**CHRISTIAN EMINENT COLLEGE, INDORE**
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# E-Content

## On

# "Digital Marketing"

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**Prepared By: Prof. Himanshu Dehariya**

*Department of Computer Science & Electronics*

## UNIT-I

## *Digital Marketing*

- ✓ Digital marketing (also known as data-driven marketing) is an umbrella term for the marketing of products or services using digital technologies, mainly on the Internet, but also including mobile phones, display advertising, and any other digital medium.
- ✓ Advertising mediums that might be used as part of the digital marketing strategy of a business could include promotional efforts made via the Internet, social media, mobile phones and electronic billboards, as well as via digital and television and radio channels.
- ✓ Digital marketing, the promotion of products or brands via one or more forms of electronic media, differs from traditional marketing in that it uses channels and methods that enable an organization to analyze marketing campaigns and understand what is working and what isn't, typically in real time.

**Why Digital Marketing Is Important**

Digital media is so vast that consumers have access to information any time and any place they want it. Gone are the days when the messages people got about your products or services came from you and consisted of only what you wanted them to know. Digital media is an ever-growing source of entertainment, news, shopping and social interaction, and consumers are now exposed not just to what your company says about your brand, but what the media, friends, relatives, peers, etc., are saying as well. And they are more likely to believe them than you. People want brands they can trust, companies that know them, communications that are personalized and relevant, and offers tailored to their needs and preferences.

**Challenges Facing Digital Marketers**

- ✓ **Spreading of digital channels-** Consumers use multiple digital channels and a variety of devices that use different protocols, specifications and interfaces and they interact with those devices in different ways and for different purposes.
- ✓ **Intensifying competition**. Digital channels are relatively cheap, compared with traditional media, making them within reach of practically every business of every size. As a result, it's becoming a lot harder to capture consumers' attention.
- ✓ **Exploding data volumes.** Consumers leave behind a huge trail of data in digital channels. It's extremely difficult to get a handle on all that data, as well as find the right data within exploding data volumes that can help you make the right decisions.

**Three Keys to Digital Marketing Success**

- ✓ Manage complex customer relationships across a variety of channels, both digital and traditional.
- ✓ Respond to and initiate dynamic customer interactions.
- ✓ Extract value from big data to make better decisions faster.

## *Types of Digital Marketing*

**1) Search Engine Optimization (SEO)**
It is used to increase the website's visibility across the search engines. There are various techniques involved in this process ranging from on-site technical analysis and improvement, to blogging, link-building and content creation. SEO is a type of marketing which main goal is to get you to rank higher up in Google searches.

Search engines decide which websites to show for a search term based on keywords mentioned on the website and links that refer to this website. That means SEO has a lot to do with using the right keywords or key phrases in the copy of a website or within the content you want to show in search and getting links to this website or content.

By understanding how search engines rank websites, one can optimize a website to maximize its chances of ranking well for relevant searches. However, search engine algorithms continue to change, making it essential for online businesses to stay up-to-date with best practices to claim high rankings for relevant keywords.

**2) Pay Per Click Advertising (PPC)**
When people refer to pay per click advertising, they are likely talking about the 'sponsored' links you often see in Google searches; however they may also be referring to ads in other search engines too, like Yahoo or Bing. When you stop paying, the ad ceases to exist.

The 'sponsored' links you'll see in many search engine results. They'll usually have a note somewhere to let you know they are sponsored. They can also be picture ads featuring on other websites.

PPC advertising describes marketing methods where the marketer pays for each click on a link to a website. Apart from search engines, almost all social networks offer the opportunity for Pay per Click advertising. These ads then appear in the feed of the targeted social media users.

**3) Social Media Marketing**

Social media marketing is a great way to get exposure and connect with your customers. Talking with your customers directly is a great way to get them to know, like and trust you, **which is ultimately the best way to make a sale**.

Social media marketing covers everything that you might do to drum up business on your social media channels like Facebook, Twitter, Snapchat, LinkedIn, Instagram etc. It is all about managing a brand's image across multiple social channels .This type has become greatly popular, mature and complex over the last few years.

Social Media Marketing is the use of social media platforms and websites to promote a product or service.
That means all sharing of information and engagement with followers, fans, partners or competitors on social media platforms with the goal of promoting your products is part of digital marketing.

**4) Content Marketing**

Content marketing is a method of digital marketing that uses good content that your customers want to read to encourage new sales and leads online. It can be content anywhere – from YouTube to podcasts, tweets to infographs – but most often its blog content on your website, driving new traffic through search engines like SEO.

Content marketing is the art of using storytelling and valuable information to increase brand awareness with the goal of getting your target audience to take a profitable action. Content marketing aims at building relationships with potential customers and becoming a partner rather than an advertiser.

Since Content Marketing strongly relies on content distribution, content marketing can rarely be seen totally separated from other types of digital marketing that can fill the content distribution part.

**5) Affiliate Marketing**

Affiliate marketing is where you sit back and relax and let someone else do the marketing for you. The only catch is, if they bring in a sale, you share the profits. Affiliate marketing is where you recruit 'affiliates' for your business, and they draw in leads. Affiliates are like sales people that you pay on commission. The commission is determined entirely by you; some organisations offer a percentage of the sale made, others offer a flat rate per product.

Affiliate marketing is a performance-based type of digital marketing. Affiliate marketing is popular with bloggers and high-traffic website owners who make money from selling other people's products to their audience.

Affiliate marketing is the process of earning a commission by promoting other people's (or company's) products. You find a product you like, promote it to others (usually through your blog), and earn a piece of the profit for each sale that you make.

**6) Viral Marketing**

Viral marketing is amazing – if you can get some content of yours to go viral, it could turn your business into an overnight success.

Viral marketing is when you do something either incredibly weird, hilarious or "on trend" in a current popular topic, which gets you noticed and shared a lot. It usually causes a big spike in traffic to your website over a short period of time.

Generally, it always involves publicizing an element of content across multiple channels. It may include videos on YouTube, blogs, email marketing, as well as some traditional elements, all with goal to assure that the content grabs the attention of the market and spreads naturally through online communities. This type of marketing deals with publishing element of content on other websites by using multiple media channels.

**7) Text Messaging**

It is the widely used Digital marketing type. Especially, with the exponential rise in usage of smart phones around the world has enhanced the dependency on them for quick and timely information.

**8) Email Marketing**

Email marketing is the most effective and efficient type of digital marketing. Email marketing designed and developed has the unparalleled reach to potential customers.

Email marketing includes newsletter and subscription content with attracting and inviting offers which influence the customer to make the purchase of particular product or service.

## *Advantages of Digital Marketing*

- ✓ **Optimize for conversion:** The ability to track a customer's journey beginning at the first click allows you to test and optimize your website for conversion on an ongoing basis.

- ✓ **Analyze and adapt easily:** Because digital marketing provides real, timely data, you can observe and adapt to trends and the actions that real people are taking.

- ✓ **Become more competitive:** Digital marketing is how businesses are working now, and will continue to work in the future. If your business is not already in the digital marketing game, then you're behind. Ensure your business is competitive by employing a smart digital marketing strategy.

- ✓ **Global Reach:** Since digital marketing takes place online, it is accessible to a larger, global audience. Digital marketing allows you to reach international audiences through effective means.

- ✓ **Easy to optimize:** Since digital marketing comes with reporting, if you see something that is not performing as well as you'd like, it's easy to pinpoint it and change it. You can even try several different things, measure which one worked best, and select that option as the main tactic moving forward.

- ✓ **Lower cost:** A properly planned and effectively targeted digital marketing campaign can reach the right customers at a much lower cost than traditional marketing methods.

- ✓ **Trackable, measurable results: Track customers from the first interaction and throughout the entire buyer's journey. M**easuring your online marketing with web analytics and other online metric tools makes it easier to establish how effective your campaign has been. You can obtain detailed information about how customers use your website or respond to your advertising.

- ✓ **Personalisation:** If your customer database is linked to your website, then whenever someone visits the site, you can greet them with targeted offers. The more they buy from you, the more you can refine your customer profile and market effectively to them.

- ✓ **Openness**: by getting involved with social media and managing it carefully, you can build customer loyalty and create a reputation for being easy to engage with.

- ✓ **Improved conversion rates** - if you have a website, then your customers are only ever a few clicks away from completing a purchase. Unlike other media which require people to get up and make a phone call, or go to a shop, digital marketing can be seamless and immediate.

- ✓ **Cost-efficient:** You can easily plan a successful online marketing strategy within your budget by the use of digital marketing that offers an inexpensive technique in comparison to other advertising channels such as radio, TV and more.

- ✓ **Better exposure:** Reach numerous prospects by switching to a digital marketing campaign within a small investment. Be found where your audiences are looking for you. You will notice long term results by using digital marketing.

- ✓ **Save Time:** Digital marketing provides real time results within no time. Digital marketing gives you an opportunity to see the number of visitors to your site, what is the conversion rate, what is the peak trading time, how many subscribers have added you in a day and more.

- ✓ **Brand Building:** Brand building is what every business tries to accomplish and digital marketing helps develop your brand by promoting it on several platforms, the more viral your brand goes, the more reputation your brand will earn in the eyes of search engines as well as users.

## *Digital Media*

Digital media refers to audio, video, and photo content that have been encoded (digitally compressed). Encoding content involves converting audio and video input into a digital media file such as a Windows Media file. After digital media is encoded, it can be easily manipulated, distributed, and played by computers, and is easily transmitted over computer networks.
Examples of digital media types include: Windows Media Audio (WMA), Windows Media Video (WMV), MP3, JPEG, and AVI etc. Other examples of new or expanding digital media include: Interactive web pages, Video games, MP3 players, eBooks, Digital television etc.
Digital media can be defined as communication that exists in a format computer can read, but that doesn't really tell the story of how it has become integrated into our lives. Digital media includes any format or device used to convey content using digital signals. Simply, when you talk on your cell phone, read this Internet article, or watch a television show, you are using digital media.

## *Digital Media vs. Traditional Media*

Your business relies on a variety of marketing and advertising methods to reach potential customers and leads. Over time, the marketing methods you use have likely evolved, changed, or even been retired and replaced with new ones.

As marketing continues to evolve, new methods typically referred to as "new media" have emerged. These methods are mostly said to deliver better results than the methods known by the name "traditional media" (or even "old media").

Let's examine the traditional media vs. new media argument to help you decide exactly which methods will help get your business the highest ROI and the most leads.

**Traditional media** methods include mostly non-digital advertising and marketing methods, such as Television Advertisements, Radio Advertising, Print Advertising, Direct Mail Advertisements, Billboards and Off-Site Signs, Cold Calling, Door-to-Door Sales, Banner Ads etc

**New media,** also called digital media, consists of methods that are mostly online, such as Search Engine Optimization, Pay-per-Click Advertising, Content Marketing, Social Media Marketing, Email Marketing, Text Messaging etc.

As the needs and expectations of consumers evolve, marketing has no choice but to evolve as well. This is what has led to the rise of new media and digital marketing methods—and the decrease in popularity of some of the traditional methods.

Within the last few years, new terms have been coined to discuss traditional marketing methods and modern ones. These terms are **outbound marketing**, which typically lines up with traditional advertising, and **inbound marketing**, which aligns with new media.

The "outbound" in outbound marketing refers to the fact that these marketing methods rely on messages being sent out to consumers. On the other hand, the "inbound" in inbound marketing refers to marketing where consumers are seeking out the company, or coming into their marketing channels willingly.

If you've found great success with traditional media, you're probably concerned by the idea of abandoning them for new media even if these new methods promise better results. So the question becomes "which methods are truly worth keeping, and which new methods should we invest in?"

## *Difference between Digital Media and Traditional Media*

| Traditional Marketing | Digital Marketing |
|---|---|
| Marketers can easily reach their target local audience. | Not only target local audience can be reached, but also the audience from all around the globe. |
| Traditional marketing has a more personal approach since marketers can have a person-to-person relationship in informing the public about their brand's name. | Since it can reach a global audience, getting more popular is easy. There is no need to be physically present in introducing the brand's name to the audience. |
| The public can have a hard copy of materials of which they can read or browse through over and over again. | The public can also have access on different content on websites and videos on YouTube or video sharing websites. |
| It can be easily understood by the public because they are already exposed to this kind of strategy. It is something that most people can have access on. | Strategies implemented can reach target market with Internet connection. Most target audience is groups of people who have digital devices and are always online 24/7. |
| There is only a little interaction between the medium used and the customers. It is more of providing information to the public that the brand exists with the hope of these people patronizing the brand. | Interaction is very possible especially with the use of social media networks. Marketers take advantage of the convenience of communicating with their target audience aiming to get positive customer feedback. |
| Print or radio advertisements can be very costly. Printing materials can be expensive and you need to hire people to distribute these. Businesses have the need to invest money for this marketing strategy. | Digital marketing is cost-efficient. The use of social media websites is free of charge. Though some invest on paid ads online, the cost is still cheaper if you compare to traditional marketing. |
| Results on this marketing strategy cannot easily be measured. Marketers need to conduct survey and finding a statistician to interpret results is a must. | Data and results are easily recorded. With Google Analytics, specialists can easily check if the strategies are working. |
| With traditional marketing, communication was very one sided when it came to the presentation of the product | With digital individuals are able to interact with the seller, leave comments and address issues with the click of a button |

## *Digital Marketing Strategy*

Here is a list of five simple digital marketing strategies that any business owner can implement to help their business grow.

