Residential Indians (NRI). The only condition for residential Indians is to have a salary account, savings account, or current account to hold a RuPay premium debit card.

Key Points

- RuPay premium debit card has a higher withdrawal limit. For ATM withdrawal it is INR 25,000 and for shopping, the limit goes up to INR 2.75 lakh.
- Exclusive offers, 5% cashback on utility bill payments, and various reward points.
- The insurance cover is up to INR 10 lakh.
- Airport lounge access and 24/7 concierge facility

Axis Bank RuPay Platinum Debit Card

Axis Bank RuPay platinum debit card provides cardholders with a wide range of offers and benefits. To enjoy the facilities of the platinum debit, card the customer needs to be an Axis Bank savings account cardholder to enjoy the leverages.

Key Points

- Cardholders can easily generate their personal identification number (PIN) anywhere anytime.
- The cardholders enjoy a higher withdrawal limit on ATMs up to INR 40,000 and a shopping limit of up to INR 2 lakh.
- Exclusive offers include 20% off on dining.
- Airport lounge access and insurance coverage of INR 2 lakh in case of personal accident.

Yes Bank Rupay Platinum Debit Card

Yes Bank RuPay platinum domestic debit card carters to all your domestic needs and provide you with amazing banking services and offers.

Key Points

- The debit card has a withdrawal limit of up to INR 25,000 for both ATM and POS.
- Domestic airport lounge access and amazing offers on dining, entertainment, travel, etc.
- Cashback of up to 5% on utility bill payments and fuel surcharge waiver of up to 2.5%.

Acceptance: RuPay cards are accepted across a wide range of merchants and ATMs in India. They are also gaining international acceptance through partnerships with global networks like Discover, Diners Club, and JCB.

Benefits:

Lower Transaction Costs: As a domestic network, RuPay tends to have lower transaction processing costs compared to international card networks like Visa and MasterCard.

Secure Transactions: RuPay cards come with enhanced security features, including a built-in microprocessor chip and PIN-based authentication.

Government Benefits: Many government schemes and subsidies in India are linked with RuPay cards, making them a convenient choice for accessing these benefits.

Usage:

ATM Withdrawals: RuPay cards can be used for cash withdrawals at ATMs.

Online Shopping: They can be used for online purchases on e-commerce platforms that accept RuPay.

POS Transactions: These cards can be used for purchases at retail stores and other points of sale.

RuPay Contactless: RuPay also offers contactless cards which allow for quick and easy transactions by simply tapping the card on a contactless-enabled POS terminal.

Government Support: RuPay is part of the Indian government's efforts to promote digital payments and financial inclusion. It is widely used in various government initiatives, including the Pradhan Mantri Jan Dhan Yojana (PMJDY).

Chapter: 8 UPI, RIGS, NEFT, IMPS, E-Money

UPI stands for: Unified Payments Interface.

It is a real-time payment system developed by the National Payments Corporation of India (NPCI) that facilitates inter-bank transactions. The system is designed to enable instant transfer of money between any two bank accounts using a mobile device. UPI combines various banking features, enabling seamless fund routing and merchant payments under one umbrella. It also caters to "Peer to Peer" collection requests, which can be scheduled and paid as per requirement and convenience.

Background

The genesis of India's unified payment solution Prior to 2016, India used a number of different systems to transfer money between banks. The traditional forms included RTGS, IMPS and NEFT. With the plethora of systems, rules and growing paper burden, there was a need for a unified system that could automate and standardize India's payment platforms. In 2016, NPCI set out with a mandate to change the face of India's payment systems. It developed the Unified Payments Interface (UPI) as an architecture framework with a set of standard Application Programming Interface (API) specifications to facilitate online payments. The aim was to simplify and provide a single interface across all NPCI systems, thereby creating interoperability and a superior customer experience. The pilot program, with 21 member banks, was launched on 11th April, 2016, by Dr. Raghuram G. Rajan, Governor, RBI, in Mumbai. From 25th August, 2016, a growing number of banks started to upload their UPI enabled apps to the Google Play store

Introduction

Real-time payments with the Unified Payments Interface (UPI) The Unified Payments Interface (UPI) is a revolutionary, user-friendly, real time payment solution that facilitates inter-bank transactions, and enables greater digital payments adoption in the country. Developed and launched by the National Payments Corporation of India in 2016, UPI is now one of the most preferred payment solutions in India, with over a billion transactions every month. UPI's core function is to support easy and secure money transfers between bank accounts. It does this by adding multiple bank accounts into a single mobile application, allowing for seamless fund transfers and merchant payments from one place. It also enables 'peer to peer' and 'peer to merchant' collection requests, which can be scheduled and paid as requested. Payments can be made using a UPI ID, UPI Number, Account number, and an Indian

Financial System Code (IFSC). Payment security is as per applicable RBI guidelines using a 1-click 2-factor authentication where the second factor of authentication is the UPI PIN. UPI is also available through the Unstructured Supplementary Services Data (USSD) channel to enable UPI members to cater to users of feature phones.

Types of transactions supported by UPI

A. Financial transactions UPI supports the following financial transactions:

Pay Request:

A transaction where the initiating customer 'pushes' funds to the intended beneficiary. Payment address includes mobile number and MMID, account number with IFSC, and Virtual ID.

Collect Request:

- transaction where the customer is 'pulling' funds from the intended remitter by using a Virtual ID.
- Non-financial transactions UPI will support the following types of non-financial transactions on any PSP app.

Registration for mobile banking

- One Time Password (OTP) generation
- Set/change PIN
- Transaction status check
- Raising disputes/queries
- Mobile banking registration is only possible if the mobile number (which is to be registered) is already registered with the issuer bank for SMS /mobile alerts.
- UPI can be accessed on all major platforms such as Android and iOS with apps developed by members for versions of Android 4.2.2 and iOS 8.1 and above.

Business Uses

What are the business uses of UPI?

Universal uses

- UPI provides the following capabilities through a set of Application Programming Interfaces (APIs).

- Using a personal mobile as the primary device for all payments, including person to person, person to entity, and entity to person.

- Using a personal mobile to 'Pay' someone (push) as well as 'Collect' from someone (pull).

- Using a mobile number, card number, and account number in a unified way. In addition, the ability to pay and collect using 'UPI IDs' that are 'aliases' to the VPA.

- Making payments by providing an address without having to ever provide account details or credentials on third party applications or websites.

- Sending 'collect' requests to others (person to person or entity to person) with a 'pay by' date, which allows customers to pay at a later date without blocking the money in the account.

- Pre-authorizing multiple recurring payments (utilities, school fees, subscriptions, etc.) with a one-time secure authentication and rule-based access, similar to ECS.

- Enabling all PSPs to use a standard set of APIs for any-to-any push and pull payments.

- Using PSP bank's sponsored UPI applications, which enable payments from any account using a UPI ID by entering the UPI PIN.

- Using a fully interoperable system across all PSPs without having silos and closed systems.

- Making payments with one-click two-factor authentication, using a personal phone, and without any acquiring devices or physical tokens.

UPI Autopay

- UPI autopay allows customers to set recurring payments for their UPI transactions.
- Recurring payments up to INR 2,000 can be set at the frequency desired.
- A one-time authorization needs to be provided by the customer.

RuPay card

A first-of-its-kind global card payment network was developed by NPCI in India and enabled by UPI for wide acceptance at shops, ATMs, and online.

Bharat Interface for Money (BHIM) app

BHIM is a UPI enabled app that lets customers make simple payment transactions quickly and easily. Customers can make instant bank-to-bank payments, pay and collect money using just a mobile number or UPI ID, or scan and pay using a QR code.

UPI Lite

Based on current trends, it is estimated that a large percentage of future digital payment transactions will be of low-value transactions below Rs. 200. UPI Lite is a new customer-friendly pre-approved payment solution that utilizes existing protocols to enable these low value transactions without placing transaction traffic loads on core banking systems in real-time. Issuing banks can allocate a refillable 'on-device stored value' for their existing UPI app using customers who opt for UPI Lite. As per current mandates, a 'stored value' balance limit of Rs. 2,000 is available, which the customer can use for offline transactions below Rs. 200 and replenish as necessary from a UPI linked bank account.

a) For transactions and on-device store value refills, UPI PIN is required.

b) For UPI Lite services, customer opt-in consent is required.

c) Key features: Balance available on home screen

Top-up when prompted 1FA transactions (device biometric / pattern validation for transaction authentication to be provided)

Disable UPI Lite services (Residual balances are credited back to the customer)

Daily SMS notifications for UPI Lite transactions.

