CYC (SEC) - 103

E- Commerce and Digital Evidence

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UNIT 1

ONLINE CONTRACTS

STRUCTURE

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1.15 SUGGESTED READINGS

1.16 ANSWERS

1.1 Introduction:

Technology explosion in present era sets a need for the amendment of present legal structure of laws relating to contracts. With the expansion of technology in various fields, everything now is just a click away. History witnessed the formation of contracts through letters, telegraph, fax, telephone and now e-mails are the widely used medium to make proposals and for their acceptance. Ironically the law responsible for the smoothness of relationships arising from contracts is remained untouched and not providing solution to most of the problems produced by the use of latest technology in this regard. Though Information and Technology Act 2000 was a good attempt to cover the said field and combined reading of I.T. Act with Indian Contract Act 1872 may provide clarity in various aspects of online contracts. Discussion in this unit is limited to the traditional provisions of laws relating to contracts and how the emerging concept like online contracts are to be regulated in present time.

1.2 Objectives:

After reading this unit you will be able to understand:

- Concept of traditional contracts and online contracts
- Various modes for the formation of online contracts
- Regulation of online contracts
- Performance and execution of online contracts

1.3 Online Contracts:

Invention of computer and then Internet has brought revolution in the field of e-commerce. Online contracts are those in which while making proposal and while accepting a proposal parties used electronic mode such as email etc. Fundamentals of contracts as enshrined under Indian Contract Act 1872 are applicable to online contracts also. Basically online contracts can be formed in following ways

- Through Emails
- Through Internet Sites
- Through Electronic Forms

1.3.1 Through Emails:

The most widely used mode to formulate online contracts is making offer or proposal through email and acceptance from other party through same mode. It is like posting a letter containing proposal to an intended party to the contract and accepting an offer in same way.

1.3.2. Through Internet Sites:

Another mode to create online contract is through internet sites. Shopping from internet sites is best example in this regard. There is no need to go to market and to purchase the commodities, one can explore the products online and place the order on the same website.

1.3.3. Through Electronic Forms:

Before accepting anything which is offered electronically sometimes we have to accept the terms and conditions prescribed in electronic form. By accepting the terms contract can be formulated. Best example is when any person wants to create an email address or wants to download any software from any CD, it will prompt the acceptor to make tick in checkbox at the end of terms of electronic form. Without marking tick on checkbox you cannot download the intended software. These online contracts are further divided into three sub categories

a. **Click Wrap:** where intended acceptor is to made a click on "I Agree" button
b. **Browse Wrap:** where content to be used is available on a hyperlink on a website and by clicking on the link it is presumed that acceptance is being given by the user
c. **Shrink Wrap:** where before using/installing the product user is made aware of the terms and conditions which he is required to be fulfilled so as to protect the interest of the manufacturer.

1.4 Emergence of online contracts:

Under traditional aspect people use to make proposals face to face or by posting letters containing proposals. But with the advent of new technology everybody is opting for faster modes of communication. Even when in 19th century the Indian Contract Act was framed, drafters not even bother to include provisions dealing with offer and acceptance through telephone. Indian Contract Act only provides for the proposal and acceptance through post. It was in 1966 when a matter came for discussion before Supreme Court and position was made clear about contracts entered into through telephone. Following are reasons for mushroom growth of online contracts

a. Easy accessibility of internet
b. Easy approach to intended party to contract
c. Less time consumption
d. Cheap
e. No time restrains
f. Speedy method of communication
g. Worldwide application

1.5 Essentials to formulate online contract:

Online contracts are no different from traditional paper contracts but the only difference between both is the mode used to make offer and acceptance. Following are necessary to constitute online contract

a. Proposal
b. Acceptance
c. Consideration
d. Capacity of parties
e. Electronic mode for communication

1.5.1 Proposal:

Every agreement is an outcome of a promise and promise can be made by making proposal and by acceptance, so first of all we must understand the term proposal. The term "Proposal" has been defined in section 2(a) of The Indian Contract Act 1872 as follows

"When one person signifies to another his willingness to do or to abstain from doing anything, with a view to obtaining the assent of that other to such act or abstinence, he is said to make a proposal"

Formation of any contract is only possible when one makes proposal and another signifies his assent to the same.