1. **Setting a Goal:** Digital marketing is a great way for small businesses to prosper, but going into the process blindly can leave you with a jumbled mess. A lot of strategy and precision goes into digital marketing and having a goal helps you know what to focus on.

2. **Creating a Marketing Funnel:** The most successful businesses have an effective marketing funnel in place. A marketing funnel is when you map out a customer's journey from when a customer is a complete stranger to when they become a lead, and then put certain strategies in place that will encourage them to move through this funnel. You can think of a marketing funnel in four parts:

- **Awareness:** At this stage you want to attract the customer by showing them that you have something they're looking for. Use a lead magnet or call-to-action to give the customer a valuable resource related to your product or service in exchange for more information about them like their email address, phone number, profession and current needs. Find out who they are and why they came to your website.
- **Interest:** At this stage it's a good idea to supply them with further information that is more tailored to their specific needs. Showing them that you not only took the time to get to know them, but also have something that's specific to their needs will show that you're attentive to and care about your customer's wants and needs.
- **Desire:** At this stage you want to tell them more about the product or service they're interested in. Show them why they need it and exactly how it will benefit them.
- **Action:** Taking the next step towards purchasing. This is when you're able to turn your potential customer into a lead. All that's left is discussing things like price, payment and other aspects of your product or service that are relevant to a buyer.

3. **Developing a call-to-action:** A call-to-action (CTA) is an image or text that prompts visitors to take action, such as subscribe to a newsletter, view a webinar or request a product demo. CTAs should direct people to landing pages, where you can collect visitors' contact information in exchange for a valuable marketing offer. In that sense, an effective CTA results in more leads and conversions for your website. In order to increase visitor-to-lead conversion opportunities, you need to create a lot of calls-to-action, distribute them across your web presence and optimize them.

4. **Creating an Effective Lead Magnet:** A lead magnet can be used alone or along with a CTA. The idea behind a lead magnet is to trade information. You supply something like a free download of a white paper, but in order to complete the download the individual has to fill out a form that will provide you with more information about them. You'll use the information you gather to interact with them more as they progress through your funnel.

5. **Driving Traffic:** In order for there to be people to drive into your marketing funnel, there first has to be traffic on your website. There a variety of ways you can drive traffic to your website. Here are a few of them:

- **Quality Content:** Use content such as blog posts, press releases and articles on authority websites. Insert links to various places on your website within this content to build your brand name through exposure and drive traffic to your website.
- **Keyword Strategy:** Inserting related keywords into content will help your content and website show up in more search results, this leads to higher volumes of web traffic.
- **Website Optimization:** Ensuring that your website is optimized and functioning at its best is essential. People don't want to visit a website that doesn't work properly.
- **Social Media:** Use engaging social media posts to attract more traffic to your site. Using pictures, video, and other relevant media will help your posts get more engagement.

## *Types of Websites for Digital Marketing*

1. **Affiliate Website:** A web site typically few in pages, whose purpose is to sell third party product. The seller receiving the commission for facilitating the sale.

2. **Search engine Website:** A site that provides general information and is intended as a gateway for retrieving other sites. Google, Yahoo and MSN are the most widely known search engines. It delivers searches related to any query entered by a user on search engine website. By using special algorithms and technology, it gives the most appropriately related site links for the user to find the content they need to know.

3. **E-Commerce Website:** These sites are designed for purchasing or selling goods, such as Amazon.com, CSN Stores, and Overstock.com. E-commerce websites are online markets for any product you want to buy online. You can choose a variety of products of any kind from different ranges. You get the variety in products, good deals to buy, easy selection and safe transactions doing commerce on the web. Some examples of e-commerce websites are Amazon, Ebay, Flipkart, and many more.

4. **Corporate Website:** used to provide information regarding business, organization, or service.

5. **Company Website:** Most company web sites have just a few pages of information on the business, its services and clients. These are more like "online brochures". Any company or any organization has its own online presence with a company website. It offers various products and services that are showcased on the website so that web users can know about it. For example, a company creating some goods, with the use of company website, put down the various locations of the shops and dealers for the products, featured on the website.

6. **Blog:** Sites generally used to post online diaries, comments or views that may include discussion forums. Some bloggers are professionals they are paid to blog about certain subject or product and they are usually found in news site.

## UNIT-II

**Introduction to HTML**

The name *HTML* stands for *Hypertext Markup Language.* The term's hypertext portion refers to the cross-links, also called hyperlinks, between Web pages. The term's markup language portion refers to the commands that format the Web pages that the users see. Virtually every Web page that you've ever visited has two things in common:

- ✓ They contain formatted text and graphic images.
- ✓ They are created, in whole or in part, using the HTML language.

The HTML language consists solely of unformatted text. That text, however, contains instructions, called *tags* or *command tags that* define exactly how formatted text and graphics appear on Internet Web pages. In other words, HTML determines how a Web page browser displays the information your HTML-based Web pages produce.

**What is HTML?**

- ✓ HTML is a language for describing web pages.
- ✓ HTML stands for Hyper Text Markup Language
- ✓ HTML is not a programming language; it is a markup language. A markup language is a set of markup tags
- ✓ HTML uses markup tags to describe web pages

---

**<html> and </html>Tag (Beginning and Ending)**

Every Web page should begin with the HTML start tag: <html>&should end with the following HTML end tag: </html>. For example

```
<html>
   Roses are red,
  The Web is sure growing.
  You can use HTML to keep your page flowing.
</html>
```

All HTML tags are enclosed between angled brackets. The <html> and </html> tags indicate the very beginning and ending of a Web page. The *end tag* contains the same command name as the start tag except it begins with a forward slash to distinguish where the tag pair begins and ends.

---

**<head> and <title>tag**

The title tag must appear inside a special section of your Web page called the *header section.* Before adding the title's tags, you must first create the header section with the <head> and </head> command tags. Start these tags immediately after the opening <html> tag. For example

```
<html>
 <head>
 <title>Poem to make you feel good</title>
 </head>
      Roses are red, The Web is sure growing.
     You can use HTML, To keep your page flowing.
 </html>
```

The value that you type between the title tags becomes the actual title you want the Web browser to display in the browser window's title bar.

---

**<body> and </body>tag**

The <body> element defines the body of the HTML document. The element has a start tag <body> and an end tag </body>. The attribute bgcolor is used to change the background color of the webpage. Example

```
<html>
<head>
<title>My Web page</title>
</head>
  <body  bgcolor="red">
       Roses are red, The Web is sure growing.
 </body>
</html>
```

**<BR> tag**

Use the *break tag* to break lines. The format of the tag is as follows: <br>*Text that appears on its own line.*

The <br> tag is special because, unlike so many other command tags, <br> has no corresponding end tag. The <br> tag is a stand-alone tag because it requests that the browser move down to the next line on the screen before displaying the text that follows. Example-

```
<body>
   <br>Roses are red,
   <br>The Web is sure growing.
   <br>You can use HTML,
   <br>To keep your page flowing.
</body>
```

---

**HTML Headings**

HTML headings are defined with the <h1> to <h6> tags. Headings are important. Use HTML headings for headings only. Don't use headings to make text BIG or bold. Search engines use your headings to index the structure and content of your web pages. H1 headings should be used as main headings, followed by H2 headings, then the less important H3 headings, and so on. Example:

```
<h1>hello</h1>
<h2>hello</h2>
<h3>hello</h3>
<h4>hello</h4>
<h5>hello</h5>
<h6>hello</h6>
```

---

**HTML Paragraphs**

HTML paragraphs are defined with the <p> tag. Example:

```
<p>this is my first paragraph writing</p>
```

---

**HTML Attributes**

HTML elements (tags) can have attributes**.** Attributes provide additional information about an element. Attributes are always specified in the start tag**.** Attributes come in name/value pairs like: **name="value".** For example HTML links are defined with the <a> tag. The link address is specified in the href attribute:

```
<a href="http://www.gurukpo.com">This is a link</a>
```

---

**HTML Comments**

Comments can be inserted into the HTML code to make it more readable and understandable. Comments are ignored by the browser and are not displayed. Example

```
<! -- This is a comment -->
```

---

**HTML Formatting tags**

HTML Formatting Tags like <b> and <i> for formatting output, like bold or *italic* text. These HTML tags are called formatting tags (look at the table below)

| Tag | Description |
|---|---|
| <b> | Defines bold text |
| <i> | Defines italic text |
| <u> | Defines underlined text |
| <small> | Defines small text |

| | |
|---|---|
|  | Defines strong text |
| <sub> | Defines subscript text |
| <sup> | Defines superscript text |

**HTML Hyperlinks - <a> tag**

A hyperlink (or link) is a word, group of words, or image that you can click on to jump to a new document or a new section within the current document. When you move the cursor over a link in a Web page, the arrow will turn into a little hand. Links are specified in HTML using the **<a> tag**. The **<a> tag** can be used in two ways:

1. To create a link to another document, by using the **href attribute**
2. To create a bookmark inside a document, by using the **name attribute**

**Syntax:** <a href="*url*">*Link text*</a>

```
<html>
<head>
<title>linking </title>
</head>
   <body>
      <a href=”abc.html”> CLICK HERE </a>
   </body>
</html>
```

---

**HTML Images - <img> tag**

In HTML, images are defined with the <img> tag. The <img> tag is empty, which means that it contains attributes only, and has no closing tag. To display an image on a page, you need to use the **src attribute**. **Src** stands for **"source".** The value of the src attribute is the URL of the image you want to display.

**Syntax:** <img src="*url*" alt="*some_text*"/>

The URL points to the location where the image is stored. The required **alt attribute** specifies an **“alternate text”** for an image, if the image cannot be displayed.

```
<html>
<head>
<title>linking </title>
</head>
   <body>
      <img src=”C:\Documents and Settings\All Users\Documents\My Pictures\Sample Pictures\Sunset.jpg” alt=”NO”/>
   </body>
</html>
```

**<marquee> </marquee> tag**

The HTML <marquee> tag is used for scrolling piece of text or image displayed either horizontally across or vertically down your web site page depending on the settings.

The **direction attribute** is used to scroll the text up, down, left or right accordingly.

Ex:

```
<html>
<body>
<marquee direction="up"><b><i>CHRISTIAN EMINENT COLLEGE,
INDORE</i></b></marquee>
<marquee direction="down"><b><i>CHRISTIAN EMINENT COLLEGE,
INDORE</i></b></marquee>
<marquee direction="left"><b><i>CHRISTIAN EMINENT COLLEGE,
INDORE</i></b></marquee>
<marquee direction="right"><b><i>CHRISTIAN EMINENT COLLEGE,
INDORE</i></b></marquee>
</body>
</html>
```

**HTML Tables**

Tables are defined with the <table> tag. A table is divided into rows (with the <tr> tag), and each row is divided into data cells (with the <td> tag). td stands for "table data," and holds the content of a data cell. A <td> tag can contain text, links, images, lists, forms, other tables, etc.

```
<table border="1">
  <tr>
    <td>row 1, cell 1</td>
    <td>row 1, cell 2</td>
  </tr>
  <tr>
    <td>row 2, cell 1</td>
    <td>row 2, cell 2</td>
  </tr>
 </table>
```

| | |
|---|---|
| row 1, cell 1 | row 1, cell 2 |
| row 2, cell 1 | row 2, cell 2 |

**Border Attribute**

If you do not specify a border attribute, the table will be displayed without borders. Sometimes this can be useful, but most of the time, we want the borders to show. To display a table with borders, specify the border attribute.