Bank enabled Pay Requests

A customer can make a pay request by 'pushing' funds to the beneficiary using their Account Number/IFS Code, Mobile Number/MMID, and UPI ID, which is also known as a Virtual Address.

Bank enabled Collect Requests

A customer can make a Collect Request transaction where the customer can 'pull' funds from the remitter by using their UPI ID, which is known as a Virtual Address. In case of Pull transactions, the customer will have the option to define the expiry time of the Collect Request (up to 45 days). In case the customer has not defined the expiry time, the default time of 30 minutes will apply. The Payment System Provider (PSP) has to provide a customer with the option of defining a minimum validity of 1 minute, in case the customer is selecting an expiry time.

UPI Intent based payments

For UPI Intent based transactions, UPI users have the flexibility to make payments at the time of online checkout by selecting from any of the UPI certified apps installed on their mobile phones. The customer can conveniently make payments without switching between applications. The moment a customer selects 'Pay by UPI' during the check-out stage on a merchant app, all the UPI apps linked to the embedded merchant app, or other UPI enabled apps that intend to initiate the payment, are displayed. The customer can then select a preferred UPI enabled app, which opens with the merchant's payment details. The customer will then need to authenticate with their UPI PIN to complete a secure transaction, or the payment will be declined

UPI 123 Pay

This service is designed to be more inclusive and reach over 400 million feature phone users in the country. The service uses an account number and phone number while leveraging Dual Tone Multi-Frequency (DTMF) signaling technology and follows the UPI two-factor authentication protocol for transactions.

UPI for ASBA (IPO)

Customers can provide their UPI ID as a payment option while subscribing to IPOs on the National Stock Exchange (NSE) and Bombay Stock Exchange (BSE). All they need to do is tell their brokers to provide their UPI ID as the payment option while making the IPO application. Customers can enjoy the instant fund transfer experience of UPI while subscribing to an IPO Instant mandate creation ensures real-time application submission Customer support for transaction-related issues

Business Benefits

What are the business benefits of UPI? Universal benefits Mobile-first customizable design Developed to embrace the smartphone boom in India and customers shifting to digital and mobile-based solutions, the mobile phone has been defined as the primary device for payment authorization. This transforms the acquiring infrastructure requirements to make them simple, low-cost, and universal. Push and pull payments for innovative use-cases Payments can be initiated by either the sender (payer) or the receiver (payee). For pay requests: the initiating customer 'pushes' funds to the intended beneficiary. For collect requests: the customer 'pulls' funds from the intended sender using the UPI ID.

User-friendly, single-click, two-factor authentication

UPI follows the one-click, two-factor authentication protocol. When a transfer transaction is initiated using a smart phone, the device fingerprint (IMEI number or other technical detail unique to the device) is passed as the first factor of authentication. The second factor is the UPI PIN number, which has to be physically keyed in by the user/ sender on their initiating device - usually a mobile phone.

Easily identified across payment options

The UPI ID creates a common identifier for the customer to send or receive money from anyone. It provides the user with a single, unified interface for all payment transactions, across all UPI linked accounts.

Interoperability from authentication to payment institutions

UPI allows for full interoperability between multiple identifiers such as a mobile number and new UPI ID across all UPI-based payment apps and the institutions that participate in the UPI ecosystem. It allows money to be transferred instantly across UPI linked bank accounts in the ecosystem.

Flexibility for Third Party/Merchant/Developer Based on the business requirements, UPI offers 3rd party/merchants/developers options ranging from simple integration options such as intent or web collect, to complex and detail oriented designs through SDK and API models.

Exponential innovation

UPI offers Application Programming Interfaces (APIs) that are minimalistic, fully functional, and allow for innovations in user interface, convenience features, authentication schemes, and mobile devices to be incorporated without having to change the core API structure Available on feature phones and voice-based payments UPI functionality enables feature phone and voice-based payments. In essence, a user does not need to have a smartphone and internet connectivity to make a UPI payment.

For Banks

- High-security high speed payment transactions
- Single-click, two-factor authentication
- Universal application for transactions
- Low cost by leveraging existing infrastructure
- Safer, secured and innovative
- Payment basis Single/ Unique Identifier
- Enables seamless merchant transactions

- Scalable collections and disbursements

For merchants

- Seamless fund collection from customers - single identifiers

- No risk of storing customer's virtual address like in cards

- Ability to accept payments from customers not having credit/debit cards

- Suitable for e-com and m-com transactions

- Resolves the challenges of exact change cash payments, cash

- security/portability, or Cash on Delivery issues

- Single-click 2FA facility for the customer - seamless Pull

- In-App Payments (IAP)

For customers

- Round-the-clock availability

- Single application for accessing different bank accounts.

- Conveniently make utility bill payments, over-the-counter (OTC) payments, and

- QR Code (Scan and Pay) payments.

- Make merchant payments with a single application or in-app payments

- Use of Virtual ID is more secure, no credential sharing

- Single-click authentication

- Ability to raise complaints from mobile apps directly

Support for non-financial transactions

- UPI also enables non-financial transactions such as:

- Mobile Banking Registration

- One Time Password (OTP) generation

- UPI PIN Set/Change

- UPI transaction status check

Participants

Who are the participants in the UPI ecosystem?

NPCI

NPCI is the owner, network operator, service provider, and coordinator of the UPI Network.

Banks

Banks and payment banks with an RBI-approved mobile banking license and IMPS capability are eligible for UPI. Banks or PPIs should broadly perform the functions/roles mentioned below:

Payer PSP - Member bank as a Payer PSP can on board a customer into a UPI app, allowing the customer to register for UPI services and provide options to approve a financial transaction or non-financial request wherever necessary.

Payee PSP - A bank in the role of Payee PSP can on board a customer/merchant to receive money or raise a collect request. This is also known as a beneficiary/resolving PSP.

Remitter Bank - All UPI users need to have a banking account with a UPI enabled bank. While performing a transaction, the user's bank account will be debited. The remitting bank also holds the responsibility of authenticating the UPI PIN set by the customer.

Beneficiary Bank - Any credit going to a UPI user will be credited to a beneficiary's bank account. The bank receiving the funds in UPI transactions will be acting as a beneficiary bank.

Bank Account holders / Customers

Any customer who is on-boarded by a bank with a UPI enabled account and a UPI ID

Merchants

Participating merchants are those who are on-boarded by their banks to accept UPI enabled payments from customers.

Corporates

UPI also provides the ability for large technology companies, 3rd party processors, and aggregators to connect to banks and provide extensive services to end consumers.

Roles and Responsibilities

NPCI

1) NPCI is the owner, network operator, service provider, and coordinator of the UPI Network.

2) NPCI reserves the right to either operate and maintain the UPI network on its own or provide or operate necessary services through third party service providers.

3) NPCI will provide and maintain the network infrastructure relevant to the operation of the UPI platform, maintain uptime, and ensure timely settlements to banks.

4) NPCI may revise the UPI architecture and its procedural guidelines as and when required.

5) NPCI has the right to call for documents relating to the architecture, operating model, and other technology related aspects of the UPI solution which the bank/PPI/PSP is planning to develop or has developed.

6) All certification stages will require sign-off from the concerned UPI team.

7) NPCI may notify PSP and TPAP of any problems encountered in the UPI platform, that are attributable to the telecommunication network, as well as any complaints received from customers from time to time.

8) NPCI issues circulars from time to time, to disclose major decisions, to relevant stakeholders, which all banks/PPIs/ PSPs will have to adhere to.

On-boarding

The Payment Service Provider/member should be a regulated entity by RBI under the Banking Regulations Act 1949, should be authorized by RBI for providing mobile banking service. The member should comply with the Procedural Guidelines, certification requirements operating and risk guidelines and circulars issued by NPCI from time to time. The bank should be live on IMPS. (PPI is not required to be part of IMPS) Additionally, any bank which intends to participate in UPI as a PSP, should ensure that while the bank's technology platform can be outsourced, its functions 'as a PSP' cannot be outsourced.

This implies that the PSP Bank has an equal ownership of other banks' customers' data as its own customer base. Furthermore, the PSP has to provide an audit report for the data center and PSP App by a CISA equivalent auditor. Qualified Security Assessors (QSAs) empaneled by the PCI Council will conduct audits at least once annually. The QSA will verify the app and the following:

- System level Security
- Network / Data Centre Security
- Risk tools to be adequate
- Procedures and Policies
- Annual Certification process

In addition, the member has to provide a declaration in writing to abide by:

i. All the terms and conditions of the Unified Payments Interface Procedural Guidelines and Circulars, notifications, and directions are issued by NPCI from time to time.

ii. All the guidelines issued by relevant authorities from time to time with respect to payment system operations.