1.5.2 Acceptance:

sec 2(b) of Indian Contract Act defines acceptance as,

"*When the person to whom the proposal is made signifies his assent thereto, the proposal is said to be accepted. A proposal when accepted, become a promise"*

1.5.2.1 Essentials of a valid acceptance:

In order to constitute a valid agreement between two parties acceptance must have following characteristics

a. Acceptance must be communicated
b. Acceptance should be absolute
c. Acceptance should be unqualified
d. Acceptance should be made within a time when proposal is still subsisting

1.5.2.2 Acceptance when completed:

Sec 4 of The Indian Contract Act provides that when an acceptance is considered to be completed so as to bind the proposer and acceptor towards each other. But this section is restricted to the acceptance made by post only. Before discussing the cases of online contracts it is necessary to understand the basic provision.

a. *Against Proposer:* The communication of acceptance is complete against the proposer when it is put into the course of transmission.
b. *Against Acceptor:* the communication of acceptance is complete against the acceptor when it comes to the knowledge of the proposer

It means acceptance cannot be revoked by the proposer when acceptor has already put the acceptance into the course of transmission but acceptor is at liberty to withdraw the same while revoking the proposal before the acceptance comes into the knowledge of the proposer this is called mailbox rule.

1.5.2.3 Acceptance in Online Contracts:

Formulation of a contract needs a valid acceptance to a valid offer. But as Indian contract is only providing for acceptance through post the very first time Indian judiciary

faced a problem in 1966 in the case of Bhagwan Das Kedia[1] where question of jurisdiction was raised in a contract which was entered into by a telephonic conversation. In this case an offer to purchase cotton seed cakes were made by plaintiffs from Ahmedabad to defendants in Khamgaon. But defendants failed to perform the contract and plaintiff sued them for the damages of Rs. 31,150 at Ahmedabad. Defendant raised the contention that Ahmedabad court was not having jurisdiction as the contract was completed at khamgaon where the acceptance was uttered so it was court at khamgaon in which this case must be initiated. As per sec 4 of Indian Contract Act contract in case of acceptance is made through post is considered to be completed when the proposer is found bound i.e. when letter of acceptance is posted to him from the place where acceptor lives. Court relied on the decision of English court in this regard where a case having similar facts was decided by the court, it was the case of Entores ltd.[2] In which court treated the contracts entered into by telephone at par with contracts made when parties are in presence to each other. It means contract is considered to be completed where the acceptance is being heard and not uttered. So court held the jurisdiction of Ahmedabad proper and legal.

Now in online contracts when an email is sent containing an acceptance to an offer the big question remains unanswered is about the jurisdiction of the court. In online contracts parties may be far away from each other and enforceability may be one issue in these contracts. When two computers are connected with each other and the form of communication is direct communication between two computers, it does not attract the mailbox rule. The sole reason is that no third party intervenes for such communication. A message is sent from one computer to another on the same network. This is similar to standard telephonic communication where users control the actual communication between themselves. The application of the mailbox rule is ruled out in this case as the eventuality of the acceptance leaving the offeree and being entrusted to a third party does not exist. This is the simplest form of online communication that does not pose much of a problem as the offer and the acceptance are generated and communicated between the companies which are located in the same place and in the same jurisdiction. In such case the contract is concluded at a place where both the offer and the acceptance is originated and communicated.

1.5.3 Consideration in online contracts:

"Ex nudo pacto non oritur action" means no action arises from a contract without consideration. Presence of consideration is another requisite to formulate a valid contract. According to Blackstone, "Consideration is the recompense given by the arty contracting to the other". Pollock defines consideration as, "the price for which the promise of the other is bought"

Sec 2(d) of Indian Contract Act defines consideration as follow:

[1] Bhagwandas Goverdhandas Kedia v. Girdharilal Parshottamdas & Co. AIR 1966 SC 543
[2] Entores Ltd. V. Miles Far East Corporation (1955) 2 All ER 493

"*When at the desire of the promisor, promisee or any other person has done or abstained from doing, or does or abstains from doing, or promises to do or to abstain from doing something, such act or abstinence is called a consideration for the promise"*

Consideration may consist of either actual performance such as delivery of goods or services or payment for them or a return promise. Although electronic commerce may involve novel methods of payment and delivery, as long as, a transaction includes a bargaining for exchange of adequately commensurate promises or performances, agreement will comply with the consideration requirement. Under sec 25 of Indian Contract Act there are certain exceptions to the requirement of consideration, one is when consideration is moved from only party it may formulate good consideration if another party is in near relation to first party i.e. gifts can be made without having consideration from both the sides. But in India gifts are regulated by deeds so question in online contracts is raised here in this regard.