**Table Headers**

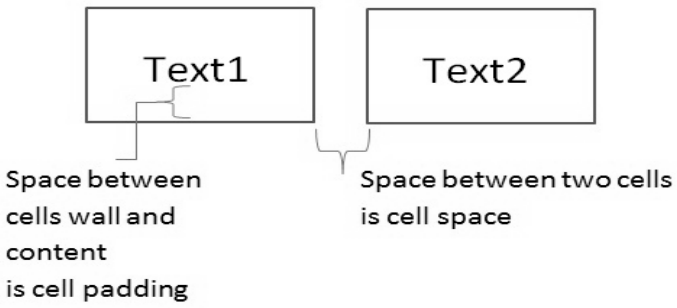
Header information in a table are defined with the <th> tag. All major browsers will display the text in the <th> element as bold and centered.

```
<table border="1">
  <tr>
    <th>Header 1</th>
    <th>Header 2</th>
  </tr>
  <tr>
    <td>row 1, cell 1</td>
    <td>row 1, cell 2</td>
  </tr>
  <tr>
    <td>row 2, cell 1</td>
    <td>row 2, cell 2</td>
  </tr>
</table>
```

| Header 1 | Header 2 |
|---|---|
| row 1, cell 1 | row 1, cell 2 |
| row 2, cell 1 | row 2, cell 2 |

**Cellpadding:** The cellpadding tag is used to create space between the text inside your table & border surrounding that text.

**Cellspacing:** The cellspacing tag is to create space between different cells within your table.




**Colspan:** The colspan attribute tells the browser to create a cell that spans more than one column. Cells with a colspan larger than 1 will be wider than standard cells and cross over column boundaries. There will be no border in the middle of the columns of a cell set to span multiple columns. When

you set the colspan on a cell, you need to remove the cells in that row that the spanning cell is taking over. For example, if you are setting the colspan to 2, then you'll need to remove 1 cell from the row:

**Rowspan:** The rowspan attribute acts in exactly the same way as colspan, only instead of spanning the columns in a table, the cell will span 2 or more rows in the table.

```
<html>
<body>
<table border="2">
<tr><th colspan="4">SUBJECT</th></tr>
<tr>
<th rowspan="3">MARKS 1</th>
<td>111</td>
<td>222</td>
<td>333</td>
</tr>
<tr>
<td>444</td>
<td>555</td>
<td>666</td>
</tr>
<tr>
<td>443</td>
<td>545</td>
<td>676</td>
</tr>
<tr>
<th rowspan="2">MARKS 2</th>
<td>777</td>
<td>888</td>
<td>999</td>
</tr>
<tr>
<td>464</td>
<td>575</td>
<td>668</td>
```

| SUBJECT | | | |
|---|---|---|---|
| MARKS 1 | 111 | 222 | 333 |
| | 444 | 555 | 666 |
| | 443 | 545 | 676 |
| MARKS 2 | 777 | 888 | 999 |
| | 464 | 575 | 668 |

```
</tr>
</table>
</body>
</html>
```

---

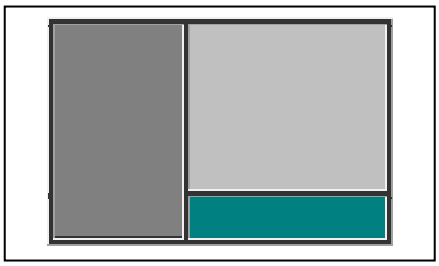
**<frame> and </frameset> tag**

Frames can divide the screen into separate windows. Each of these windows can contain an HTML document. A file that specifies how the screen is divided into frames is called a frameset. If you want to make homepage that uses frames you should:

- Make an HTML document with the frameset
- Make the normal HTML documents that should be loaded into each of these frames.

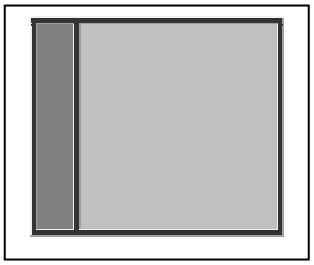
When a frameset page is loaded, the browser automatically loads each of the pages associated with the frames. A frameset is simply an HTML document that tells the browser how to divide the screen into split windows.

```
<html>
<head>
<title>My Frames Page</title>
</head>
<frameset cols="120,*">
<frame src="menupage.html" name="menu">
<frameset rows="*,50">
<frame src="welcomepage.html" name="main">
<frame src="bottombanner.html" name="bottom">
</frameset>
</frameset>
</html>
```



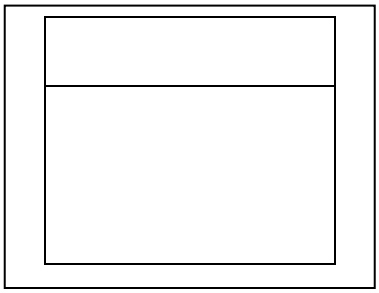
If the frameset looked like this:
The code would be:

```
<frameset cols="120,*">
</frameset>
```

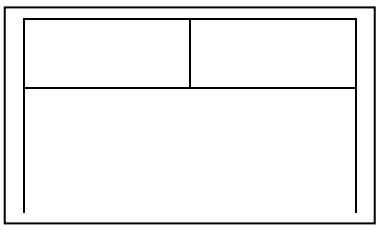


The screen is divided into two columns. The left being 120 pixels and the right using the rest of the screen (indicated by the *).

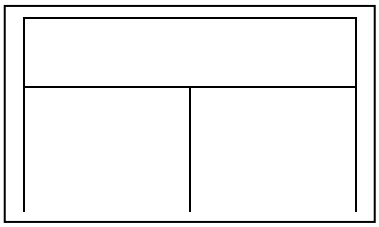
```
<frameset rows="30%,70%">
<frame src="f.html" name="top">
<frame src="f1.html" name="bottom">
</frameset>
```



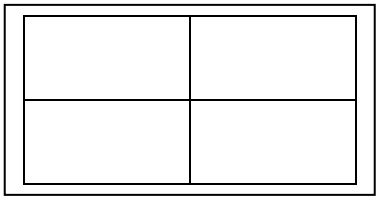
```
<frameset rows="40%,60%">
<frameset cols="50%,50%">
<frame src="f1.html" name="tl">
<frame src="f.html" name="tr">
</frameset>
<frame src="f1.html" name="bottom">
</frameset>
```



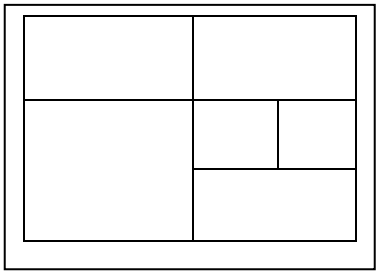
```
<frameset rows="20%, 80%">
<frame src="f.html" name="top">
<frameset cols="50%, 50%">
<frame src="f1.html" name="left">
<frame src="f.html" name="right">
</frameset>
</frameset>
```



```
<frameset rows="50%,50%" cols="50%,50%">
<frame src="f.html" name="topleft">
<frame src="f1.html" name="topright">
<frame src="f.html" name="botleft">
<frame src="f1.html" name="botright">
</frameset>
```



```
<frameset rows="50%,50%" cols="50%,50%">
<frame src="f.html" name="topleft">
<frame src="f1.html" name="topright">
<frame src="f.html" name="botleft">
<frameset rows="50%,50%">
<frameset cols="50%,50%">
<frame src="f1.html" name="brtl">
<frame src="f.html" name="brtr">
</frameset>
<frame src="f.html" name="botrbot">
</frameset>
</frameset>
```



---

**Unordered Lists**

An unordered list starts with the <ul> tag. Each list item starts with the <li> tag. The list items are marked with bullets (typically small black circles). Type attributes changes the style of list.

**Ordered Lists**

An ordered list starts with the <ol> tag. Each list item starts with the <li> tag. The list items are marked with numbers.

| Unordered Lists | Ordered Lists |
|---|---|
| <html><br><head><br><title>Unordered List </title><br></head><br><body><br><h2>All About Computer</h2><br>Popular operating systems<br><ul type="disc"><br><li>Windows 98</li><br><li>Windows XP</li> | <html><br><head><br><title> Ordered List </title><br></head><br><body><br><h4>This is a List</h4><br><ol type="A"><br><li>First</li><br><li>Second</li><br><li>Third</li> |

```
  <li>Unix</li>
</ul>
Subjects on computer science
<ul type="circle">
  <li>Operating system</li>
  <li>Computer Network</li>
  <li>Database management Systems</li>
  </ul>
Popular Web browsers
<ul type="square">
  <li>Intenet Explorer</li>
  <li>Mozilla Firefox</li>
  <li>Netscape Navigator</li>
</ul>
</body>
</html>
```

```
    <li>Forth</li>
    <li> and so on</li>
</ol>
<h4>The list is starting from 5</h4>
<ol start="5">
   <li>Ice cream</li>
   <li>Mango</li>
   <li>Juice</li>
   <li>Pop Corn</li>
<ol>
</body>
</html>
```

** and  tag**

The HTML  tag is used for defining a section of your document. With the div tag, you can group large sections of HTML elements together. The difference between the div tag and the span tag is that the div tag is used with block-level elements whilst the span tag is used with inline elements.

Example:

```
<html>
<head>
<title>Division Demo</title>
<body  bgcolor="yellow">
<div id="first" align="right" style="background-color:red; color:white"><b>Good
Evening</b></div>
<div id="second" align="center"  style="background-color:white; color:red"><b> Good
Morning</b></div>
<div id="third" align="left" style="background-color:green; color:yellow"><b> Good
Afternoon</b></div>
<div id="fourth" align="center" style="background-color:blue; color:white"><b> Good
Day</b></div>
</body>
</html>
```

---

**<meta> tag**

- ✓ HTML uses metadata that is additional important information about a document in a variety of ways. The META elements can be used to include name/value pairs describing properties of the HTML document, such as author, expiry date, a list of keywords, document author etc.
- ✓ The **<meta>** tag is used to provide such additional information. This tag is an empty element and so does not have a closing tag but it carries information within its attributes.
- ✓ You can include one or more meta tags in your document based on what information you want to keep in your document but in general, meta tags do not impact physical appearance of the document so from appearance point of view, it does not matter if you include them or not.
- ✓ You can add metadata to your web pages by placing <meta> tags inside the header of the document which is represented by **<head>** and **</head>** tags. A meta tag can have following attributes in addition to core attributes:

| Attribute | Description |
|---|---|
| Name | Name for the property. Can be anything. Examples include, keywords, description, author, revised, generator etc. |
| content | Specifies the property's value. |
| scheme | Specifies a scheme to interpret the property's value (as declared in the content attribute). |
| http-equiv | Used for http response message headers. For example http-equiv can be used to refresh the page or to set a cookie. Values include content-type, expires, refresh and set-cookie. |

**Specifying Keywords**

You can use <meta> tag to specify important keywords related to the document and later these keywords are used by the search engines while indexing your webpage for searching purpose.

```
<html>
<head>
<title>Meta Tags Example</title>
<meta name="keywords" content="HTML, Meta Tags, Metadata" />
</head>
  <body>
    <p>Hello HTML5!</p>
  </body>
</html>
```

**HTML Forms**

HTML forms are used to pass data to a server. A form can contain input elements like text fields, checkboxes, radio-buttons, submit buttons and more. A form can also contain select lists, textarea, fieldset, legend, and label elements. The <form> tag is used to create an HTML form:

```
<form>
… input elements …
</form>
```

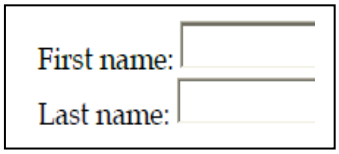
**The Input Element**

The most important form element is the input element. The input element is used to select user information. An input element can vary in many ways, depending on the type attribute. An input element can be of type text field, checkbox, password, radio button, submit button, and more. The most used input types are described below.

**Text Fields**

<input type="text" /> defines a one-line input field that a user can enter text into

Ex.
```
<form>
    First name:<input type="text" name='firstname'><br/>
    Last name:<input type="text" name='lastname'><br/>
</form>
```

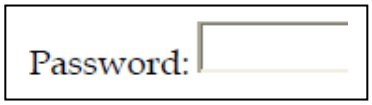



**Note:** The form itself is not visible. Also note that the default width of a text field is 20 characters.

**Password Field**

<input type="password" /> defines a password field:

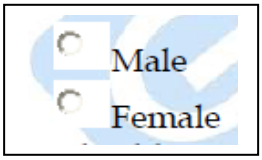
Ex.
```
<form>
    <input type="password" name="pass"/>
</form>
```




**Radio Buttons**

<input type="radio" /> defines a radio button. By this user select ONLY ONE of a limited number of choices:

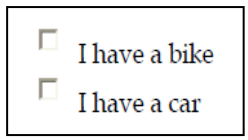
Ex.
```
<form>
    <input type="radio" name="sex" value="male" /> Male<br />
    <input type="radio" name="sex" value="female" /> Female
</form>
```



**Checkboxes**

<input type="checkbox" /> defines a checkbox. Checkboxes let a user select ONE or MORE options of a limited number of choices.

Ex.
```
<form>
  <input type="checkbox" name="vehicle" value="Bike" /> I have a bike<br />
  <input type="checkbox" name="vehicle" value="Car" /> I have a car
</form>
```




**Submit Button**

<input type="submit" /> defines a submit button. A submit button is used to send form data to a server. The data is sent to the page specified in the form's action attribute. The file defined in the action attribute usually does something with the received input:

Ex.
```
<form name="input" action="html_form_action.asp" method="get">
    Username: <input type="text" name="user" />
    <input type="submit" value="Submit" />
</form>
```

If you type some characters in the text field above, and click the "Submit" button, the browser will send your input to a page called "html_form_action.asp". The page will show you the received input.