User on-boarding in UPI:

Customers can be on-boarded onto UPI through the platforms mentioned below:

1) The BHIM Mobile Application
2) UPI Bank PSP Apps
3) Third Party UPI Compliant Apps
4) *99# (USSD)
5) Each bank's mobile banking apps that support UPI
6) 123Pay – Unified Payment Interface (UPI) for feature phone and voice-based payments

The tools listed above cover the complete gamut of mobile devices in India and also cover both the data base of customers connected to mobile data and customers not connected to mobile data.

De-boarding

Relevant documents need to be shared by the TPAP and the bank, as detailed below, for de-boarding from UPI

TPAP will share the set of confirmations and clearances for de-boarding as given below:

a. Request letter to the sponsor bank/ NPCI regarding their interest in de-boarding as an UPI TPAP, stating reasons or issues with certain timelines.

b. Request letter to the sponsor bank/ NPCI stating whether they would want to continue as a merchant app in the ecosystem.

c. Confirmation on dispute handling for 180 days even after de-boarding the TPAP on UPI payment for customer convenience. After the completion of 180 days, data will be purged and confirmation shall be provided to NPCI regarding no storage of payment data with the application system.

d. TPAP to confirm the data elements that will be available with them for customer dispute handling for the time period.

e. TPAP must notify their UPI users about the suspension of UPI services via push notifications/ email or SMS.

f. TPAP to confirm that only a new version of their app (which will not act as a TPAP) will be available on play store/ app store and the same will not have UPI CL in it.

From sponsor banks:

a. Request letter from sponsor banks stating the TPAP's request of de-boarding themselves as a TPAP.

b. Request letter from the sponsor bank stating whether the TPAP would want to continue as a merchant app in the ecosystem, if any.

Use Cases

How is the UPI service used?

Fulfilling a money request

Shom receives a notification on his phone. It is a message from a UPI ID asking him if he wishes to send Rs. 5000. He recognizes that the message is from his younger brother, who is studying in another city. After calling his brother and checking with him, Shom then uses his own UPI app to accept the fund request and authenticate the transaction with his M-PIN.

In a few seconds, he gets a successful transaction notification SMS on his phone from his bank. His brother calls to thank him for the instant fund transfer.

In-app payment within the same mobile of the customer.

Ashok' is a student who uses a personal My Star app video application to select, pay for and watch a movie for, Rs. 25 on his Android enabled phone. He banks with DiBank (the PSP in this case) and uses their UPI-enabled mobile application. The My Star application creates a UPI payment link with all the necessary parameters populated. As DiBank PSP app is registered for UPI link, it starts the app and takes Ashok straight to the pay screen with all the relevant values pre-populated. Ashok verifies the information shown on the screen and clicks 'pay' to complete the payment and enjoy the movie he selected.

DTH payment from home

'Nadeem' is a DTH subscriber who wishes to pay his on-demand subscription fee. He selects the channel and clicks 'Buy Now'. The DTH program shows the details along with a QR code for UPI payment. Nadeem opens the UPI application on his mobile and scans the QR code given on his TV screen, which takes him straight to the pay screen with all values pre-populated from the QR code, which contains the standard UPI link. Nadeem verifies the information on the pay screen and clicks 'pay' to complete the payment. He gets a confirmation on his mobile and the TV channel is automatically turned on for his viewing pleasure.

UPI Autopay

Reshma uses this capability to automatically pay her OTT content platform's monthly subscription fees of Rs. 500. She sets a UPI recurring mandate at 'check out' and provides the one-time UPI PIN in her app. Subsequent fee payments will be auto-deducted from the customer's linked bank account.

Credit card bill payment

Vaishanvi is clearing up around the house when she finds last month's credit card bill that she had forgotten to pay. Today is the last day for payments, and she realizes that she needs to pay the amount before she is charged interest. She uses her smartphone to open her UPI enabled app and clicks on the credit card payment option. She enters her card details and it auto-populates the amount she needs to pay. She is able to pay by using her secret M-PIN to authenticate the transaction.

Merchant payment using BHIM app

Saira wants to treat her best friend who is visiting her from the USA. Saira takes her friend to a trendy cafe where they proceed to order coffee and snacks. At the time of paying the bill, Saira realizes that her credit card has passed its validity date. So she smoothly takes

out her smartphone, accesses her UPI enabled BHIM app, and uses the scan to pay feature to pay the cafe bill.

Non-financial transaction - change UPI M-PIN

Ramakant wants to change his M-PIN for security purposes. He enters his old UPI PIN and preferred new UPI PIN (the UPI PIN that he would like to set) and clicks on Submit. After clicking on submit, Ramakant gets a notification of either a successful change of his M-PIN or a failure. In the event of failure, he will need to submit the request again.

Acts

Banking Regulations Act 1949 Payment and Settlement Systems Act, 2007 (PSS Act) Section 43A of IT Act, 2000 and the IT Rules, 2011 Section 25 of the Payment and Settlement Systems Act, 2007 (PSS Act)

RTGS stands for Real-Time Gross Settlement.

INTRODUCTION

RTGS stands for Real-Time Gross Settlement. It is a payment system that enables instantaneous and secure fund transfers between your bank account to the beneficiary account. It is widely used for high-value transactions due to its real-time processing and the system of processing transactions individually and not in batches.

- RTGS mode of payment can also be used for making your debit and credit card payments. One can either use the online mode or visit the bank branch to make RTGS transactions. This post discusses in detail about the RTGS process, charges and benefits.

What is the Use of RTGS?

RTGS is used in the transfer of very large amounts and on a real-time basis. It is used by retail as well as corporate account holders to transfer instantly. Therefore - it helps to get you the money instantly.

Features and Benefits of RTGS

Here are the primary features of RTGS (Real Time Gross Settlement):

- **Real - time settlement**: One of the key advantages of RTGS is that funds are transferred instantly, providing immediate availability of the funds to the recipient.
- **High Security:** RTGS transactions are highly secure as they are settled individually and in real-time, reducing the risk of fraud or interception.

- **No Intermediaries:** RTGS eliminates the need for intermediaries, ensuring direct and seamless transfers between banks and reducing delays and costs associated with intermediary banks.

- **High Transaction Limits:** RTGS is particularly suitable for high-value transactions as there is usually no upper limit on the amount that can be transferred. The minimum transaction in this mode is Rs. 2 lakhs.

- **Improved Cash Flow:** Businesses can benefit from RTGS by having better control over their cash flow, as payments are settled immediately

How to do RTGS Fund Transfers?

RTGS transfer can be done in two ways. They are online and offline mode. For online transfers, one can choose the option of online banking and mobile banking services of the respective bank.

Based on the mode that the user opts for, they will have to follow the steps that are mentioned here:

- **Through Online Banking**

Most banks offer RTGS facilities through their online banking portals, allowing customers to initiate transactions from the comfort of their homes or offices.

For this, the user will have to log in to the bank's online banking portal and will have to enter the RTGS amount and beneficiary details to authenticate the payment.

- **Through Mobile Banking**

Many banks provide mobile applications that allow RTGS transactions, enabling customers to transfer funds conveniently through their smartphones. Users can avail of this service by logging in to the mobile banking application of the respective bank.

- **Through Branch/Offline Mode**

Customers can also visit their bank branch to request an RTGS transaction, where the bank representatives will assist in processing the transfer. One will have to fill out the RTGS form and enter all the necessary details, such as the beneficiary's name, account number and transfer amount.

RTGS Charges

RBI has removed charges on the transfer of RTGS transactions that are initiated online. For offline mode of fund transfer, the charges levied on RTGS transactions may vary from one bank to another, depending on the transaction amount. Some banks may offer lower RTGS charges for premium account holders or specific customers.

Please note that the specific charges and transaction methods may vary depending on the banks offering the RTGS service. It is advisable to check with your respective bank for accurate and up-to-date information.

Limitations of RTGS

The RTGS transfers were constructed in the aspect of high-value transactions only. You will have to transfer only beyond the predetermined limit of the amount - that is, more than 2 lakh rupees.

It is a system used by banks to transfer funds from one bank to another on a real-time and gross basis. Here's a brief overview of how it works:

- **Real-Time:** Transactions are processed as they are received, without any delay.
- **Gross Settlement:** Transactions are settled individually (one-to-one) without bundling or netting with other transactions.

This system is used for high-value transactions that require immediate clearing and is typically employed by central banks to ensure the efficient and safe transfer of funds.

NEFT stands for National Electronic Funds Transfer:

INTRODUCTION

NEFT or National Electronic Fund Transfer is a traditional and cost-effective way of transferring money online from one bank account to another. The payment system is available round the clock all through 365 days. Let's get to know some of the features and benefits of NEFT online.