1.5.4 Capacity to contract:

In online contract, the difficulty is that the competence of one party entering into a contract is almost unknown to the other party. The complex nature of online contracts makes it impossible for the person entering into a contract to know if the other contracting party is competent or not. In this situation parties to a contract being at a distance and the absence of face to face interaction makes it almost impossible for one party to ascertain the competencies of the other. The problem posed by this complexity of the communication is that of minors ordering goods or minors masquerading as adults. In this condition, law ought to raise a presumption that once an online contract is concluded, both the parties are presumed to be competent to do so. Neither party should be allowed to raise an objection at a later stage that the contract is unenforceable for want of competence on the part of one of the parties. The doctrine of Uberrimae Fidei must be strictly adhered to in case of online contracts. Doctrine of Uberrimae Fidei is a Latin expression, which literally means 'the utmost good faith'. A minimum standard that requires both the buyer and seller in a transaction to act honestly toward each other and to not mislead or withhold critical information from one another.

IT Act recognises three parties under online contracts:

- The Originator
- The Intermediary
- The Addressee

originator means "a person who sends, generates, stores or transmits any electronic message; or causes any electronic message to be sent, generated stored or transmitted to any other person but does not include any intermediary." Originator of data message means "the person by whom or on whose behalf, the data message purports to be sent or generated prior to storage, if any, but it does not include a person acting as an intermediary with respect to data message." simply we can say that the originator is the person who originates the data message i.e. creates stores or sends the data message.

Intermediary with respect to any particular electronic message means" any person who on behalf of any other person receives stores or transmits that message or provides any service with respect to that message". Intermediary, with respect to a particular person, sends, receives, or stores that data message or provides other services with respect to that data messages. Addressee means a person who is intended by the originator to receive the electronic record but does not include any intermediary".

Addressee of a data message means "a person who is intended by the originator, to receive the data message, but does not include a person acting as an intermediary with respect to that data message". Simply he is the person to whom the data message has been addressed that means to whom the data message has been sent by the originator and who received the message.

1.5.5 Mode of communication in online contracts:

The basic difference between paper contracts and online contracts is the mode of communication of offer/proposal and acceptance. If proposal is made by post, fax, telephone or face to face it can't be considered online contract. Use of electronic medium such as internet etc is prerequisite to constitute online contracts

1.6 Electronic Data Interchange (EDI):

Electronic Data Interchange has been accepted universally as a replacement for the traditional paper trading. In fact EDI transactions are also often referred to as the paperless trading. EDI has been defined as 'the computer to computer transmission of business data in a standard form'. EDI transactions now have legal sanctity in India and it is a foregone conclusion that valid and enforceable contracts can be formed, using Electronic Data Interchange. However, the inapplicability of the Information Technology Act to certain types of contracts which are required by existing law to be in writing and which also requires signature makes the scope for applicability of EDI narrow. In an EDI transaction, the persons entering into such transaction agree on the technology to be used for such communication by way of a separate agreement. Such an agreement is referred to as an 'umbrella agreement'.

1.7 Information Technology Act 2000 on online contracts:

The Information Technology Act, 2000 attempts at alleviation of some of the problems that arise out of communication over computer networks. Although electronic or online contracts are not specifically addressed by any statute in India, the omnibus provisions of the Information Technology Act provide a significant platform for interaction of the law and technology. By clothing electronic records and transactions with legal sanctity, the Act has facilitated online commercial transactions. Section 11 provides for the attribution of electronic records to the originator. This is a significant provision in view of the necessity to have provisions which prohibit a person from disowning electronic communications that originated from him. A mandate for non-repudiation is, after all, crucial for a contract to come into being.

Sec 11: An electronic record shall be attributed to the originator—

(a) if it was sent by the originator himself;

(b) by a person who had the authority to act on behalf of the originator in respect of that electronic record; or

(c) by an information system programmed by or on behalf of the originator to operate automatically.