## UNIT-III

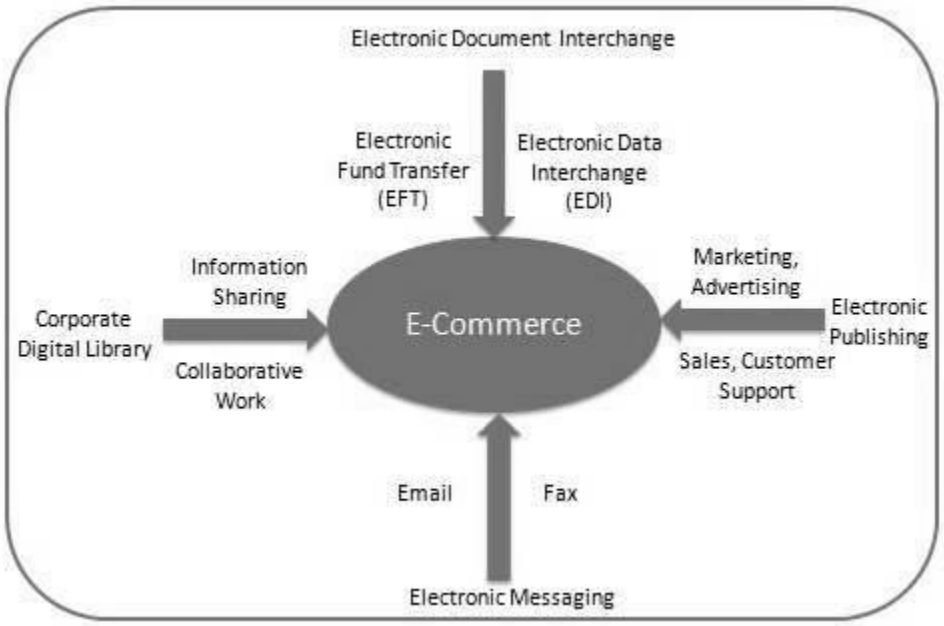
### *E-Commerce Technologies*

E-Commerce or Electronics Commerce is a methodology of modern business which addresses the need of business organizations, vendors and customers to reduce cost and improve the quality of goods and services while increasing the speed of delivery.

Electronic commerce or ecommerce is a term for any type of business, or commercial transaction that involves the transfer of information across the Internet. It covers a range of different types of businesses, from consumer based retail sites, through auction or music sites, to business exchanges trading goods and services between corporations.

E-commerce refers to paperless exchange of business information using following ways.

- Electronic Data Interchange (EDI)
- Electronic Mail (e-mail)
- Electronic Bulletin Boards
- Electronic Fund Transfer (EFT)
- Other Network-based technologies



## *Features of E-Commerce*

- ✓ **Non-Cash Payment:** E-Commerce enables use of credit cards, debit cards, smart cards, electronic fund transfer via bank's website and other modes of electronics payment.
- ✓ **24x7 Service availability:** E-commerce automates business of enterprises and services provided by them to customers are available anytime, anywhere.
- ✓ **Advertising / Marketing:** E-commerce increases the reach of advertising of products and services of businesses. It helps in better marketing management of products / services.
- ✓ **Improved Sales:** Using E-Commerce, orders for the products can be generated anytime, anywhere without any human intervention. By this way, dependencies to buy a product reduce at large and sales increases.
- ✓ **Support:** E-Commerce provides various ways to provide pre sales and post sales assistance to provide better services to customers.
- ✓ **Inventory Management:** Using E-Commerce, inventory management of products becomes automated. Reports get generated instantly when required. Product inventory management becomes very efficient and easy to maintain.
- ✓ **Communication improvement:** E-Commerce provides ways for faster, efficient, reliable communication with customers and partners.

## *Difference between Traditional Commerce & E-Commerce*

| Sr. No. | Traditional Commerce | E-Commerce |
|---|---|---|
| 1 | Heavy dependency on information exchange from person to person. | Information sharing is made easy via electronic communication channels making little dependency on person to person information exchange. |
| 2 | Communication/ transaction are done in synchronous way. Manual intervention is required for each communication or transaction. | Communication or transaction can be done in asynchronous way. Electronics system automatically handles when to pass communication to required person or do the transactions. |
| 3 | It is difficult to establish and maintain standard practices in traditional commerce. | A uniform strategy can be easily established and maintain in e-commerce. |
| 4 | Communications of business depends upon individual skills. | In e-Commerce or Electronic Market, there is no human intervention. |
| 5 | Unavailability of a uniform platform as traditional commerce depends heavily on personal communication. | E-Commerce website provides user a platform where al l information is available at one place. |

| | | |
|---|---|---|
| 6 | No uniform platform for information sharing as it depends heavily on personal communication. | E-Commerce provides a universal platform to support commercial / business activities across the globe. |

## *Advantages of E-Commerce*

**Advantages to Organizations**

- Organization can expand their market globally with minimum capital investment.
- E-Commerce helps organization to reduce the cost by digitizing the information.
- E-commerce improves the brand image of the company.
- E-commerce helps organization to provide better customer services.
- E-Commerce helps to simplify the business processes and make them faster and efficient.
- E-Commerce reduces paper work a lot.
- E-Commerce increased the productivity of the organization.

**Advantages to Customers**

- 24x7 supports.
- E-Commerce application provides user more options and quicker delivery of products.
- E-Commerce application provides user more options to compare & select cheaper & better option.
- A customer can see review of others & put comments about a product before making a final buy.
- E-Commerce provides option of virtual auctions.
- Readily available information.
- It increases competition among the organizations and as result organizations grows rapidly.

**Advantages to Society**

- Customers need not to travel to shop a product thus less traffic on road and low air pollution.
- E-Commerce helps reducing cost of products so less affluent people can also afford the products.
- E-Commerce has enabled access to services and products to rural areas
- E-Commerce helps government to deliver public services like health care, education, social services at reduced cost and in improved way.

## *Disadvantages of E-Commerce*

**Technical Disadvantages**

- There can be lack of system security, reliability or standards if poorly implemented.
- Software development industry is still evolving and keeps changing rapidly.
- In many countries, network bandwidth might cause an issue.
- Special types of web server or other software might be required by the vendor.
- Sometimes, it becomes difficult to integrate E-Commerce software or website with the existing application or databases.

**Non-Technical Disadvantages**

- Initial cost: The cost of creating / building E-Commerce application in-house may be very high.
- User resistance: User may not trust the site being unknown faceless seller.
- Security/ Privacy: Difficult to ensure security or privacy on online transactions.
- Lack of touch or feel of products during online shopping.
- E-Commerce applications are still evolving and changing rapidly.
- Internet access is still inconvenient for many potential customers, like one living in remote area.

## *Types of E-Commerce*

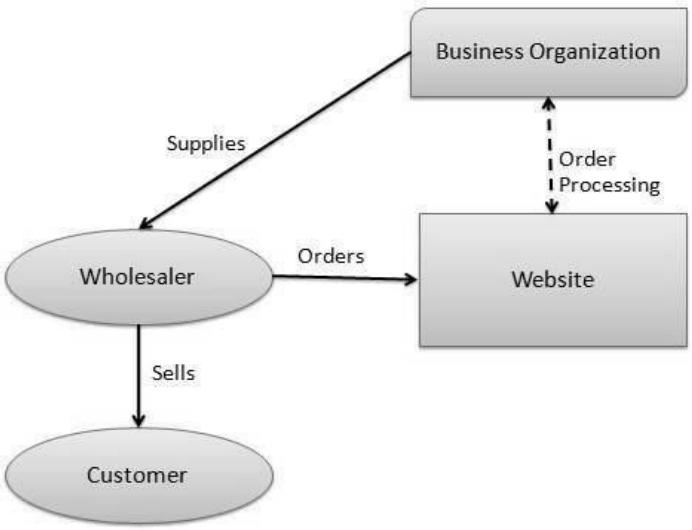
Electronics Commerce business models can generally categorized in following categories.

1) Business - to - Business (B2B)
2) Business - to - Consumer (B2C)
3) Consumer - to - Consumer (C2C)
4) Consumer - to - Business (C2B)
5) Business - to - Government (B2G)
6) Government - to - Business (G2B)
7) Government - to - Citizen (G2C)

**Business - to - Business (B2B)**

Website following B2B business model sells its product to an intermediate buyer who then sells the product to the final customer. As an example, a wholesaler places an order from a company's website and after receiving the consignment, sells the end product to final customer who comes to buy the product at wholesaler's retail outlet.

B2B implies that seller as well as buyer is business entity. B2B covers large number of applications which enables business to form relationships with their distributors, resellers, suppliers etc. Following are the leading items in B2B e-Commerce- Electronics, Shipping and Warehousing, Motor Vehicles, Petrochemicals, Paper, Office products, Food, Agriculture.

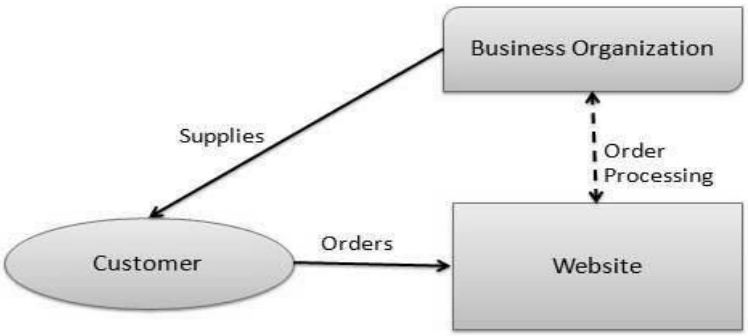


**Business - to - Consumer (B2C)**

Website following B2C business model sells its product directly to a customer. A customer can view products shown on the website of business organization. The customer can choose a product and order the same. Website will send a notification to the business organization via email and organization will dispatch the product/goods to the customer.

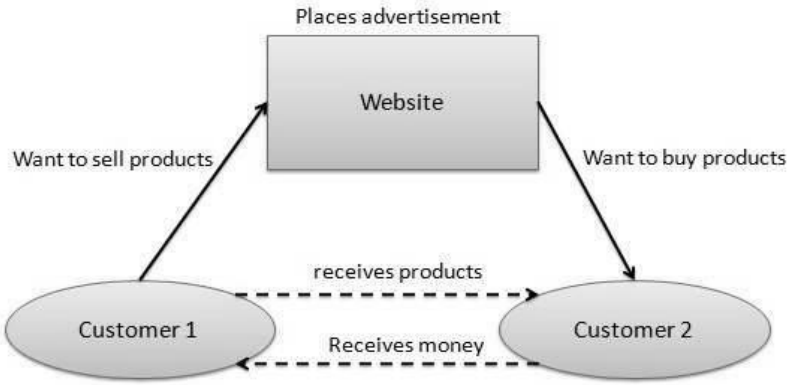
In B2C Model, a consumer goes to the website, selects a catalog, orders the catalog and an email is sent to business organization. After receiving the order, goods would be dispatched to the customer. Following are the key features of a B2C Model

- Heavy advertising required to attract large no. of customers.
- High investment in terms of hardware/software.
- Support or good customer care service



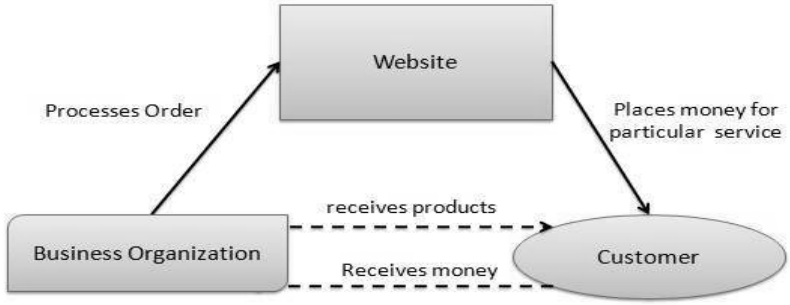

**Consumer - to - Consumer (C2C)**

Website following C2C business model helps consumer to sell their assets like residential property, cars, motorcycles etc. or rent a room by publishing their information on the website. Website may or may not charge the consumer for its services. Another consumer may opt to buy the product of the first customer by viewing the post/advertisement on the website.



**Consumer - to - Business (C2B)**

In this model, a consumer approaches website showing multiple business organizations for a particular service. Consumer places an estimate of amount he/she wants to spend for a particular service. For example, comparison of interest rates of personal loan/ car loan provided by various banks via website. Business organization that fulfils the consumer's requirement within specified budget approaches the customer and provides its services.