At present, we have various methods of transferring money online, such as UPI, digital wallets, and more. These payment solutions have grown exponentially in the recent past due to many reasons. But traditional electronic fund transfer options like NEFT is still the most preferred choice as it is a trusted source of payment among several users as it has safety protocols in place. Let's understand more about NEFT in detail.

What is NEFT?

The NEFT or National Electronic Funds Transfer is an electronic payment system that allows users to initiate direct one-to-one payment anywhere across the country. One can send money to the beneficiary only if he or she has a bank account with any branch in the country. You can also do NEFT using online modes like mobile banking and internet banking.

Features of NEFT:

Availability: In accordance with the RBI guidelines, the NEFT transfer facility is available round the clock

No transaction charges: No transaction charges are applicable if the payment is initiated through internet banking or mobile banking app like ICICI Bank iMobile Pay app

Minimum transaction limit: The minimum transaction limit is Rs.1, and the maximum transaction limit is Rs.10 to Rs.25 Lakh (based on customer segment) if you are doing it between 01.00 h? – 19.00 h? At ICICI Bank, if you are doing in 2nd & 4th Saturday, Sunday & RTGS Holidays, the maximum transfer of funds is Rs.2 lakhs

Nominal Charges: If you are doing the NEFT transaction by visiting the bank brand at ICICI Bank, the following nominal charges are applicable

Transaction charges	NEFT
Payment up to Rs.10,000	Rs. 2.25 + Applicable GST
Payment Above Rs. 10,000 and up to Rs. 1 lakh	Rs. 4.75 + Applicable GST
Payment Above Rs. 1 lakh and up to Rs. 2 Lakh	Rs. 14.75 + Applicable GST
Payment Above Rs. 2 lakhs and up to Rs. 10 lakh	Rs. 24.75 + Applicable GST

Benefits of NEFT:

Accessibility: NEFT online transfer can be accessed 24*7 through ICICI Bank Internet Banking and iMobile Pay App

Minimal Charges: This is the most cost-effective mode of online transfer of funds as you don't have to incur much transaction charges

Transfer Funds across India: Through ICICI Bank's NEFT, you can initiate fund transfer pan India with a large network of branches

Free Charges: ICICI Bank savings account customers do not have to face any charges for online NEFT transactions

Receive Confirmation: There is quick confirmation of the transaction to both parties via SMS

Easy Payments: You can use NEFT for payment of loan EMIs, credit card dues, among others

Here's how you can perform NEFT using the ICICI Bank's iMobile Pay - a UPI and Banking app:

Step 1: Download the iMobile Pay app & select your Login MPIN or Fingerprint

Step 2: Go to "Send Money", as mentioned on the dashboard.

Step 3: Click on the 'Add/Manage Payee' option and then select the beneficiary type "ICICI Bank Payee" or 'Other Bank Payee'

Step 4: Fill in the beneficiary account details, IFSC code and other details.

Step 6: Click on 'Add', then click on 'Confirm'

Step 7: Once successfully authenticated, the Payee is available for transactions and while sending money to the beneficiary, click on "NEFT" as the payment option

Summary

It is an electronic payment system used in India to facilitate the transfer of funds from one bank account to another. It operates on a deferred settlement basis, meaning that transactions are processed in batches and settled at specific times throughout the day. NEFT is widely used for transferring smaller amounts of money securely and efficiently

Immediate Payment Service:

"IMPS" typically refers to the Immediate Payment Service, which is an instant interbank electronic funds transfer service available in India. However, when discussing "IMPS" in the context of e-business, it generally relates to the integration of this payment system into online platforms.

Here's a brief overview:

IMPS in E-Business:

1. Instant Payments: IMPS allows businesses to receive payments instantly, which is crucial for e-commerce platforms. This speed is beneficial for cash flow and customer satisfaction.

2. 24/7 Availability: Unlike traditional banking systems, IMPS is available 24/7, including weekends and holidays, making it ideal for online businesses that operate beyond regular business hours.

3. Security: IMPS transactions are secure, as they require multiple authentication steps, reducing the risk of fraud. This is important for both businesses and customers.

4. Wide Reach: Since IMPS is linked with many banks in India, it allows businesses to cater to a large customer base, facilitating ease of payments from different banks.

5. Low Cost: IMPS typically has lower transaction fees compared to other payment methods, which can help reduce costs for businesses.

Integrating IMPS in E-Business:

1. Payment Gateway Integration: Businesses can integrate IMPS through their payment gateway, enabling customers to choose it as a payment option.

2. Mobile and Web Applications: E-businesses can incorporate IMPS in their mobile and web applications to offer a seamless payment experience.

3. API Integration: IMPS provides APIs that can be integrated into the business's system for automating and managing transactions.

4. Customer Convenience: By offering IMPS, businesses provide customers with a convenient, fast, and reliable payment method, improving the overall customer experience.

This service is particularly popular in countries like India, where mobile and online banking are widespread**.**

IMPS is an innovative real time payment service that is available round the clock. This service is offered by National Payments Corporation of India (NPCI) that empowers customers to transfer money instantly through banks and RBI authorized Prepaid **Payment Instrument Issuers (PPI) across India.**

Transferring funds real time and 24X7X365 interbank was a major challenge faced in banking industry. Only NEFT & RTGS were available to user for fund transfer during banking hours.

IMPS provides robust & real time fund transfer which offers an instant, 24X7, interbank electronic fund transfer service that could be accessed on multiple channels like Mobile, Internet, ATM, SMS, Branch and USSD (*99#). IMPS is an emphatic service which allow transferring of funds instantly within banks across India which is not only safe but also economical. Currently on IMPS, over 240 members are live which includes banks & PPIs. This facility is provided by NPCI through its existing NFS switch. The eligible criteria for the Banks who can participate in IMPS is that the entity should have valid banking or prepaid payment instrument license from Reserve Bank of India to participate in IMPS.

Objectives of IMPS

a) To enable bank customers to use mobile instruments as a channel for accessing their banks accounts and remit funds

b) Making payment simpler just with the mobile number of the beneficiary

c) To sub-serve the goal of Reserve Bank of India (RBI) in electrification of retail payments

d) To facilitate mobile payment systems already introduced in India with the Reserve Bank of India Mobile Payment Guidelines 2008 to be interoperable across banks and mobile operators in a safe and secured manner

e) To build the foundation for a full range of mobile based Banking services.

The participants for IMPS will be as follows:

a) Remitter (Sender)

b) Beneficiary (Receiver)

c) Banks

d) National Financial Switch - NPCI

Pre-Requisites for Mobile Banking through IMPS

Registration for IMPS:

Registration for Remitter:

- Register himself with the mobile banking service of the bank.

- Get Mobile Money Identifier (MMID) and MPIN from the bank

- Download Software (Application) for mobile banking or use the SMS facility in his mobile if his bank provides IMPS on SMS

Registration for Beneficiary:

- Link the mobile number to the account in the respective bank.

- Get Mobile Money Identifier (MMID) from the bank

For Remitter (To send money):

Login to the application and select the IMPS menu from the IMPS or use the SMS facility in your mobile if your bank provides IMPS on SMS Get Beneficiary Mobile number and MMID Enter Beneficiary Mobile number, beneficiary MMID, Amount and your MPIN to send Await confirmation SMS for the debit in your account and credit in beneficiary account Note the transaction reference number for any future query

For Beneficiary (To receive money):

Share your Mobile number and MMID with the remitter Ask the remitter to send money using your Mobile number and MMID Check the confirmation SMS for credit to your account from the remitter Note the transaction reference number for any future reference

Fund transfer/ Remittance:

Sender & Receiver should have registered for Mobile Banking with their respective Banks should have received a unique ID called "MMID" respectively. Generation MMID is a One-time process. MMID - Mobile Money Identifier is a 7-digit code. Each MMID is linked

to a unique Mobile Number. Different MMIDs can be linked to the same Mobile Number. Both sender & receiver get SMS confirmation

Funds can be transferred in the following modes:

1) Using Mobile number & MMID (P2P)
2) Using Account number & IFS Code (P2A)
3) Using Aadhar number (ABRS)

IMPS remittance using Mobile number & MMID (P2P)

IMPS offer an instant,24*7 interbank electronic fund transfer service capable of processing person to person, person to account and person to merchant remittances via mobile, internet and ATMs. It is a multichannel and multidimensional platform that make the payments possible within fraction of seconds with all the standards and integrity maintained for security required for even high worth transactions. Remitter (Sender) transfers funds to beneficiary (Receiver) by using Mobile no. & 7 **digit MMID of beneficiary.**

IMPS remittance using Account number & IFSC Code (P2A)

Presently, IMPS Person-to-Person (P2P) funds transfer requires the Remitter customer to make funds transfer using Beneficiary Mobile Number and MMID. Both Remitter as well as Beneficiary needs to register their mobile number with their respective bank account and get MMID, in order to send or receive funds using IMPS.