Section 12 makes provisions for the acknowledgment of receipt of communication and the time at which such communication is received. These provisions go a long way in resolving some of the complications that arise out of communication over the Internet. Section 12 provides that where the originator of a communication has not agreed with the addressee of such communication, on the mode in which acknowledgment of receipt is to be given, the acknowledgment for receipt of such communication may be given by the addressee by any automatic or other communication or by the conduct of the addressee which is sufficient to indicate to the originator that such communication has in fact been received. However, this rule operates only in the absence of any contract between the parties as regards the acknowledgement of receipt. The parties are also at liberty to specify the time limit within which such acknowledgement of communication has to be made. If such acknowledgement is not communicated within a reasonable time, the originator of the message who has not received the acknowledgment is also at liberty to treat the communication as never having been sent.

Sec 12: (1) Where the originator has not agreed with the addressee that the acknowledgment of receipt of electronic record be given in a particular form or by a particular method, an acknowledgment may be given by—

(a) any communication by the addressee, automated or otherwise; or

(b) any conduct of the addressee, sufficient to indicate to the originator that the electronic record has been received.

(2) Where the originator has stipulated that the electronic record shall be binding only on receipt of an acknowledgment of such electronic record by him, then unless acknowledgment has been so received, the electronic record shall be deemed to have been never sent by the originator.

(3) Where the originator has not stipulated that the electronic record shall be binding only on receipt of such acknowledgment, and the acknowledgment has not been received by the originator within the time specified or agreed or, if no time has been specified or agreed to within a reasonable time, then the originator may give notice to the addressee stating that no acknowledgment has been received by him and specifying a reasonable time by which the acknowledgment must be received by him and if no acknowledgment is received within the aforesaid time limit he may after giving notice to the addressee, treat the electronic record as though it has never been sent.

Section 13 of the Act contains significant provisions which obviate certain problems of communication over computer networks. The controversy as to the applicability of the mailbox rule to communications on the Internet and the complications involved in the ascertainment of the conclusion of a valid contract appear to have been resolved, at least to a great extent, by the provisions of section 13. This section also operates only in the absence of a contract to the contrary between the parties. In other words, in the absence of an agreement to the contrary, the acceptance is despatched when such acceptance enters a computer resource outside the control of the originator. The marked difference in case of a contract governed by section 13 is that the point at which the acceptance is binding qua the offeree is not when it leaves his computer system and is outside his control but the point at which acceptance enters the computer resource beyond his control.

Sec 13: (1) Save as otherwise agreed to between the originator and the addressee, the despatch of an electronic record occurs when it enters a computer resource outside the control of the originator.

(2) Save as otherwise agreed between the originator and the addressee, the time of receipt of an electronic record shall be determined as follows, namely:—

(a) if the addressee has designated a computer resource for the purpose of receiving electronic records,—

(i) receipt occurs at the time when the electronic record enters the designated computer resource; or

(ii) if the electronic record is sent to a computer resource of the addressee that is not the designated computer resource, receipt occurs at the time when the electronic record is retrieved by the addressee;

(b) if the addressee has not designated a computer resource along with specified timings, if any, receipt occurs when the electronic record enters the computer resource of the addressee. (3) Save as otherwise agreed to between the originator and the addressee, an electronic record is deemed to be despatched at the place where the originator has his place of business, and is deemed to be received at the place where the addressee has his place of business.

(4) The provisions of sub-section (2) shall apply notwithstanding that the place where the computer resource is located may be different from the place where the electronic record is deemed to have been received under sub-section (3).

(5) For the purposes of this section,—

(a) if the originator or the addressee has more than one place of business, the principal place of business, shall be the place of business;

(b) if the originator or the addressee does not have a place of business, his usual place of residence shall be deemed to be the place of business;

(c) "usual place of residence", in relation to a body corporate, means the place where it is registered.

1.8 Revocation of offer in online contracts:

Section 5 of the Indian Contract Act, 1872 states the revocation of proposals and acceptance. A proposal may be revoked at any time before the communication of its acceptance is complete as against the proposer, but not afterwards. Under the UNCITRAL Model Law 1996 and the Information Technology Act, 2000 (2008) there are not specific provisions relating to rules for revocation of offer. However, after reading statutory provisions it is observed that the position is similar under the UNCITRAL Model Law 1996 and the IT Act, 2000 that states that the offeror is bound by an acceptance when he is in receipt of it. Therefore, if revocation of an offer enters the information system of the offeree before the offeror is in receipt of an acceptance, the revocation is binding on the offeree and no valid acceptance is considered to be made.