**Business - to - Government (B2G)**

B2G model is a variant of B2B model. Such websites are used by government to trade and exchange information with various business organizations. Such websites are accredited by the government and provide a medium to businesses to submit application forms to the government.


**Government - to - Business (G2B)**

Government uses B2G model website to approach business organizations. Such websites support auctions, tenders and application submission functionalities.


**Government - to - Citizen (G2C)**

Government uses G2C model website to approach citizen in general. Such websites support auctions of vehicles, machinery or any other material. Such website also provides services like registration for birth, marriage or death certificates. Main objectives of G2C website are to reduce average time for fulfilling people requests for various government services.

## *Infrastructure Requirements for E-Commerce*

**Every business requires** an infrastructure to support its customers and operations. This includes facilities, equipment, and processes to support all the functional areas of your business. Choosing the correct infrastructure to match your business strategies enables your operations to run efficiently.
Typically, ecommerce businesses try to maintain a high degree of flexibility in their infrastructure to keep fixed costs, low and to be able to react quickly to market changes or competitive pressures. Here are some important infrastructure decisions that ecommerce businesses face.

### 1. Marketing

To succeed, your website must be found. Once visitors are on your site, you need to keep them there and compel them to buy from you. That's the job of your marketing team. Whether its website design, social media, search marketing, merchandising, email, or other forms of advertising, it's all about marketing.

### 2. Facilities

A key competitive advantage that ecommerce businesses have over brick-and-mortar stores is the investment in their physical offices and warehouses. In many cases, you can host your business out of a home office and your basement or garage. If you drop ship or outsource fulfillment, you may be able to do that for a long period of time.

### 3. Customer Service

There are many choices today for delivering high-quality customer service. You can manage those activities in-house or outsource to a third party. Basic customer service for sales and post-sales activities can be handled using email, and by providing an 800 number for more extensive phone support. A customer-management system will make those activities easier, but for smaller companies it is not a requirement. Live chat will impact your operations as someone needs to be available during specified hours of operation.

### 4. Information Technology

Choosing the right ecommerce platform is one of the most important decisions you will make in your business. You can to build and host your own system or use a hosted platform that is more managed.
If you build and host your own system, you may need more cash up front and skilled administrators and developers on your staff. By using a hosted platform, you will not need to host or manage the system in-house, but you may still need web developers on staff.

**5. Fulfilment**

Another key decision is whether you will manage your own inventory or outsource those activities to a fulfilment house or through drop shipping arrangements with your suppliers.

Managing your own inventory will provide you with a high level of control, but you will tie up your cash in inventory, warehouse space, and your own fulfilment staff. Select the best fulfilment option to meet your needs. Be sure to understand the costs involved and analyze the other options before moving forward.

**6. Finance and Administration**

As with other business operations, you will need to decide if you want to manage your finance and administration activities in-house, outsource, or a hybrid of the two. Many ecommerce companies use outside services for vendor payments, payroll, and other basic accounting activities. They decide to focus on the sales, marketing, and customer service.

On the administration side, you need a leadership team and provide direction to them. Good communication is important. Be sure that everyone understands their roles, as well as the overall business strategies. You may need to adjust your approach as your business evolves.

**7. Human Resources**

Many small-business owners avoid the human resources function. Recruiting, setting up compensation, maintaining compliance and other HR activities are specialized and time consuming. You may choose to bring the resources in-house to manage those activities, but also evaluate outsourcing them. There are many individuals and agencies well equipped to take on your HR activities.

## UNIT-IV

### *Electronic Payment System (EPS)*

Electronic Payment is a financial exchange that takes place online between buyers and sellers. The content of this exchange is usually some form of digital financial instrument (such as encrypted credit card numbers, electronic cheques or digital cash) that is backed by a bank or an intermediary, or by a legal tender.

Electronic payment enables individuals, businesses, governments and non profit organizations to make cashless payments for goods and services through cards, mobile phones or the Internet. It presents a number of advantages, including cost and time savings, increased sales and reduced transaction costs. But it is vulnerable to Internet fraud and could potentially increase business expenses.

It is a system that permits online payment between parties using internet. The various factors that make use of electronic payments are:

- Decreasing technology cost.
- Reduced operational and processing cost.
- Increasing online commerce.

### *Advantages of Electronic Payment System*

1. **Time savings**: Money transfer between virtual accounts usually takes a few minutes. Also, you will not waste your time waiting in lines at a bank.
2. **Expenses control**: The virtual account contains the history of all transactions indicating the store and the amount you spent. And you can check it anytime you want.
3. **Reduced risk of loss and theft**. You cannot forget your virtual wallet somewhere and it cannot be taken away by robbers.
4. **Low commissions**. As for the electronic payment system charges for transaction is minimum, and this is a considerable advantage.
5. **User-friendly**. Usually every service is designed to reach the widest possible audience, so it has the understandable user interface. In addition, there is always the opportunity to submit a question to a support team, which often works 24/7. You can always get an answer using these forums.
6. **Convenience**. All the transfers can be performed at anytime, anywhere. It's enough to have an access to the Internet.
7. **Low labour costs:** Since online payments are usually automatic, they have lower labour costs than manual payment methods, such as cheque, money order, cash and EFTPOS.

8. **Quick access to funds during an emergency:** E-payment cards are proving an easy access to money required during an emergency. Without actually carrying the money, it can be put to use quickly when required.
9. **All the expenses can be tracked easily.**

## *Disadvantages of Electronic Payment System*

1. **Restrictions:** Each payment system has its limits regarding the maximum amount in the account, the number of transactions per day and the amount of output.
2. **The risk of being hacked**: The worse situation when the system of processing company has been broken, because it leads to the leak of personal data on cards and its owners.
3. **The problem of transferring money between different payment systems**: Usually the majority of electronic payment systems do not cooperate with each other. In this case, you have to use the services of e-currency exchange, and it can be time-consuming.
4. **The lack of anonymity**: The information about all the transactions, including the amount, time and recipient are stored in the database of the payment system. And it means the intelligence agency has an access to this information. You should decide whether it's bad or good.
5. **The necessity of Internet access**: If Internet connection fails, you cannot use your online account.
6. **Service fees:** Payment gateways and third-party payment processors charge service fees.
7. **Inconvenient for offline sales:** Online payment methods are inconvenient for offline sales.

## *Security measures for Electronic Payment System*

Major security measures are following -

1. **Encryption**: It is a very effective and practical way to safeguard the data being transmitted over the network. Senders of the information encrypt the data using a secret code and specified receiver only can decrypt the data using the same or different secret code.
2. **Digital Signature:** Digital signature ensures the authenticity of the information. A digital signature is an e-signature authentic authenticated through encryption and password.
3. **Security Certificates:** Security certificate is unique digital id used to verify identity of an individual website or user.

**Security Protocols:** Following are the popular protocols used over the internet which ensures security of transactions made over the internet.

**Secure Socket Layer (SSL):** It is the most commonly used protocol and is widely used across the industry. It meets following security requirements -

1) Authentication 2) Encryption 3) Integrity 4) Non-reputability

"https://" is to be used for HTTP urls with SSL, where as "http:/" is to be used for HTTP urls without SSL.

**Secure Hypertext Transfer Protocol (SHTTP)**

SHTTP extends the HTTP internet protocol with public key encryption, authentication and digital signature over the internet. Secure HTTP supports multiple security mechanism providing security to end users. SHTTP works by negotiating encryption scheme types used between client and server.

**Secure Electronic Transaction**

It is a secure protocol developed by MasterCard and Visa in collaboration. Thereoritically, it is the best security protocol. It has following components -

- **Card Holder's Digital Wallet Software:** Digital Wallet allows card holder to make secure purchases online via point and click interface.
- **Merchant Software:** This software helps merchants to communicate with potential customers and financial institutions in secure manner.
- **Payment Gateway Server Software**: Payment gateway provides automatic and standard payment process. It supports the process for merchant's certificate request.
- **Certificate Authority Software:** This software is used by financial institutions to issue digital certificates to card holders and merchants and to enable them to register their account agreements for secure electronic commerce.

## *Resource Requirements for Electronic Payment System*

Security is an essential part of any transaction that takes place over the internet. Customer will lose his faith in e-business if its security is compromised. Following are the essential requirements for safe e-payment system-

1. **Confidential**: Information should not be accessible to unauthorized person. It should not be intercepted during transmission.
2. **Integrity**: Information should not be altered during its transmission over the network.
3. **Availability:** Information should be available wherever and whenever requirement within time limit specified.
4. **Authenticity**: There should be a mechanism to authenticate user before giving him/her access to required information.

5. **Encryption:** Information should be encrypted and decrypted only by authorized user.
6. **Auditability:** Data should be recorded in such a way that it can be audited for integrity requirements.
7. **Non-Repudiabiity:** It is protection against denial of order or denial of payment. Once a sender sends a message, the sender should not able to deny sending the message. Similarly the recipient of message should not be able to deny receipt.

## *Secure Socket Layer (SSL)*

SSL (Secure Sockets Layer) is the standard security technology for establishing an encrypted link between a web server and a browser. This link ensures that all data passed between the web server and browsers remain private and integral. SSL is an industry standard and is used by millions of websites in the protection of their online transactions with their customers.

To be able to create an SSL connection a web server requires an SSL Certificate. When you choose to activate SSL on your web server you will be prompted to complete a number of questions about the identity of your website and your company. Your web server then creates two cryptographic keys - a Private Key and a Public Key. The Public Key does not need to be secret and is placed into a Certificate Signing Request (CSR) .It is a data file also containing your details.

During the SSL Certificate application process, the Certification Authority (CA) will validate your details and issue an SSL Certificate containing your details and allowing you to use SSL. Your web server will match your issued SSL Certificate to your Private Key. Your web server will then be able to establish an encrypted link between the website and your customer's web browser.
The complexities of the SSL protocol remain invisible to your customers. Instead their browsers provide them with a key indicator to let them know they are currently protected by an SSL encrypted session - the lock icon in the lower right-hand corner, clicking on the lock icon displays your SSL Certificate and the details about it. All SSL Certificates are issued to either companies or legally accountable individuals.

Typically an SSL Certificate will contain your domain name, your company name, your address, your city, your state and your country. It will also contain the expiration date of the Certificate and details of the Certification Authority responsible for the issuance of the Certificate.
When a browser connects to a secure site it will retrieve the site's SSL Certificate and check that it has not expired, it has been issued by a Certification Authority the browser trusts, and that it is being used by the website for which it has been issued. If it fails on any one of these checks the browser will display a warning to the end user letting them know that the site is not secured by SSL.

## *Types of e- Payments*

## *Payment through Internet Banking*

- ✓ First we should have a valid user name and password to make any transaction through net banking.
- ✓ To get username and password you have to contact your bank and apply for net banking or you can online generate your user name & password by simple visit the website of bank. Complete the registration process &enter your personal details as required. On receiving request, "User Id" and "Password" will be generated and sent to you through e-mail. Now, you became an authorized user.
- ✓ Now you can access your account with valid "User id" and "Password" by logging in to the bank's website and select option for making payment by net banking".
- ✓ Enter your payment remarks, Confirm payment amount, Enter Transaction password; your bank account will get debited instantly.
- ✓ On successful completion of transaction, you can print receipt online with transaction Reference Number.

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## *IMPS (Immediate Payment Service)*

It is launched in 2010 by Indian government and is facilitated by NPCI (National Payment Corporation of India). As the name suggests, it completes transactions immediately. It is a service which allows you to make payments using your mobile number. It uses mobile number or Aadhaar number to connect to bank accounts and complete payments. Hence, it is a secure method for transferring funds. The services of IMPS are available 24X7 and even on holidays. Almost every big bank is the part of IMPS. The customers of SBI, HDFC, PNB, Canara, BoB, ICICI Bank, Axis bank and other banks can use the IMPS fund transfer facility.

**Objectives of IMPS**

- To enable bank customers to use mobile instruments as a channel for accessing their banks accounts and remit funds.
- Making payment simpler just with the mobile number of the beneficiary.
- To sub-serve the goal of Reserve Bank of India (RBI) in electronification of retail payments.
- To facilitate mobile payment systems already introduced in India with the Reserve Bank of India Mobile Payment Guidelines 2008.
- To build the foundation for a full range of mobile based Banking services.

**How It Works?**

IMPS use mobile number or Aadhaar number to connect with a bank account. When you send money to anyone using IMPS, it first connects you to your bank account using your mobile number. Unlike NEFT and RTGS, it does not transfer funds directly to the beneficiary's account. But it first transfers funds from your account to your mobile number. Then it transfers that fund from your mobile number to his/her mobile number. And at last from beneficiary's mobile number to his/her account.