There may be cases where Remitter is enabled on Mobile Banking, but Beneficiary mobile number is not registered with any bank account. In such cases, Remitter shall not be able to send money to the Beneficiary using Mobile Number & MMID. Hence on the merit of the feedback received from the banking community as well as to cater the above mentioned need, the IMPS funds transfer has been made possible using Beneficiary account number and IFS code as well, in addition to Beneficiary mobile number and MMID.

IMPS remittance using Aadhar number (ABRS)

In ABRS, a remitter can initiate IMPS transaction using the beneficiary's AADHAAR umber, which acts as a financial address & which will be linked to the beneficiaries account number. ABRS facilitates in simplifying the IMPS payment initiation process as in this service the customer will have to input only the AADHAAR number of the beneficiary for initiating an IMPS transaction. Another important utility of this service will be in disbursal of subsidy payment i.e. Electronic Benefit Transfer (EBT)/ Direct Benefit transfer (DBT) by the Government. ABRS will act as a catalyst in expanding financial Inclusion reach.

Query Service on Aadhar Mapper (QSAM)

To facilitate the effective implementation of ABRS, a service, known as "Query Service on Aadhar Mapper" the customer will be able to know:

Whether his/her AADHAAR number is seeded/linked to any bank account number or not? If yes, then with which bank and when was it last updated?

KEY POINTS to Remember

For transactions initiated using Mobile, transactions will be authenticated using mobile number & MPIN. Mobile number + MPIN IMPS transactions can also be initiated from ATMs and Internet banking channels. Authentication will be done for remitting customers while using the ATM channel as follows:

Card + ATM PIN

Authentication will be done for remitting customers while using the Internet banking channel as follows:

User ID + Internet Banking Password/Transaction Password

Appropriate existing two-factor authentication method would be used for all the channels. The limit as prescribed by the bank for these channels would apply while transferring money using either of these channels.

While initiating an IMPS transaction using either ATM or Internet channel, mobile Banking registration for a remitting customer is not mandatory. Similarly, for customers receiving money using account number/IFSC, or using AADHAAR number, mobile Banking registration is not mandatory.

Some Clarifications on IMPS

The important benefits of IMPS are:

1. Instant
2. Available 24 x7 (functional even on holidays)
3. Safe and secure, easily accessible and cost effective
4. Channel Independent can be initiated from Mobile/ Internet / ATM channels
5. Debit & Credit Confirmation by SMS
6. Funds Transfer and Remittances

For using IMPS on mobile phones, a customer will have to register for mobile banking with his/her individual bank. However, for initiating IMPS using Bank branch, Internet banking and ATM channels, no prior Mobile banking registration is required.

Customers can link more than one account to the same mobile number. However, each A/C no. will have different MMID. The beneficiary customer need not register for IMPS, if

receiving money using bank account details or Aadhar Number. However, for receiving money using Mobile no. & MMID, Mobile registration is mandatory. Stop payment: IMPS is an immediate fund transfer service, after initiating the payment request payment cannot be stopped or cancelled.

If a customer changes his Mobile number, he needs to update the new mobile number with their bank. If a customer changes only the Telecom service provider and not the number, there is No need for re-registration. IMPS transactions can be sent and received 24X7, (round the clock), including on holidays.

E-Money

Introduction

The technological progress contributes to development of a new direction in the payments system, called the electronic payments system. This new system refers to all transactions which are conducted electronically. It is clear that the development of the electronic payment system is connected with the advancement of information technologies and the development of global economy characteristic. The process is not linear and uniform. Many factors have influenced the new electronic system features: level of development of one country, its openness to global market and integration of different markets of money and commodities, a country's capability of accepting new challenges that come with the technology, and lately, the importance of educational level of one country has been more often emphasized. The reality is that the traditional banking is changing and countries are facing challenges to accept new banking practices, such as electronic banking. Electronic money or E-money was introduced as a payment instrument more than 20 years ago. The dynamics of the use of e-money was much slower than expected in the beginning, primarily as a result of the expensive implementation, while at a later stage the introduction of complex regulations for an electronic money institution played an inhibitive role. That is why in this paper (after the definition of e-money, the analysis of e-money as an instrument and its introduction to the market) the main focal point is the process of regulation needed for new system implementation. There are beneficial experiences of the countries of the Euro-zone and also the countries from the region which help each country to discover and investigate new challenges in the domain of using e-money and implementation of new ways of banking. Having in mind that the digital era is yet to come, e-money will bring many discussions and issues in the near future. On the other hand, the presence of e-money gives rise to many debates about its influence on monetary policy, through its ability to replace the currency in circulation.

So far its influence has been insignificant. In order to develop an objective approach to the analysis of future interconnections between these processes, this paper analyses the influence of e-money on the monetary policy of central banks.

Definition of e-money

E-money is the newest instrument in the payment system, and according to one broader definition this is the money that is transferred electronically. But still, the definition of e-money is more complex and more precise, and it is a problem "to describe a dynamic phenomenon within a comparatively static framework". According to the European directive, e-money presents a monetary value, as represented by a claim on the issuer, which is stored on an electronic device, issued upon receipt of funds in an amount not less in value than the monetary value issued and accepted as a means of payment by undertaking other that the issuer. E-money is not printed money or a deposit. Payments are limited only to the sum which is stored on the electronic device. One of the main differences with the other payment instruments is that the issuer and the recipient of e-money are different, while in the case of other payment instruments they are the same (for example banks can issue credit cards and at the same time accept payments with such cards). An issuer of electronic money can be a bank (if it has a special permission to carry out this activity) or a special electronic money institution which is any legal person authorized to do so by a supervisor. Electronic money has the following specific characteristics too

- Lower transaction costs in comparison with other payment instruments. One of the reasons is that the institution does not need to keep cash in their ATMs, and the costs are lower because there is less data to be exchanged comparing with other payment instruments.

- Higher fixed costs in comparison with other payment instruments, as a result of using the inevitable modern IT. Modern technology must be permanently renewed and upgraded with the latest technological innovations. This feature of the technology is rooted in the major breakthroughs in implementing e-money in the developed countries.

- E-money has no value if not used for a transaction, while the other payment instruments can be used as a banking deposit.

- E-money is less transparent, while credit cards have the name and the number of the holder, for example.

- E-money can substitute the currency in circulation, but so far this influence has been very low. The process of transaction with e-money is different from the process of other payment instruments, regarding the specific characteristics of the e-money.

- Electronic money refers to the currency electronically stored on electronic systems and digital databases used to make it easier to transact electronically. It is popularly referred to by many names, including digital cash, digital currency, e-money, and so on.

- Fiat money, simply put, is a legal tender, whose value as a currency is established by an issuing government and consequently, is also regulated by it.

- Electronic money can be classified into two broad categories: hard and soft.

What is Fiat Currency (or Fiat Money)?

Fiat money, simply put, is a legal tender, whose value as a currency is established by an issuing government and consequently, is also regulated by it. Fiat money is the exact opposite of commodity money, whose value is based on an underlying asset, such as gold or silver.

Classifications of Electronic Money

Electronic money can be classified into two broad categories:

1. Hard

Hard electronic money is when e-money is used for irreversible transactions, ones that are highly securitized, and are more or less procedural in nature. They may include transactions that are drawn through a bank.

2. Soft

Soft electronic money is when e-money is used for reversible or flexible transactions. There is an increased level of flexibility offered, and users are allowed to manage their transactions even after payment is processed, like cancelling a transaction or modifying the payment price, etc.

The changes can be made post-transaction within a defined period. They may include transactions that are passed through payment mechanisms like PayPal, Paytm, Interac, credit cards, and so on.

Features of Electronic Money

Just like physical paper currency, electronic money also includes the following four features:

- **Store of value**: Just like physical currency, electronic money is also a store of value, the only difference being, that with electronic money, the value is stored electronically unless and until withdrawn physically.

- **Medium of exchange**: Electronic money is a medium of exchange, i.e., it is used to pay for the purchase of a good or when acquiring a service.

- **Unit of account**: Just like paper currency, electronic money provides a common measure of the value of the goods and/or services being transacted.

- **Standard of deferred payment**: Electronic money is used as a means of deferred payment, i.e., used for the tools of providing credit for repayment at a future date.