1.9 Revocation of acceptance in online contracts:

Section 5 of the Indian Contract Act, 1872 states the revocation of proposals and acceptance. An acceptance may be revoked at any time before the communication of the acceptance is complete as against the acceptor, but not afterwards. Under the UNCITRAL Model Law 1996 and the Information Technology Act, 2000 (2008) there are no specific provisions relating to rules for revocation of e-acceptance. However, after reading statutory provisions it is observed that the position is similar under the UNCITRAL Model Law 1996 and the IT Act, 2000 that states that an acceptance becomes binding on the offeree the moment the acceptance enters an information system outside the offeree's control.

1.10 Jurisdiction in case of dispute in online contracts:

Sec 13 of IT Act provides provision relating to ascertainment of place and time for conclusion of contract but this provision can be negated by an express agreement between the parties. For determining the jurisdiction of the court in a dispute arising between the contracting parties, it is necessary to know where the contract in question was concluded. The place of formation of the contract determines the jurisdiction of the court where breach of contract gives rise to a cause of action. General rule regarding the choice of jurisdiction is, if two or more courts are having jurisdiction in a particular case parties can make an agreement in which they can choose the jurisdiction of one from both. But it is remarkable to discuss here that one can't confer or take away the jurisdiction of a court which is other not capable or capable as the case may be to entertain a dispute.

1.11 UNCITRAL Model Law

In 1996, the United Nations came up with the UNCITRAL Model Law on E-Commerce. The model law aimed at providing regulatory framework for E-Commerce. This law encouraged member states to legislate various national laws and regulations keeping in with the principles contained in the Model Law. In 2001, the United Nations drew up the UNCITRAL Model Law on Electronic Signatures. As cyber law develops around the world,

there is a growing realization among different nation states that their laws must be harmonized and international best practices and principles must guide implementation. Many countries are trying to establish harmonized legal regimes in order to promote online commerce. As E-Commerce growth becomes more and more significant, countries such as India must not only address and appreciate its potential for the growth of trade and industry but also as a means of survival in the new world of E-Commerce-based trade and business. The ability to do so will depend on several factors, the most important of which will be infrastructure, both physical (the telecommunication network) as well as the financial and legal framework, including a business and trade environment conducive to E-Commerce. It is essential, therefore, to create a policy and regulatory environment that favours the development of E-Commerce and harmonises national approaches in diverse areas such as telecommunications, trade, competition, intellectual property, privacy, and security

1.12 Summary:

In this Unit we have learnt the concept of online contracts. How online contracts are different from traditional contracts. Requirements to formulate online contracts are also discussed. And this unit also provides idea about the regulation of online contracts.

1.13 SAQs

Short Answer Questions

a. What do you mean by online contracts
b. What do you understand by click wrap contracts
c. What are shrink wrap contracts
d. Describe consideration
e. Define proposal
f. Define acceptance
g. What is mailbox rule
h. What is electronic data interchange

Fill in the blanks

a. _____ means “a person who sends, generates, stores or transmits any electronic message.
b. no action arises from a contract without_____
c. Section _____ of the Indian Contract Act, 1872 states the revocation of proposals and acceptance.

True/ False

a. Uberrimae Fidei means of utmost good faith
b. Sec 4 of Indian Contract Act 1872 provides for mode of acceptance through internet
c. Addressee means a person who is intended by the originator to receive the data message

Terminal Questions and Model Questions:

1. Discuss UNCITRAL Model Law on E- Commerce.
2. Explain the procedure for the revocation of offer in e-contracts
3. How Information Technology Act 2000 is helpful in the regulation of online contracts?

1.14 References:

a. http://14.139.60.114:8080/jspui/bitstream/123456789/722/9/Online%20Contracts.pdf
b. http://elib.bvuict.in/moodle/pluginfile.php/183/mod_resource/content/0/Advantages%20of%20E-Contracts%20over%20Traditional%20Contracts%20-%20E-Contracts%20and%20E-Commerce%20in%20India%20-%20Vijaysinh%20Shashikant%20Pisal.pdf
c. http://www.wipo.int/edocs/lexdocs/laws/en/in/in024en.pdf
d. http://shodhganga.inflibnet.ac.in/bitstream/10603/107814/12/12_chapter%20v.pdf
e. R.K. Bangia, Law of Contract-I (ALA, Haryana, 2015)
f. http://shodhganga.inflibnet.ac.in/handle/10603/201570
g. http://shodhganga.inflibnet.ac.in/simple-search?query=e+contracts&go=