**Benefits of IMPS**

1. Money will be credited in Beneficiary's account within a few seconds in real time.
2. IMPS is safe, secure and cost effective.
3. No minimum amount limit on transactions. You can even transfer ₹ 1 only with IMPS.
4. IMPS is available 24X7 and on holidays also.
5. You can make intra bank as well as interbank payments.
6. You get the Debit & Credit Confirmation by SMS immediately.

**IMPS Charges**

Facilitating IMPS costs some money not only to banks but also to government. Hence the transactions using IMPS have some charges.

Rs 2.5 + Applicable GST on transfers up to ₹ 10,000.

Rs 5 + Applicable GST on transfers from ₹ 10,000 to ₹ 1, 00,000.

Rs 15 + Applicable GST on transfers from ₹ 1, 00,000 to ₹ 2, 00,000.

**How Do I Enable IMPS**

- If you want to send the money through IMPS using mobile then you have to register for the mobile banking. Some banks register you for mobile banking at the time of account opening while others need separate application to activate the mobile banking.
- However you can use IMPS through the net banking, ATM and branch without the activation of mobile banking.
- If you are going to get money through the IMPS method, you don't need to do anything. The money would be credited to your account and you will get SMS in your mobile. However, you can also get MMID from your bank to receive money easily. MMID can be used instead of bank account number and IFSC or Aadhaar number.

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## *NEFT (National Electronic Fund Transfer)*

National Electronic Funds Transfer (NEFT) is a nation-wide payment system facilitating one-to-one funds transfer. Under this Scheme, individuals, firms and corporate can electronically transfer funds from any bank branch to any individual, firm or corporate having an account with any other bank branch in the country participating in the Scheme.

**How it works?**

- **Step-1:** An individual / firm / corporate intending to originate transfer of funds through NEFT has to fill an application form providing details of the beneficiary (like name of the beneficiary, name of the bank branch , IFSC of the beneficiary bank branch, account type and account number) and the amount to be remitted. Customers enjoying net banking facility can also initiate the funds transfer request online. Some banks offer the NEFT facility even through the ATMs. Walk-in customers will, however, have to give their contact details (complete address and telephone number, etc.) to the branch. This will help the branch to refund the money to the customer in case credit could not be afforded to the beneficiary's bank account or the transaction is rejected / returned for any reason.
- **Step-2:** The originating bank branch prepares a message and sends the message to its pooling centre (also called the NEFT Service Centre).
- **Step-3:** The pooling centre forwards the message to the NEFT Clearing Centre (operated by National Clearing Cell, Reserve Bank of India, Mumbai) to be included for the next available batch.
- **Step-4:** The Clearing Centre sorts the funds transfer transactions destination bank-wise and prepares accounting entries to receive funds from the originating banks (debit) and give the funds to the destination banks (credit). Thereafter, bank-wise remittance messages are forwarded to the destination banks through their pooling centre (NEFT Service Centre).
- **Step-5:** The destination banks receive the inward remittance messages from the Clearing Centre and pass on the credit to the beneficiary customers' accounts.

The beneficiary can expect to get credit for the NEFT transactions within two business hours (currently NEFT business hours is from morning 8 AM to evening 7 PM on all week days and from morning 8 AM to afternoon 1 PM on Saturdays) from the batch in which the transaction was settled.

**NEFT Charges**

a) Inward transactions at destination bank branches – Free, no charges

b) Outward transactions at originating bank branches – Following charges are applicable

| | |
|---|---|
| Amounts upto Rs 10,000 | Rs 2.50 + Applicable GST |
| Amounts above Rs 10,000 and upto Rs 1 lakh | Rs 5 + Applicable GST |
| Amounts above Rs 1 lakh and upto Rs 2 lakh | Rs 15 + Applicable GST |
| Amounts above Rs 2 lakh and upto Rs 5 lakh | Rs 25 + Applicable GST |
| Amounts above Rs 5 lakh and upto Rs 10 lakh | Rs 25 + Applicable GST |

**Benefits of NEFT**

1. The remitter need not send the physical cheque or Demand Draft to the beneficiary.
2. The beneficiary need not visit his / her bank for depositing the paper instruments.
3. The beneficiary need not be apprehensive of loss / theft of physical instruments or the likelihood of fraudulent encashment thereof.
4. Cost effective.
5. Credit confirmation of the remittances sent by SMS or email.
6. Remitter can initiate the remittances from his home / place of work using the internet banking also.
7. Near real time transfer of the funds to the beneficiary account in a secure manner.

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## *RTGS (Real Time Gross Settlement)*

RTGS is defined as the continuous (real-time) settlement of funds transfers individually on an order by order basis (without netting).

'Real Time' means the processing of instructions at the time they are received rather than at some later time; 'Gross Settlement' means the settlement of funds transfer instructions occurs individually (on an instruction by instruction basis).

The RTGS system is primarily meant for large value transactions. The minimum amount to be remitted through RTGS is 2 lakh. There is no upper ceiling for RTGS transactions. The RTGS service for customer's transactions is available to banks from 9.00 hours to 16.30 hours on week days and from 9.00 hours to 14:00 hours on Saturdays for settlement at the RBI end. However, the timings that the banks follow may vary depending on the customer timings of the bank branches.

Under normal circumstances the beneficiary the beneficiary bank has to credit the beneficiary's account within 30 minutes of receiving the funds transfer message.

**RTGS Charges**

With a view to rationalize the service charges levied by banks for offering funds transfer through RTGS system, a broad framework has been mandated as under:

a) Inward transactions – Free, no charge to be levied.

b) Outward transactions – Amount above Rs 2 lakh upto Rs 5 lakh - Rs 25 + Applicable GST
Amount above Rs 5 lakh upto Rs 10 lakh - Rs 50 + Applicable GST

**Benefits of RTGS**

1. An RTGS electronic fund transfer facilitates fund transfer on real time basis. In case of a holiday, the amount gets credited on the next working day.
2. RTGS could also be done offline by submission of the remittance form at the bank branch of the remitter.
3. RTGS avoids the cost involved in other instruments of fund transfer such as demand draft.
4. Fund transfer through RTGS involves comparatively lower remittance charges. Inward remittances are free of cost, while banks can charge a fee not exceeding Rs 30 for an outward remittance on transaction amount of Rs 2lac-5lac. For higher amounts, banks could charge a fee of Rs 55. Thus, RTGS is a safe and secure fund transfer mechanism and avoids risk of loss associated with cheques and demand draft that are used for fund transfer.

**How RTGS is different from National Electronics Funds Transfer System (NEFT)?**

NEFT is an electronic fund transfer system that operates on a Deferred Net Settlement (DNS) basis which settles transactions in batches. In DNS, the settlement takes place with all transactions received till the particular cut-off time. These transactions are netted (payable and receivables) in NEFT.

Whereas in RTGS the transactions are settled individually. For example, currently, NEFT operates in hourly batches. (There are twelve settlements from 8 am to 7 pm on week days and six settlements from 8 am to 1 pm on Saturdays.) Any transaction initiated after a designated settlement time would have to wait till the next designated settlement time Contrary to this, in the RTGS transactions are processed continuously throughout the RTGS business hours.

**IMPS vs. NEFT**

In NEFT, funds are transferred from one account to another in batches. When you transfer money to an account it does not credit immediately. Rather it credits in the next settlement cycle which happens in every 60 minutes. Where all the payments made through IMPS immediately credit to the beneficiary's bank account.

Also, you can use NEFT only from 8.00 am to 7.00pm on weekdays and from 8.00 am to 1.00pm on first and third Saturdays. This service cannot be used on bank holidays. But in the case of IMPS, you do not need to worry about holidays or timings. You can use IMPS even at midnight or on bank holidays.

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**IMPS vs. RTGS**

Funds transfers using RTGS are also settled in real time. But RTGS is a payment mode for large sum of money. Funds which are less than ₹ 2, 00, 000 cannot be transferred using RTGS. Where in IMPS, there is no minimum amount limit.

RTGS can be used from 9.00am to 4.30pm on weekdays and from 9.00am to 2.00pm on Saturdays. Just like NEFT, RTGS also cannot be used during bank holidays. On the other hand IMPS can be used anytime.

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**IMPS vs. UPI**

Indian government's newly launched service UPI is also a service to send and receive money. Just like IMPS, it also can be used round the clock and on holidays. The transactions done using UPI are also settled instantly. But there are some added features also in UPI. These features include virtual payment address and collect money using UPI.

UPI has a limit on transactions of maximum ₹ 1, 00,000 per day. But the transaction limit for IMPS differs from bank to bank. Most of the banks have set it to ₹ 2, 00,000. There is no minimum limit on both these services.

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**IFSC Code**

IFSC or Indian Financial System Code is an alpha-numeric code that uniquely identifies a bank-branch participating in the NEFT system. This is an 11 digit code with the first 4 alpha characters representing the bank, and the last 6 characters representing the branch. The 5th character is 0 (zero). IFSC is used by the NEFT system to identify the originating / destination banks / branches and also to route the messages appropriately to the concerned banks / branches.

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**Electronic Clearing System (ECS)**

ECS is an alternative method for effecting payment transactions in respect of the utility-bill-payments such as telephone bills, electricity bills, insurance premium, card payments and loan repayments, etc., which would obviate the need for issuing and handling paper instruments and thereby facilitate improved customer service by banks / companies / corporations / government departments, etc., collecting / receiving the payments.

## UNIT-V

## *Electronic Payment System (EPS)*

### *Bank Cards*

These kinds of cards are typically issued by a bank, which aim to provide their customers a greater sense of flexibility in their banking hours. For the most part, a customer can use their ATM card to make deposits, withdraw money, transfer money between their accounts, get a cash advance, check an account balance, or even make a loan payment at any given convenient time, day or night.

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### *Credit Cards*

- ✓ The credit card issuer gives you a card. You use the card to pay for items and services up to a certain total amount i.e. your credit limit. The store merchant or service provider collects what you owe from the card issuer, whom you repay.
- ✓ Basically, the credit is a loan being given to the user of the card. Generally, the company that issues the card requires a minimum payment on the bill per month and requires, in exchange, a person pay interest on the owed balance, which can be as high as 29% per year. If you pay it off in full there is no interest.
- ✓ Credit cards can be very useful but the fact that the money isn't being drawn from an account can easily lead people to overspend and get into credit card debt.
- ✓ The credit cards can also be used to withdraw cash from an ATM and for transferring funds to bank accounts, debit cards, credit cards and prepaid cards.

**How credit card companies make money:**

- High rates of interest: interest on credit cards accounts
- Annual fees.
- Late fees, over-the-limit fees, and other miscellaneous charges.
- Charging merchants and service providers a fee each time a customer uses the company's credit card.

**Types of Credit Cards**

1) **Standard Credit Cards:** These are general purpose cards that are most commonly issued to users. They need no deposits and credit limit is decided by the credit card.
2) **Premium Credit Cards:** These are the gold and platinum cards. They come with more offers and come with higher credit limits.
3) **Secured Credit Cards:** To use secured credit cards, you need to deposit money with the company. Your credit limit is decided based on the deposit. These cards usually have higher rates of interest and an annual fee.

4) **Prepaid Credit Cards:** Here, the user loads the card with money. It is similar to a debit card expect that it is not tied to a bank account.
5) **Specialty Credit Cards:** These cards are offered through affiliations and partnerships with major brands. For example the PVR Kotak Card offers two free movie tickets at PVR every month on spending Rs 7,500 per month.

**Benefits of using Credit Cards**

1. **Cash Back:** Many banks offer cash back opportunities if you use your card to pay monthly bills, for grocery purchases, online shopping portals too have cash back offers on various products.
2. **Reward Points:** Credit card companies offer reward points for any purchases you make with card.
3. **EMIs:** If you are making a big-ticket purchase, you can easily convert it to affordable monthly instalments. Banks usually charge interest for conversion to EMIs.
4. **Grace Period:** One of the main advantages of using a credit card is you can defer your payments till your bill your due. Banks offer a maximum 50-day grace period for paying back your dues.
5. **Convenience:** Credit cards can save you time, no searching for an ATM or keeping cash on-hand.
6. **Record Keeping:** Credit card statements can help you track your expenses.
7. **Perks:** From frequent flier miles to discounts on automobiles, there is a program out there for everyone. Many credit card companies offer incentive programs based on the amount of purchases you make.

**Disadvantages**

1. **Overuse:** Revolving credit makes it easy to spend beyond your means
2. **Paperwork:** You'll need to save your receipts and check them against your statement each month. This is a good way to ensure that you haven't been overcharged.
3. **High-cost fees:** Your purchase will suddenly become much more expensive if you carry a balance or miss a payment.
4. **Unexpected fees:** Typically, you'll pay between 2 and 4 percent just to get the cash advance; also cash advances usually carry high interest rates.
5. **Teaser rates--**Low introductory rates may be an attractive option, but they last only for a limited time. When the teaser rate expires, the interest rate charged on your balance can jump dramatically.