Advantages of Electronic Money

Electronic money offers several advantages for the global economy, including:

1. Increased flexibility and convenience

The use of electronic money brings increased flexibility and convenience to the table. Transactions can be entered into from anywhere in the world, at any given time, with one click of a button. It removes the hassle and tediousness involved with the physical delivery of payments.

2. Historical record

The usage of electronic money is becoming increasingly popular because it stores a digital historical record of each and every transaction made. It makes tracing back payments easier and also helps with making detailed expenditure reports, budgeting, and so on.

3. Prevents fraudulent activities

Since electronic money makes available a detailed historical record of each and every transaction made, it is very easy to keep track of transactions and trace them back through the economy. It increases security and helps prevent fraudulent activities and malpractices.

4. Instantaneous

The use of electronic money brings with it a kind of instantaneousness that has not been experienced before in the economy. Transactions can be completed in split seconds with the click of a button from virtually anywhere in the world. It eliminates problems of physical delivery of payments, including long queues, wait times, etc.

5. Increased security

The use of e-money also brings with it an increased sense of security. To prevent loss of personal information while transacting online, advanced security measures are implemented

like authentication and tokenization. Stringent verification measures are also employed to ensure the full authenticity of the transaction.

Disadvantages of Electronic Money

Electronic money comes with the following disadvantages:

1. Necessity of certain infrastructure

To use electronic money, the availability of certain infrastructure is necessary. It includes a computer, a laptop, or a smartphone, and a stable internet connection.

2. Possible security breaches/hacks

The internet always comes with the inevitability of possible security breaches and hacks. A hack can leak sensitive personal information and can lead to fraud and money laundering.

3. Online scams

Online scamming is also possible. All it takes for a scammer is to pretend to be from a certain organization or a bank, and consumers are easily convinced to give away their bank/card details. Despite the increased security and presence of authentication measures to counter online scams, they are still something to be looked after.

Different Systems of Electronic Money

Electronic Money includes four different systems namely:

1. Centralized Systems,
2. Decentralized Systems,
3. Mobile sub-systems/Digital Wallets
4. Offline Anonymous Systems.

1) Centralized Systems

Many systems—such as PayPal, eCash, Web Money, Payoneer, cashU, and Hub Culture's Ven will sell their electronic currency directly to the end user. Other systems only sell through third party digital currency exchangers. The M-Pesa system is used to transfer money through mobile phones in Africa, India, Afghanistan, and Eastern Europe. Some community currencies, like some local exchange trading systems (LETS) and the Community Exchange System, work with electronic transaction

2) Decentralized Systems

A cryptocurrency (or crypto currency) is a medium of exchange using cryptography to secure the transactions and to control the creation of new units. Cryptocurrencies are a subset of alternative currencies, or specifically of digital currencies. Bitcoin became the first decentralized cryptocurrency in 2009. Since then, numerous cryptocurrencies have been created. These are frequently called altcoins, as a blend of bitcoin alternative. Cryptocurrencies use decentralized control as opposed to centralized electronic money/centralized banking systems. The decentralized control is related to the use of bitcoin's block chain transaction database in the role of a distributed ledger. Decentralized cryptocurrency is produced by the entire cryptocurrency system collectively, at a rate which is defined when the system is created and which is publicly known. In centralized banking and economic systems such as the Federal Reserve System, corporate boards or governments control the supply of currency by printing units of fiat money or demanding additions to digital banking ledgers. However, companies or governments cannot produce units of cryptocurrency and as such, have not so far provided backing for other firms, banks or corporate entities which hold asset value measured in a decentralized cryptocurrency. The underlying technical system upon which decentralized cryptocurrencies are based was created by the group or individual known as Satoshi Nakamoto. As of March 2015, hundreds of cryptocurrency specifications exist; most are similar to and derived from the first fully implemented decentralized cryptocurrency, Bitcoin. Within cryptocurrency systems the safety, integrity and balance of ledgers is maintained by a community of mutually distrustful parties referred to as miners: members of the general public using their computers to help validate and timestamp transactions adding them to the ledger in accordance with a particular time stamping scheme. The security of cryptocurrency ledgers is based on the assumption that the majority of miners are honestly trying to maintain the ledger, having financial incentive to do so. Most cryptocurrencies are designed to gradually decrease production of currency, placing an ultimate cap on the total amount of currency that will ever be in circulation. This can mimic the scarcity (and value) of precious metals and avoid hyperinflation. Compared with ordinary currencies held by financial institutions or kept as cash on hand, cryptocurrencies are less susceptible to seizure by law enforcement. Existing cryptocurrencies are all pseudo-anonymous, though additions such as Zero coin and its distributed laundry feature have been suggested, which would allow for true anonymity Electronic Money includes some decentralized systems. They are:

- Bitcoin

- Monero

- Litecoin

- Ripple Monetary System

- Dogecoin

- Nxt

1) Bitcoin

Bitcoin is a digital asset and a payment system invented by Satoshi Nakamoto, who published the invention in 2008 and released it as open-source software in 2009. The system is peer-to-peer; users can transact directly without needing an intermediary. Transactions are verified by network nodes and recorded in a public distributed ledger called the block chain. The ledger uses bitcoin as its unit of account. The system works without a central repository or single administrator, which has led the U.S. Treasury to categorize bitcoin as a decentralized virtual currency. Bitcoin is often called the first cryptocurrency, although prior systems existed Bitcoin is more correctly described as the first decentralized digital currency. It is the largest of its kind in terms of total market value. Bitcoins are created as a reward for payment processing work in which users offer their computing power to verify and record payments into a public ledger. This activity is called mining and the miners are rewarded with transaction fees and newly created bitcoins. Besides being obtained by mining, bitcoins can be obtained in exchange for different currencies, products, and services. Users can send and receive bitcoins for an optional transaction fee. Bitcoin as a form of payment for products and services has grown, and merchants have an incentive to accept it because fees are lower than the 2–3% typically imposed by credit card processors. Unlike credit cards, any fees are paid by the purchaser, not the vendor. The European Banking Authority and other sources have warned that bitcoin users are not protected by refund rights or chargebacks. Despite a big increase in the number of merchants accepting bitcoin, the cryptocurrency doesn't have much momentum in retail transactions. The use of bitcoin by criminals has attracted the attention of financial regulators, legislative bodies, law enforcement, and media. Criminal activities are primarily centered on black markets and theft, though officials in countries such as the United States also recognize that bitcoin can provide legitimate financial services. Bitcoin has drawn the support of a few politicians, notably U.S. Presidential candidate Rand Paul, who accepts donations in bitcoin [xxxvii]. Bitcoins are not printed like fiat money, but instead are "mined" using computing power in a distributed global network of volunteer software developers. At its core,

Bitcoin is nothing more than a digital file that lists every transaction that has ever happened in the network in its version of a general ledger called the "block chain." Bitcoin is the first example of a growing category of money known as cryptocurrency in which open-source software solves complex mathematical calculations to mine more Bitcoins (Coin Desk 2013a). These "miners" make the Bitcoin network function by validating transactions and thereby creating new Bitcoins. This occurs when the Bitcoin network collects all the transactions made during a set period of time (usually every 10 minutes) into a list called a "block." Miners confirm these blocks of transactions and write them into the block chain by competing against each other to solve mathematical calculations. Every time a miner's system finds a solution that validates a block of transactions, that miner is awarded 25 Bitcoins (Coin Desk 2013b). Every four years, this reward is halved so that the total number of Bitcoins will never exceed 21 million. For a new user not interested in the mining process, the most popular way to obtain Bitcoins is through a traditional exchange where fiat currency is converted into Bitcoins and then stored in a Bitcoin wallet. Wallets come in many forms, including desktop access, mobile access, and online web-based access. Each has its own risks as both desktop and mobile access are susceptible to hackers, a hard drive crash, or a lost mobile device. Online access uses third parties that may also be hacked, cheat its users, or go bankrupt