1.15 Suggested Readings:

1. Information Technology Act 2000
2. R.K. Bangia, Law of Contract-I (ALA, Haryana)
3. Avtar Singh, Law of Contract (Easatern Boo Company, Lucknow)

1.16 Answers:

Short Answer Question:

a. Refer to s.no 1.3
b. Refer to s.no 1.3.3 (a)
c. Refer to s.no 1.3.3. (c)
d. Refer to s.no 1.5.3
e. Refer to s.no 1.5.1
f. Refer to s.no 1.5.2
g. Refer to s.no 1.5.2.2 and 1.5.2.3
h. Refer to s.no 1.6

Fill in the Blanks:

a. Originator
b. Consideration
c. 5

True False:

a. True
b. False
c. True

Terminal Questions and Model Questions:

a. Refer to S.No 1.11
b. Refer to S. No. 1.8
c. Refer to S. No. 1.7

UNIT- 2

MAIL BOX RULE

2.1 INTRODUCTION

2.2 OBJECTIVES

2.3 MAIL BOX RULE

2.4 IMPLICATION AND VARIATION OF THE RULE

2.5 APPLYING THE MAILBOX RULE TO ELECTRONIC MAIL

2.6 DISADVANTAGES OF MAILBOX RULE

2.7 POINTS TO REMEMBER

2.8 GLOSSARY

2.9 CHECK YOUR PROGRESS

2.10 BIBLIOGRAPHY/REFERENCES

2.11 SUGGESTED READING

2.1 INTRODUCTION

When parties do not negotiate face-to-face, a key question becomes when things like acceptances, rejections and revocations take effect.

The general rule is that acceptances are effective on dispatch (when they are mailed). Everything else becomes effective when the offeror actually receives them.

This idea is codified by the "mailbox rule" which states that acceptance is effective on dispatch, even before the offeror has received it.

Mostly, it seems that the origin of the mailbox rule is in offer and acceptance analysis, a traditional approach used in contract law. It is used to determine if a corporation agreement has been made between two parties.

An agreement mainly comprises an offer by an indication of one person to another person. This is just an indication of the willingness of the person offering to get into a contract, on specific terms, without further negotiations. This offer and acceptance formula defines the moment of formation when the parties have agreed on a contract. This is the classical approach to forming a contract. The mailbox rule takes it ahead from this point.

In the law of contracts, the term "Mailbox Rule" or "Postal Acceptance Rule" refers to a rule that provides that a written acceptance of an offer is effective when deposited in mail. The mailbox rule does not apply, however, in cases where the offer specifically provides that its acceptance is not effective until the acceptance is received by the offeror.

2.2 OBJECTIVES

After successful completion of this unit, the learner will be able to-

- Know about mailbox rule
- Know about acceptance of Mailbox rule in electronic mail
- Know about advantages and disadvantages of mailbox rule

2.3 MAILBOX RULE

Under the general rule of contract law, which is widely accepted in most countries, acceptance of a contract is affirmed when the agreement is communicated.

The mailbox rule, simply put, states that if A and B decide to get into a legal contract and if they decide to communicate by mail, as soon as the confirmed reply is posted, from that point, the offer is said to be accepted.

Of course this is valid, as long as mailing is held by both parties, as a reasonable form of reply. Apart from proper legal contract, this rule also applies to payment of insurance premium in some cases. When the individual offering or initiating the contract chooses the postal service as an implied agent, the receipt of acceptance provided by the post is considered to be that of the person being offered the contract.

The "mailbox rule" is also known as the "mailbox posting rule" or "posting rule." When a letter (or contract or notice, etc.) is mailed, the rule determines when the letter is deemed "delivered" regardless of when it actually arrives at the other end.

Definition

"Mailbox rule is a rule treating the sending of something as constituting a filing or as a basis for assuming receipt"

Or

"Mailbox a rule in contract law: a notice of acceptance of an offer sent to the offeror by reasonable means or as agreed by the parties are effective and are not affected by any notice of revocation of the offer subsequently received"

The mailbox rule applies to offer and acceptance in contract law. This common law practice, by default, states that when an offer or acceptance reaches the mailbox, it means a legitimate offer has been extended or the offer has been accepted.