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## *Debit Cards*

- ✓ Debit cards combine the functions of ATM cards and checks. When you pay with a debit card, the money is automatically deducted from your checking account.
- ✓ These kinds of cards, also issued by a bank, generally combine the uses of an ATM card and a check, in that using a debit card to make a purchase will result in the funds immediately being withdrawn from the bank account. With a debit card you can make either a PIN transaction (where you enter your PIN code) or a signature transaction (where you sign for the purchase).
- ✓ Debit card users need to watch that they don't overdraw on their account as there could be steep penalties. Debit cards retain the same functions as previously outlined for ATM cards.
- ✓ A debit card is basically a card used for fund transactions. You can deposit and withdraw as per your convenience this way without the hassle of standing in long queues. Same can be utilized for mobile banking and internet banking.

**Combo ATM/Debit Cards:**

Many banks issue a combined ATM/debit card that looks just like a credit card and can be used wherever credit cards are accepted. But don't be mistaken they are not credit cards. The money you spend comes out of your checking account immediately.

**Types of Debit Cards in India**

1. **Visa Debit Cards**: These debit cards are issued with the bank's tie-up with VISA payment services providing the Verified by Visa (VbV) platform for online transactions.
2. **Visa Electron Debit Cards**: Visa Electron debit cards are very similar to Visa debit cards but these cards do not provide the overdraft feature.
3. **MasterCard Debit Cards** : A MasterCard Cirrus Card or a MasterCard Maestro Card gives customers access to their funds worldwide and they can perform online transactions using their bank accounts on the MasterCard Secure Code platform.
4. **Contactless Debit Cards**: Customers can make payments with just a tap or wave of their contactless debit cards near PoS terminals, with the cards working on Near Field Technology (NFC) thereby making electronic payments safer.
5. **RuPay Debit Cards**: Introduced as a domestic card scheme by the NPCI, RuPay debit cards facilitate online purchases and transactions on the Discover network and ATM transactions under the National Financial Switch network.
6. **Maestro Debit Card**: MasterCard is a premier, international debit card service that has been popularly adopted at over 13 million locations spread across 100+ countries around the world. Maestro helps the customer gain immediate access to his/her money through a robust, international network of compatible ATMs, POS outlets and online resources.

**Benefits of Using Debit Cards**

1. You pay your bills immediately, unlike when you use a credit card and get the bill later.
2. **Easy to obtain:** Once you open an account most institutions will issue you a debit card upon request.
3. **Convenience:** Purchases can be made by swiping the card rather than filling out a paper check.
4. **Safety:** You don't have to carry cash or a check book.
5. **Readily Accepted:** When out of town (or out of country), debit cards are usually widely accepted.

**Disadvantage**

1. Payment is immediate.
2. **No right to withhold payment.** Because the money is immediately transferred, consumers using debit cards don't have the right to withhold payment in the event of a dispute with the merchant over the goods or services purchased.
3. **Transaction fees.** Some banks and merchants charge transaction fees for using debit cards.
4. **High risks if stolen.** If your debit card number is stolen during an online purchase, the thief may drain your bank.

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## *Prepaid Cards*

- ✓ A prepaid card is a card you can use to pay for things. You buy a card with money loaded on it. Then you can use the card to spend up to that amount. A prepaid card is also called a prepaid debit card, or a stored value card.
- ✓ A predetermined amount of money is put into the card balance and can be spent just like any other debit or credit card, until the money runs out. At that point, it must be refilled with more money before it can be used again.
- ✓ A prepaid debit card can be a great way to keep on budget as you can only spend what's on the card. The drawback, of course, is you are limited to the amount on the card and you must keep track of the balance.

- ✓ The usage of prepaid cards depends on who has issued these cards.
    - The prepaid cards issued by the banks can be used to withdraw cash from an ATM, purchase of goods and services at Point of Sale (POS)/E-commerce (online purchase) and for domestic fund transfer from one person to another. Such prepaid cards are known as open system prepaid cards.

- The prepaid cards issued by authorised non-bank entities can be used only for purchase of goods and services at Point of Sale (POS)/E-commerce (online purchase) and for domestic fund transfer from one person to another. Such prepaid cards are known as semi-closed system prepaid cards.

**Benefits of Using PrePaid Cards**

1. **No credit check**: A pre-paid card does not offer a credit facility, so they don't credit check you.
2. **You can't get into debt:** As there's no credit facility you can't get into debt.
3. **You're in control**: You set your spending limit, not the card provider. All you need to do is top-up your card when you need to via text, phone or by a bank transfer.
4. **Pre-paid cards for teenagers and students:** This can give your child a great sense of independence while teaching them the rudiments of managing their finances without the risk of getting into debt.
5. **Improve your credit rating:** Some pre-paid cards allow you to improve your credit rating by charging a **Cash back:** A lot of prepaid cards offer cash back benefits for online purchases you make on the card.

**Disadvantage**

1. **A prepaid card is not a credit card: You cannot take the advantages of credit card.**
2. There are certain transactions you can't use your pre-paid card for; mainly transactions where your card would normally need to be pre-authorised before the full cost of your purchase is known. An example of this is when a hotel asks you for your card number as security when you check in, so if you forget to pay your room bill at the end of your stay, they can charge your card.
3. Prepaid card charges include application fees, monthly fees, top-up fees, transaction fee etc.
4. Inactivity fees: some prepaid card providers will also impose a charge if you don't use the prepaid

## *E-Wallet*

E-wallet is a facility which is used for transactions made online through a computer or a smart phone. Its utility is same as a credit or debit card. An E-wallet needs to be linked with the individual's bank account to make payments.

E-Wallet is a feature exclusively for customers who have registered and established a My Account profile. E-Wallet allows you to store multiple credit card and bank account numbers in a secure environment, and eliminate the need to enter in account information when making your payment. Once you have registered and created E-Wallet profiles, you can make payments faster and with less typing.

**How does E-Wallet work?**
E-Wallet provides the ability to store multiple credit cards, debit cards and back account information for making faster payments. You can create up to ten separate profiles for both credit and debit cards, and up to ten separate profiles for checking and savings accounts. You can edit and delete these profiles as needed. When making a payment after logging in to My Account, you will save time by having your credit or bank account information filled in automatically.

**For Consumer**

- ✓ Download the app on your device.
- ✓ Sign-up by entering the relevant information. The user will receive a password.
- ✓ Load money using debit/credit card or Net banking.
- ✓ After shopping online, the e-wallet automatically fills in the user's information on the payment form.
- ✓ Once the online payment is made, the user is not required to fill the order form on any other website as the information gets stored in the database and is updated automatically.

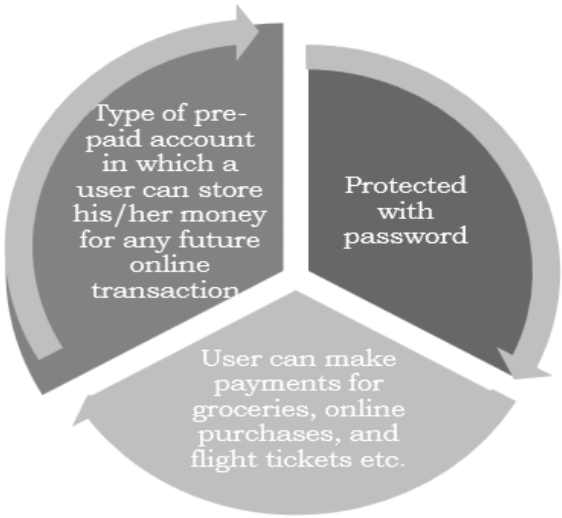
**For Merchant**

- ✓ Merchant downloads the app on his/her device.
- ✓ Sign-up by entering the relevant information. The user will receive a password.
- ✓ Self-declare yourself as a merchant.
- ✓ Start accepting payments.

**Why use E-Wallet?**

E-Wallet saves you time because you don't have to look for your credit card or bank account information every time you make a payment. The payment information from your Primary account is conveniently pre-filled during the payment process, and you can quickly select another payment account if you have more than one set up.

## *Features of E-Wallet*




**Types of e-wallets permitted in India**

As per the Reserve Bank of India, there are three kinds of e-wallets in India: closed, semi-closed and open.

- **Closed e-wallets:** These are wallets issued by an entity for facilitating the purchase of goods and services from it. These instruments do not permit cash withdrawal or redemption
  **Ex.** Cab services (OLA), e-commerce (Paytm) and mobile companies create e-wallets for making payments towards purchase of products from them /for usage of their services. They provide cash backs for payments made through this channel.

- **Semi-Closed e-wallets:** These are wallets which can be used for purchase of goods and services, including financial services at a group of clearly identified merchant locations/ establishments which have a specific contract with the issuer to accept them. These wallets do not permit cash withdrawal or redemption by the holder.

Wallets for amounts up to Rs.10,000/- can be created under this category by accepting minimum details of the customer, provided the amount outstanding at any point of time does not exceed Rs. 10,000/- and the total value of reloads during any given month also does not exceed Rs. 10,000/-. Amount up to Rs.50, 000/- can be created in wallets by accepting any 'officially valid document' which is compliant with anti-money laundering rules. Such wallets are non-reloadable in nature. Amount up to Rs.1, 00,000/- can be created by with full Know Your Client norms (KYC) and can be reloaded.
**Ex**. AirTel Money, which is used for making payments for a range of services like money transfer from Airtel Money to another bank account or any other Airtel Money Wallet or paying select utility bills.

- **Open e-wallets:** These are wallets which can be used for purchase of goods and services, including financial services like funds transfer at any card accepting merchant locations [point of sale (POS) terminals] and also permit cash withdrawal at ATMs / Banking Correspondents (BCs). However, cash withdrawal at POS is permitted only up to a limit of Rs.1000/- per day subject to the same conditions as applicable hitherto to debit cards (for cash withdrawal at POS).
  **Ex.** M-Pesa is an open wallet run by Vodafone in partnership with ICICI Bank. Axis Bank's e-Wallet Card', can used for making payments on sites that accept Visa cards, with a minimum limit of Rs 10, and a maximum limit of Rs 50,000, and a validity of 48 hours.

**Benefits of e-wallets**

1. **Ease of use:** It's like a one click pay with no need to fill in card numbers and passwords every time.
2. **Ease of access:** There will be no need of physical wallet like we do in the case of cash or cards.
3. **Ensures timely payments**: You can also make use of the auto pay facility to make future bill payments automatically, from your wallet balance on a pre-determined date.
4. There would synchronization of data from multiple platforms.
5. Cash Back offers.

**Disadvantages**

1. Mobile network connectivity is the biggest impediment
2. More than connectivity, security issues are at the forefront nowadays.
3. Enough support infrastructures is not available
4. It also does not cater to needs of the entire population.

**Examples of e-wallets permitted in India**

Airtel Money, Freecharge, HDFC PayZapp, ICICI Pockets, JioMoney, PNB Kitty, BOB M-CLIP, AXIS LIME, Mobikwik, Ola Money, Oxigen, Paytm, State Bank Buddy.

## *UPI (Unified Payment Interface)*

Unified Payments Interface (UPI) is a payment system launched by National Payments Corporation of India and regulated by the Reserve Bank of India which facilitates the instant fund transfer between two bank accounts on the mobile platform.

UPI is built over Immediate Payment Service (IMPS) for transferring funds using Virtual Payment Address (a unique ID provided by the bank), Account Number with IFS Code, Mobile Number with MMID (Mobile Money Identifier), Aadhaar Number, or a one-time use Virtual ID. An MPIN (Mobile banking Personal Identification number) is required to confirm each payment.

A Unified Payment Interface (UPI) is a single window mobile payment system launched by the National Payments Corporation of India (NPCI). The system is designed to provide a simple, secure and convenient "single interface" to enable sending and receiving of money using smart phones through a "single identifier" which can be a virtual address like an email ID, mobile number or Aadhaar number (like the Social Security Number). It eliminates the need to enter bank details or other sensitive information each time a customer initiates a transaction.

Unified Payments Interface (UPI) is a system that powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, seamless fund routing & merchant payments into one hood. It also caters to the "Peer to Peer" collect request which can be scheduled and paid as per requirement and convenience.

With the above context in mind, NPCI conducted a pilot launch with 21 member banks. The pilot launch was on 11th April 2016 by Dr. Raghuram G Rajan, Governor, RBI at Mumbai. Banks have started to upload their UPI enabled Apps on Google Play store from 25th August, 2016 onwards.

**UPI - Benefits**

**Benefits for banks:**

- ✓ Single click Two Factor authentication- Aligned with the Regulatory guidelines, yet provides for a very strong feature of seamless single click payment.
- ✓ Universal Application for transaction.
- ✓ Safer, Secured and Innovative.
- ✓ Payment basis Single/ Unique Identifier.
- ✓ Enable seamless merchant transactions.