2) Monero

Monero (XMR) is a cryptocurrency created in April 2014 that is focused on privacy, decentralization and scalability. Unlike many cryptocurrencies that are derivatives of Bitcoin, Monero is based on the Crypto Note protocol and possesses significant algorithmic differences relating to block chain obfuscation. Monero has ongoing support from the community, and its modular code architecture has been praised by Vladimir J. van der Laan, the Bitcoin Core maintainer. Monero currently carries a market capitalization of over $4 million. Monero was launched on 18 April 2014 originally under the name Bit Monero, which is a compound of Bit (as in Bitcoin) and Monero (literally meaning coin in Esperanto). Five days later the

community opted for the name to be shortened just to Monero. It was launched as the first fork of Crypto Note-based currency Byte coin, however was released with two major differences. Firstly, the target block time was decreased from 120 to 60 seconds, and secondly, the emission speed was decelerated by 50%. In addition, the Monero developers found numerous incidents of poor quality code that was subsequently cleaned and re-constituted. A few weeks after launch, an optimized GPU miner for Crypto Night proof-of-work function was developed On 4 September 2014, Moner recovered from an unusual and novel attack executed against the cryptocurrency network. Monero is an open-source pure proof-of-work cryptocurrency. It runs on Windows, Mac, Linux and FreeBSD. Its main emission curve will issue about 18.4 million coins to be mined in approximately 8 years. After that, a "tail emission" will create a sub-1% perpetual inflation to prevent the lack of incentives for miners once a currency is not mineable anymore. The emission uses a smoothly decreasing reward with no block halving (any block generates a bit less moneroj than the previous one). The proof-of-work algorithm, Crypto Night, is AES-intensive and "memory heavy", which significantly reduces the advantage of GPU over CPU

3) Litecoin

Litecoin is a peer-to-peer Internet currency that enables instant, near-zero cost payments to anyone in the world. Litecoin is an open source, global payment network that is fully decentralized without any central authorities. Mathematics secures the network and empowers individuals to control their own finances. Litecoin features faster transaction confirmation times and improved storage efficiency than the leading math-based currency. With substantial industry support, trade volume and liquidity, Litecoin is a proven medium of commerce complementary to Bitcoin. Litecoin was released via an open-source client on GitHub on October 7, 2011 by Charles Lee, a former Google employee. It was a fork of the Bitcoin-Qtd client, differing primarily by having a decreased block generation time, increased maximum number of coins, different hashing algorithm (script, instead of SHA-256), and a slightly

modified GUI. During the month of November 2013, the aggregate value of Litecoin experienced massive growth which included a 100% leap within 24 hours. Litecoin reached a $1 billion market cap in November 2013. As of August 2015, its market capitalization is US$181,542,352 with the price at $4 levels

4) Ripple Monetary System

Ripple is a real-time gross settlement system (RTGS), currency exchange and remittance network by Ripple. Also called the Ripple Transaction Protocol (RTXP) or Ripple protocol, it is built upon a distributed open source Internet protocol, consensus ledger and native currency called XRP (ripples). Released in 2012, Ripple purports to enable "secure, instant and nearly free global financial transactions of any size with no chargebacks." It supports tokens representing fiat currency, cryptocurrency, commodity or any other unit of value such as frequent flier miles or mobile minutes. At its core, Ripple is based around a shared, public database or ledger, [6] which uses a consensus process that allows for payments, exchanges and remittance in a distributed process. The security of the Ripple consensus algorithm was challenged by rivals in 2014, with Ripple defending the safety of the system. As of 2014, Ripple is the second-largest cryptocurrency by market capitalization, after bitcoin. Currently implemented by companies such as Fidor Bank, the Ripple protocol has been increasingly adopted by banks and payment networks as settlement infrastructure technology, with American Banker explaining that "from banks' perspective, distributed ledgers like the Ripple system have a number of advantages over cryptocurrencies like bitcoin," including price and security [xl]- An RTGS system is a gross settlement system of money or securities in which both processing and final settlement of funds transfer instructions can take place continuously (i.e., in real time). It will enable instant settlement of high value local currency transactions as well as government securities and foreign currency based transactions. As it is a gross settlement system, transfers are settled individually, i.e., without netting debits against credits. An RTGS system can thus be characterized as a fund transfer system that is able to provide continuous intraday finality for individual transfers. In RTGS or large-value funds transfer

system, the transmission and processing of payment messages are typically automated or electronic, while settlement takes place in central bank funds. Along with these individual interbank transactions all other Deferred Net Settlement Batches (DNSB) such as BACPS, BEFTN or NPSB will settle their net position through RTGS system, RTGS in turn will be linked to BB core banking solution. Bangladesh Bank has taken initiative to implement a project -"Institutional Support for Migrant Workers' Remittances; Real Time Gross Settlement (RTGS)" which has jointly funded by Asian Development Bank (ADB) and Government of Bangladesh (GoB). The project is expected to go live during July 2015

5) Dogecoin

Dogecoin (/ˈdoʊʒkɔɪn/ dohzh-koyn, code: DOGE, symbol: Ð and D) is a cryptocurrency featuring a likeness of the Shiba Inu dog from the "Doge" Internet meme as its logo. It was introduced on December 8, 2013. Started as a "joke currency" in late 2013, Dogecoin quickly developed its own online community and reache

6) Nxt

Nxt is a radically enhanced cryptocurrency built from scratch, delivering a unique and decentralized financial platform. Not only does it open up new possibilities – from digital money to transfer of shares – but it addresses all of the most serious deficiencies in existing cryptocurrencies. Nxt is an open source cryptocurrency and payment network launched in November 2013 by anonymous software developer BCNext. It uses proof-of-stake to reach consensus for transactions - as such there is a static money supply and, unlike bitcoin, no mining. Nxt was specifically conceived as a flexible platform around which to build applications and financial services. It has an integrated Asset Exchange (comparable to shares), messaging system and marketplace. Users can also create new currencies within the system. The last major release enabled Multi signature capabilities and a plugin-system for the client. Nxt has been covered extensively in the "Call for Evidence" report by ESMA, to which the Nxt community responded in July 2015. Just as with bitcoin, the block chain is at the core of

this currency. But Nxt is written completely from scratch and has departed in several ways from existing cryptocurrencies. Most notably, in one of his founding statements, BCNext asked the community not to consider the NXT coin as the important part, but rather to create currencies on top of it possibly devaluing the core currency with some unique features- Nxt is coded in Java, Nxt was the first currency to rely purely on proof-of-stake for consensus. Allowing a block creation rate of roughly one minute. The standard client works as a brain-wallet: Instead of storing keys in a wallet file, security works via a secret passphrase. This means it can be accessed from any instance of the Nxt software.

Mobile Sub-Systems/ Digital Wallet

A number of electronic money systems use contactless payment transfer in order to facilitate easy payment and give the payee more confidence in not letting go of their electronic wallet during the transaction. In 1994 Mondex and National Westminster Bank provided an 'electronic purse' or to residents of Swindon in about 2005 Telefonica and BBVA Bank launched a payment system in Spain called Mob pay which used simple short message service facilities of feature phones intended for pay-as you go services including taxis and pre-pay phone recharges via a BBVA current bank account debit. In Jan 2010, Venmo launched as a mobile payment system through SMS, which transformed into a social app were friends can pay each other for minor expenses like a cup of coffee, rent and paying your share of the restaurant bill when you forget your wallet. It is popular with college students, but has some security issues. It can be linked to your bank account, credit/debit card or have a loaded value to limit the amount of loss in case of a security breach. Credit cards and non-major debit cards incur a 3% processing fee. On September 19, 2011, Google Wallet was released in the US only, which makes it easy to carry all your credit/debit cards on your phone. In 2012 O2 (Ireland) (owned by Telefonica) launched Easy trip to pay road tolls which were charged to the mobile phone account or prepay credit. O2 (United Kingdom) invented O2 Wallet at about the same time. The wallet can be charged with regular bank accounts or cards and discharged by participating retailers using a technique known as 'money messages'. The service closed in 2014 On September 9th, 2014 Apple Pay was announced at the iPhone 6 event. In October 2014 it was released as an update to work on iPhone 6 and Apple Watch. It is very similar to Google Wallet, but for Apple devices only. GNU Taller is an anonymous, open source electronic payment system currently (September 2015) in development. BKasH is the leading payment system in Bangladesh

Offline Anonymous Systems

Offline Anonymous System can be done 'offline'. In this electronic money system, the merchants do not need to have interaction with banks before receiving currency from the users. Instead of The merchants can collect spent money by users and deposit the money later to the bank. A merchant can deliver his storage media in a bank for exchanging the electronic money to cash.

Law

Since 2001, the European Union has implemented a directive "on the taking up, pursuit and prudential supervision of the business of electronic money institutions" last amended in 2009. Doubts on the real nature of EU electronic money have arisen, since calls have been made in connection with the 2007 EU Payment Services Directive in favor of merging payment institutions and electronic money institutions. Such a merger could mean that electronic money is of the same nature as bank money or scriptural money. In the United States, electronic money is governed by Article 4A of the Uniform Commercial Code for wholesale transactions and the Electronic Fund Transfer Act for consumer transactions. Provider's responsibility and consumer's liability are regulated under Regulation E. Bangladesh Bank has issued directives to the banks for starting e-Commerce activities among the country. BB has permitted transfer fund up to TK. 5,00,000 from one clients account to another clients account lying in the same bank using internet/online facilities subject to the fact that it will fully comply with prevailing Money Laundering Prevention legislations and related circulars. PSD is concerned to ensure IT security for online and e-commerce transactions. In order to that PSD

has mandated for the banks to introduce Two Factor Authentication (2FA) for card not present transactions valuing Tk, 5000 and above. In order to start M-Commerce in Bangladesh, mobile network operators have been given permission to sell railway tickets and tickets of cricket matches organized by the Bangladesh Cricket Board (BCB) using mobile technology. Three Telcos have got permission for m-Commerce related transactions.