What Exactly Does Offer and Acceptance Mean?

Sometimes a mailbox is more than just a mailbox. In contract law, the mailbox can represent the meeting of the minds that binds two parties together in a contractual agreement without ever meeting in person.

In contract law, this is known as the mailbox rule, or, offer or acceptance is valid once it is placed in the mailbox. Of course, there are several other elements that must be present for a contract to be valid:

- Offer by the offeror
- Acceptance by the offeree
- Mutuality, or meeting of the minds
- Consideration, or exchange of one thing of value for another
- Capacity, or competency of offeror and offeree
- Legally accepted contract terms

WHAT MAKES EFFECTIVE MAILBOX RULE?

- **Effective Time of Acceptance-Dispatch or Receipt?**

  Generally speaking, a contract is a promise made between two entities that the law will enforce. A promise is usually brought into completion through the process of offer and acceptance: an offeror makes an offer to an offeree, who subsequently accepts the offer. Acceptance by the offeree is the last step in contract formation-it

creates obligations where they did not previously exist. The acceptance itself, therefore, has been the subject of much discussion and controversy.

One aspect of the acceptance that deserves special scrutiny is its timing. Assuming that the content of the acceptance is satisfactory, at what point in time does it become effective? When does that magic moment arise where two entities become legally bound to conduct certain affairs in a particular manner? Since dispatch of the acceptance by the offeree is distinct from receipt of the acceptance by the offeror, a controversy is created as to which of these two events should denote the formation of a contract.

- **Face-to-Face Communication-Receipt Required**

  Indeed, in the context of the simplest form of communication, face-to-face correspondence, the law follows the intuitive preference described above, and a contract is formed only upon actual receipt of the acceptance by the offeror. At first glance, one might not see "dispatch" of the acceptance--the words being spoken by the offeree-as being distinct from "receipt" of the acceptance-the words being heard and understood by the offeror-but various complications bring out the distinction. For example, the offeree may utter the acceptance in a low tone of voice, or a loud airplane may pass overhead while the acceptance is leaving the offeree's mouth, such that it is not heard by the offeror. In such cases, a contract has not been formed-though the offeree has dispatched an acceptance; it has not been received by the offeror.

- **Communication by Post and the Birth of the Mailbox Rule-Mere Dispatch Required**

  This straightforward analysis is complicated when the contracting parties are not in the presence of each other, but are at a distance. For the moment, consider the case where the offeree mails an acceptance to the offeror. Unlike where the parties are in the presence of each other, the offeree in this scenario has no ability to ensure that the offeror "heard" the acceptance. In fact, the offeree has no way of ascertaining when, if ever, the offeror receives the acceptance. Consequently, the burden of communication must be placed on one of the parties, meaning that there will be a period of time during which one of the parties is unaware of the existence of a contract. If mere dispatch forms a contract, the offeror will be unaware of the existence of a contract from the time the offeree dispatches the acceptance until the time the offeror receives it. In the worst case scenario, the acceptance will never be received, and the offeror will learn of the contract only upon some further communication by the offeree. Much damage may have been done by this time. The offeror may have already breached the contract (having been unaware of its existence), in which case it may be a summons and complaint that brings news of the existence of the contract, or the offeror may have contracted elsewhere, rationally believing that the offeree was uninterested in the offer.

- **"Substantially Instantaneous Two-Way" Forms of Communication-Treat as Face-to-Face**

  In determining whether a method of communication is more similar to face-to-face communication than to the post, a mere intuitive analogy proves unsatisfactory. Rather, a more structured framework for analysis is required-one which identifies the particular characteristics of face-to-face communication that distinguish it from the post and make it amenable to the receipt rule. Such a framework has been provided by the drafters of the Restatement: "Acceptance given by telephone or other medium of substantially instantaneous two-way communication is governed by the principles applicable to acceptances where the parties are in the presence of each other."

  In [two-way] communication, one party can determine readily whether the other party is aware of the first party's communications, through immediate verbal response or, when the communication is face-to-face, through nonverbal cues. When the communication is not instantaneous and is not face-to-face, there is much greater uncertainty as to whether the other party is aware of a particular communication."