**Benefits for end Customers:**

- ✓ Round the clock availability.
- ✓ Single Application for accessing different bank accounts.
- ✓ Use of Virtual ID is more secure, no credential sharing.
- ✓ Single click authentication.
- ✓ Raise Complaint from Mobile App directly.

**Benefits for Merchants:**

- ✓ No risk of storing customer's virtual address like in Cards.
- ✓ Tap customers not having credit/debit cards.
- ✓ Suitable for e-Com & m-Com transaction.
- ✓ Resolves the COD collection problem.

## *Aadhaar Enabled Payment System (AEPS)*

AEPS allows bank-to-bank transaction at PoS (MicroATM) with the help of Banking Correspondent. Seed your account with your Aadhaar number. Now do transactions without remembering any PIN.

**Objectives of AEPS**

1. To empower a bank customer to use Aadhaar as his/her identity to access his/ her respective Aadhaar enabled bank account and perform basic banking transactions like balance enquiry, Cash deposit, cash withdrawal etc.
2. To sub-serve the goal of RBI in electronification of retail payments.
3. To enable banks to route the Aadhaar initiated interbank transactions through a central switching and clearing agency.
4. To facilitate disbursements of Government entitlements like NREGA, Social Security pension, Handicapped Old Age Pension etc. of any Central or State Government bodies, using Aadhaar and authentication thereof as supported by UIDAI.
5. To facilitate inter-operability across banks in a safe and secured manner.
6. To build the foundation for a full range of Aadhaar enabled Banking services.

**What is Aadhaar number?**

It is a 12 digit unique identification number that stores demographic and biometric information of the resident with photograph issued by Unique Identification Authority of India (UIDAI) on behalf of Government of India. Aadhaar serves as a proof of identity and address, anywhere in India.

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**What is Aadhaar Payment Bridge (APB) System?**

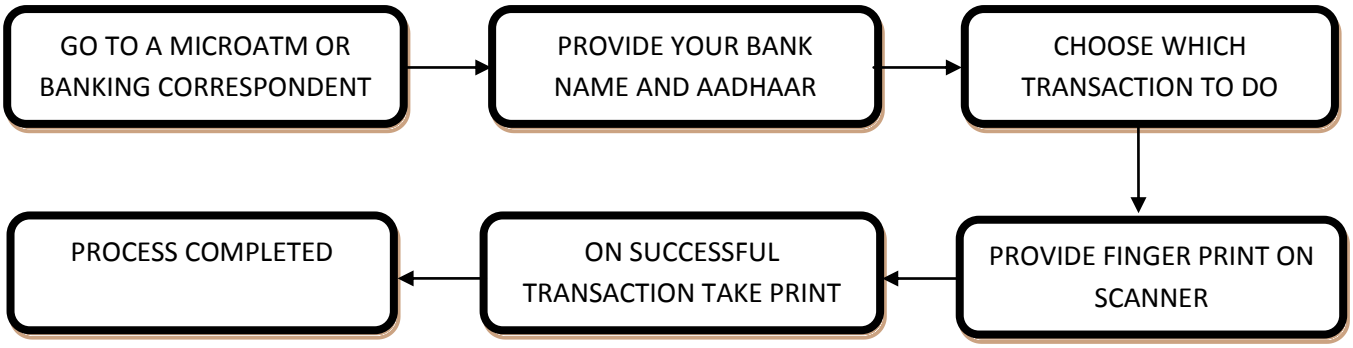
It is a unique payment system implemented by National Payments Corporation of India (NPCI), which uses Aadhaar number as a central key for electronically channelizing the Government subsidies and benefits in the Aadhaar Enabled Bank Accounts (AEBA) of the intended beneficiaries.

**What are the benefits of Aadhaar Payment Bridge (APB) System?**

- ✓ Eliminates inordinate delays, multiple channels & paper-work involved in the existing system.
- ✓ Transfers benefits & subsidies in a seamless & timely manner and directly into the Aadhaar Enabled Bank Account.
- ✓ In case of change in bank account, customer is not required to convey the bank account details or change in bank details to the Government Department or Agency.
- ✓ Customer not required to open multiple bank accounts for receiving benefits and subsidies of various social welfare schemes

**Aadhaar enabled Services**

- ✓ Balance Enquiry
- ✓ Cash Withdrawal
- ✓ Cash Deposit
- ✓ Aadhaar to Aadhaar fund transfer.

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## *BHIM (Bharat Interface for Money)*

BHIM is an app that lets you make easy and quick payment transactions using UPI. It's easier than wallets! You will not have to fill-out those tedious bank account details again and again. You can easily make direct bank to bank payments and instantly collect money using just Mobile number or Payment address.

- **What is this UPI?**
  Unified Payment Interface (UPI) is an instant payment system developed by the National Payments Corporation of India (NPCI), an RBI regulated entity. UPI is built over the IMPS infrastructure and allows you to instantly transfer money between any two parties' bank accounts. There are no charges for making transaction through BHIM.
  **Note:** Your bank might however levy a nominal charge as UPI or IMPS transfer fee.
  To start using BHIM all you need is a Smartphone, Internet access, an Indian bank account that supports UPI payments and mobile number linked to the bank account. Link your bank account to UPI through the app. BHIM app is currently available on Android (Version 8 & above) and iOS mobiles (Version 5 & above).

- **Send money to anyone using BHIM?**
  You can send money using the BHIM app from your UPI enabled bank account. You will need to register and set a UPI PIN using the debit card details linked to the bank account. If your beneficiary's bank account is also linked to UPI, you can simply use their mobile number or Payment Address to transfer.

  If not, you can use IFSC code, Bank account or MMID, Mobile number to send money. If your mobile number changes you will first have to update your mobile number with your bank. When you open the BHIM app next time, your mobile number will verify by sending an SMS and your old BHIM account will be restored. For security reasons this account will be activated after 24 hours.

  BHIM is very safe. Every transaction on BHIM requires you to enter your UPI-PIN which is known only to you, preventing unauthorised access. You should not share this UPI-PIN. In addition all transaction initiated over BHIM are carried out over secure bank networks and all communications between BHIM and banks are over encrypted channels.

- **What is an UPI-PIN?**
  UPI-PIN (UPI Personal Identification Number) is a 4-6 digit secret code you create/set during first time registration with this App. You have to enter this UPI-PIN to authorize all bank transactions. If you have already set up an UPI-PIN with other UPI Apps you can use the same on BHIM.

- **What is the advantage of UPI payments over wallets?**
  The main advantage is simple and easy to transact. Simply link your bank account and then you can make seamless payments without having to worry about topping up like a wallet, Limits are equivalent to that of IMPS.

- **Transaction Limits:** Maximum of Rs. 10,000 per transaction and Rs. 20,000 within 24 hours.
- **Transaction Charges:** No charges. Banks might levy a nominal charge as UPI or IMPS transfer.
- **Language supported:** Hindi and English. More languages coming soon!
- **Benefits:**
  - ✓ Digital payment app for all bank accounts.
  - ✓ Money remains in your bank account, so you earn interest.
  - ✓ Simple, secure and light.
  - ✓ BHIM framework *99# works without internet.

## *USSD based Mobile Banking (*99#)*

Mobile banking has brought the bank account in your hand. Today, you can check bank balance, get a mini statement and do a payment through the mobile banking. But, what if you don't have a smart phone or you don't have the internet? The answer to this problem is the USSD based mobile banking. Just dial the *99# and see the magic. You can do all those things which are available to a person with smart phone and 3G data. Almost every bank including SBI, ICICI, HDFC, PNB, Axis and BOB support *99# USSD Payment. Recently, NPCI has launched BHIM app. It also linked USSD banking with BHIM app. Now, you can enjoy all UPI services using *99# banking.

**What is USSD (Unstructured Supplementary Service Data)**

- ✓ The codes which directly communicate with the server of Telecom Company are called as the USSD. You must have noticed that this code starts with '*' (asterisk) and ends with # (hash).
- ✓ USSD sometimes referred to as "Quick Codes" or "Feature codes", is a protocol used by GSM cellular telephones to communicate with the service provider's computers.

**Ex:** Trying to get the mobile balance by dialling a certain code.
Recharge vendor using certain codes to access mobile services.

**USSD code for Different Languages**

English (*99#), Hindi (*99*22#), Tamil (*99*23#), Telugu (*99*24#), Malayalam (*99*25#), Kannada (*99*26#), Gujarati (*99*27#), Marathi (*99*28#), Bengali (*99*29#), Punjabi (*99*30#), Assamese (*99*31#), Oriya (*99*32#).

**USSD for Banking**

- ✓ As USSD code connects to the telecom operator's server, it also connects to bank's server. Hence, it gives you access to your bank account and performs some transaction.
- ✓ The entry to your bank account is given on the basis of registered mobile number. Thus, you must use registered mobile number to dial the USSD code.
- ✓ The connection to the server of your bank goes through the servers of telecom companies. The NPCI handles all the technicality of this USSD service.
- ✓ A special number ***99#** is fixed to access the banking services. This number works across the banks. This system of banking transaction is termed as the NUUP

**What is NUUP (National Unified USSD Platform)**

It is an innovative service developed by NPCI and launched by the Indian government in 2014. The service allows the banks and telecom service providers to work together seamlessly. The services of NUUP are based on the USSD method. It is available on all GSM enabled handsets. You do not need an internet connection to use the services of this method. It uses voice connectivity only.

**How to use USSD**

First of all, you need to register your mobile number to your bank account. Visit your branch to get your mobile number registered. If your mobile number is already registered then you can directly dial the *99#. Follow these steps for USSD banking
Dial *99# with your registered number and wait for 3-5 seconds.
You will see all the options for its services. These options are-

1. Send Money
2. Request Money
3. Check balance
4. My profile
5. Pending request
6. Transactions
7. UPI PIN

From here, the process will be different for every service.

## *Point of Sale (PoS)*

- ✓ The POS system can include the ability to record and track customer orders, process credit and debit cards, connect to other systems in a network, and manage inventory. Generally, a POS terminal has as its core a personal computer, which is provided with application-specific programs and I/O devices for the particular environment in which it will serve.
- ✓ A POS system for a restaurant, for example, is likely to have all menu items stored in a database that can be queried for information in a number of ways. POS terminals are used in most industries that have a point of sale such as a service desk, including restaurants, lodging, entertainment, and museums.
- ✓ Increasingly, POS terminals are also Web-enabled, which makes remote training, and operation possible, as well as inventory tracking across geographically-dispersed locations.

**With a POS system:**

- ✓ You can analyze sales data, figure out how well all the items on your shelves sell, and adjust purchasing levels accordingly.
- ✓ You can maintain a sales history to help adjust your buying decisions for seasonal purchasing trends.
- ✓ You can improve pricing accuracy by integrating bar-code scanners and credit card authorization ability with the POS system.

There are plenty of popular POS software systems that enable you to use add-on devices at your checkout stations, including electronic cash drawers, bar-code scanners, credit card readers, and receipt or invoice printers. POS packages frequently come with integrated accounting modules, including general ledger, accounts receivable, accounts payable, purchasing, and inventory control systems.

**Features of POS**

1. **Ease of use.** Look for software with a user-friendly graphical interface.
2. **Entry of sales information.** Most systems allow you to enter inventory codes either manually or automatically via a bar-code scanner.
3. **Pricing.** POS systems generally offer a variety of ways to keep track of pricing, including add-on amounts, percentage of cost, margin percentage and custom formulas.
4. **Updating product information.** Once a sale is entered, these systems automatically update inventory and accounts receivable records.
5. **Sales tracking options.** Different businesses get paid in different ways.
6. **Security.** In retail, it's important to keep tight control over cash receipts to prevent theft.

## Types of PoS

PHYSICAL POS

Physical Card Swiping – PTSN with landline / GPRS enabled


MPOS

Phone connected with external POS device through jack / Bluetooth

V-POS

Virtual E-payment Gateway

## Physical PoS

1. SWIPE A DEBIT/CREDIT CARD ON THE POS MACHINE

2. ENTER AMOUNT TO BE PAID AND PIN


3. GENERATE RECEIPT

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## Installation of Physical PoS Terminal

1. Open / identify current account for transactions
2. Fill in the application form (online / at the branch)
3. Identify type of PoS required (landline / GPRS)
4. Submit following documents:
   - Proof of business (any one)
     - Shop & establishment registration certificate
     - VAT certificate
     - Sales tax
   - Proof of address
   - Photo identity proof of proprietor / partner
   - Financial details
     - Bank statement
     - Income tax return
5. Acceptance of MDR by merchant
6. Execution of Merchant Establishment Agreement

## Mobile PoS


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# V-PoS

No PoS machine required

QR code used for payment to bank account of merchant

Complete privacy of merchant bank account