Payment system of E-Money

The payment system of E-money is an international terminal network. The terminals allow the customer to pay and to fulfil transactions concerning a variety of different service

providers, with minimal effort and a fraction of the time it would otherwise take. The System contains the following elements, that fulfil the concerning function.

Operator/Network Provider - The network provider is responsible for the maintenance and coordination within the system. The operator represents that system, along with all participants. It also offers information and technical support for all participants of this system.

Distributor - To ensure everything runs as smoothly and correctly as possible, every provider will be sent a personal manager to help set up and coordinate the Terminal through every stage for easy use. With help of an "Admin Module", every distributor has the facility to administer all the potential options that their sub-network offers in a very comfortable and easy fashion. The money transport organization – is responsible to collect cash from the Terminals.

Future of the E-Money - Since today we're in the middle of an unprecedented social and technological experiment: moving our entire economy out of metal and paper and into the 'net. I've already had to explain to my four-year old what newspapers are; I imagine he'll have a similarly experience when his children ask why people once carried funny pieces of paper around in their wallet. Between credit and debit cards, EFT, online banking and NFC, it seems like the days of cash are numbered. Unfortunately, all is not sunshine and roses. The combination of easy-to-search electronic records and big data seems like a death-knell for our individual privacy. Cryptography holds the promise to get some of that privacy back, if we want it. Right now in its mainstream incarnation, it takes the form of little plastic cards that we carry around in our wallets. If we live in a developed nation and aren't too particular about tipping valets, we can pretty much survive without ever touching hard currency. The problem is that credit and debit cards are not cash. They're very good for money transfers, but they have two specific limitations: first, they require you to access an online payment network. This means that they lose their usefulness at exactly the moment when you need them most: typically, after a disaster has wiped out or severely limited your connectivity (e.g., most hurricanes in Florida, NYC the morning after 9/11, etc.). Secondly, funds transfer systems offer none of the privacy advantages of real cash. This is probably by (government) preference: untraceable cash lends itself to unsavory activities, stuff like drug dealing, arms purchase and tax evasion. Our modern banking system doesn't necessarily stop these activities, but it's a godsend for law enforcement: just about every transaction can be traced down to the $0.01. Credit for the invention of true, privacy-preserving electronic cash generally goes to David Chaum. Chaum proposed his ideas in a series of papers throughout the 1980s, then made a fortune providing the world with untraceable electronic cash. Like many e-cash systems since, Chaum's earliest paper on the e-cash proposed to use digital 'coins', each of some fixed

denomination (say, $1). A coin was simply a unique serial number, generated by the holder and digitally signed using a private key known only to the bank. When a user 'spends' a coin, the merchant can verify the signature and 'deposit' the coin with the bank -- which will reject any coin that's already been spent. To address this, Chaum replaced the signing process with a novel blind signature protocol. Blind signature is exactly what it sounds like: a way for the bank to sign a message without actually. Seeing it. Using this technology, the user could make up a serial number and not tell the bank; the blind signature protocol would provide the necessary signature. Even if the bank was trying to track the coins, it wouldn't be able to link them to the user. Chaum even provided a nice real-world analogy for his idea: place a document inside of an element along with a sheet of carbon paper, then let the bank sign the outside of the envelope, conveying the signature through and onto the document.

Digital signatures do one thing very well: they prevent unauthorized users from issuing their own coins. Unfortunately, they don't prevent a second serious problem: users who copy legitimate coins. Copying is where electronic cash really differs from its physical equivalent. Real money is hard to copy -- by design. If it wasn't, we wouldn't use it. When people get too clever at copying it, we even send men with guns to shut them down. Electronic coins are very different. It's almost impossible to work with data without copying it; from long-term storage to RAM, from RAM to the processor cache, from one computer to another over a network. Electronic coins must be copied, and this fundamentally changes the nature of the problem. The bogeyman here is 'double spending', where a user tries to spend the same valid coin with many different merchants. Left unchecked, double-sending does more than screw over a merchant. It can totally debase the currency supply, making coins almost impossible for merchants to trust. Chaum's original solution dealt with double-spenders by requiring the bank to be online, so users could immediately deposit their coins -- and make sure they were fresh. This works great, but it's damn hard to handle in a system that works offline, i.e., without a live network connection. Indeed, offline spending is the big problem that most e-cash solutions have tried to tackle. There are two basic solutions to the offline problem. Neither is perfect. They are: Use trusted hardware: Force users to store their coins inside of some piece of bank-trusted (and tamper-resistant) piece of hardware such as a cryptographic smartcard. The hardware can enforce correct behavior, and prevent users from learning the actual coin values. Revoke double-spenders' anonymity. Alternatively, it's possible to build e-cash systems that retain the users' anonymity when they participate honestly, but immediately revokes their anonymity when they cheat (i.e., double-spend the same coin). In fact, it's enough dough that it would justify some serious investment in hardware reverse-engineering, which makes it hard

to find cost-effective hardware that's sufficient to handle the threat. Finding the owner of the coin isn't much of a deterrent either -- most likely we'll just find some guy in Illinois who had his wallet stolen. That doesn't mean these approaches are useless: in fact, they're very useful in certain circumstances, particularly if used in combination with an online bank. Moreover, the problem of revealing a user's identity (on double-spend) is an interesting one. There are several schemes that do this, including one by Chaum, Fiat and Naor, and a later (very elegant) scheme by Stefan Brands. There have been quite a few developments over the past few years, but none are as dramatic as the original schemes. Still, they're pretty cool. One scheme that deserves a few words is the 'Compact e-Cash' system of Camenisch, Hohenberger and Lysyanskaya. This system is nice because users can store millions of e-coins in a relatively small format, but also because it uses lots of neat crypto - including signatures with efficient protocols and zero-knowledge proofs. At a very high level, when a user withdraws n coins from the bank in this system, the bank provides the user with a digital signature on the following values: the user's public key, the number of coins' n withdrawn, and a secret seed value seed that's generated cooperatively by the bank and the user. The bank learns the number of coins and user's public key, but only the user learns seed. To spend the coin in the wallet, the user generates a 'serial number' $SN = F(seed, i)$, where F is some pseudo-random function. The user also provides a non-interactive zero-knowledge proof that (a) $0 < i < n$, (b) SN is correctly formed, and (c) she has a signature on seed from the bank (among other things). This zero-knowledge proof is a beautiful thing, because it does not leak any information beyond these statements, and can't even be linked back to the user's key in the event that she loses it. The online bank records each serial number it sees, ensuring that no coin will ever be spent twice. This may seem pretty complicated, but the basic lesson is that we can do lots of neat things with these technologies. We can even build coins that can be spent k times for some arbitrary k, only revealing your identity if they're used more times than that; this turns out to be useful anonymous login applications, where users want to access a resource a fixed number of times, but don't want anyone counting their accesses. Unfortunately, we haven't managed to build any of this stuff and deploy it in a practical setting.

Findings & Recommendations

E-Money is the latest IT based concept to make transactions much easier and faster than ever before. E-Money reduces overall cost of operation drastically compare to Paper Money E-Money is more secure than fiat money. E-Money is more environment friendly as there is no need of paper and no paper means no cutting down trees. As the technology is new, there are

some security and stability concern about "E-Money" which are controllable in most of the case. There should be some legal guidelines and law about e-money to prevent money laundering and other unethical uses of e-money. Banks and Financial Institutes and Government should come forward and work along with the Tech-Giants such as Google, Apple, Microsoft, Facebook etc. to develop the revolutionary but secured and stable transaction system using "E-Money."

Conclusion

Classically it is said that money acts as a unit of account, a store of value, and a medium of exchange. In this verge of Information Technology, everyone and everything is being affected by this magic and money or the form of money cannot escape this evolution. I am lucky that I have got the chance to work on this research paper which explains this "E-Money" under the wise supervision of my mentor and supervisor. Like all other technological advancements and enhancements "E-money" also has some pitfall and if our scientists, researchers and IT people can manage them in distant future we will see a new and more effective and efficient form of transactions which will open the door to a brand new world.

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