2.4 IMPLICATIONS AND VARIATIONS OF THE RULE

Let me warn you that this is going to be a tad bit confusing. Let's take an example for the mailbox rule. It goes like this -

- ***Day 1:*** Ram makes an offer to Shyam.
- ***Day 2:*** Shyam wants rejects the offer by posting a contract cancellation letter in the mail to Ram saying that he is rejecting the offer.
- ***Day 3:*** Now a complication arises and Shyam overturns his decision to reject the offer, and sends a fax to Ram saying he is accepting it.

Now if there is such an ambiguous situation, whichever communication with Ram, happened first, will be held valid. In this scenario, if Shyam's letter of acceptance does not reach Ram before the rejection, it is going to be his bad luck. On the whole, the implications depend on whichever communication reaches first.

This is what the mailbox rule is all about. It decides what happens in case the person being offered the contract accepts or rejects it, or even changes the decision.

Although this is termed as the posting or mailbox rule, as with changing times and technological advancement, this rule has been modified to include all the possible modes of communication, with which commercial or business communication can be fairly conducted.

2.5 APPLYING THE MAILBOX RULE TO ELECTRONIC MAIL

Another problem faced by the courts was the introduction of computers. Contracts created over the internet, for example a CD bought from an online shop, are seen as quite similar to a transaction in a shop. The item on the webpage is seen to be an invitation to treat, the

customer then puts the items in there virtual basket and proceeds to checkout where they give their credit card details to the seller, this constitutes an invitation to buy; this makes the transaction similar, the website only then displays a confirmation of order, the acceptance is often only communicated by dispatch of the goods themselves. The contracts between consumers and businesses selling through websites is expressly governed in this way by The Electronic Commerce (EC Directive) Regulations 2002 which implies that the 'receipt' rule is effective in internet contracting by stating the order/acknowledgment of the order 'will be deemed to be received when the parties to whom they are addressed are able to access them'. The mailbox rule therefore does not apply as internet contracting is held to be a method of instantaneous communication, the regulations are a form of primary legislation which means parliament preferred the 'receipt' rule over the 'dispatch rule' in this situation.

The scope of The Electronic Commerce (EC Directive) Regulations does not extend to email, this has caused some problem in defining whether an email is 'instantaneous' or 'non-instantaneous'; and as mentioned above the former is beyond the scope of the postal rule (mailbox rule). There is an argument for this from a technical perspective, the average person may regard email as just as instantaneous as a fax or tele-text, however an email is not sent directly between the two devices; instead it is transferred through a server.

As an argument on can say that "Email messages are exchanged independent of each other, without establishing a simultaneously contiguous end-to-end traffic path between the contracting parties, it is technically incorrect to describe Email as instantaneous, thus on this basis surely the postal rule should apply to electronic mail."

When applying the mailbox rule to email communications, there is no difference between sending an acceptance letter via "snail mail" and sending it via email. The end result is the same: the acceptance letter must be marked and served timely and correctly. The key here is documentation of the date and time the acceptance was sent – whether by a postmark, or by a sent receipt from a fax or email.

Some countries have different rules when applying the mailbox rule to email communications. The best way for potential parties to a contract to learn about applying the mailbox rule to email communications is to simply look into whether it is permissible within the state where the deal is being made.

2.6 DISADVANTAGES OF MAILBOX RULE

Main concerns of mailbox rule / posting rule are -

- ***The Telex Cases***

  In the case of Telex communications (which do not differ in principle from the cases where the parties negotiating a contract were actually in the presence of each other) there can be no binding contract until the offeror receives notice of the acceptance from the offeree.

  So here there are indications that what matters is the "instantaneousness" of communications, and communications which "do not differ in principle" from those

which are inter-presented. As telex clearly was not actually "instantaneous", and there was no indication of what made a telex the same "in principle" as communication inter-presented, when plainly it differed from it in many ways, in themselves, these points were not very helpful.

- ***The Revocation Issue***

The revocation issue should now be addressed as a basis of the postal (mailbox) rule, and offers are generally revocable at common law, even if it has been stated that they will remain open for a set time.

- ***Risk of a Lost or delayed Acceptance***

The risk of an acceptance being lost, or delayed, without the fault of either party, falls on the offeror under the postal rule. If there is fault involved in such loss or delay occurring, then the risk should lie with the party at fault.

In the interests of simplicity and clarity, the rule has been extended to cases where an acceptance is lost or delayed in the course of transmission. The convenience of the rule is less clear in such cases than in cases of attempted revocation of the offer.

2.7 POINTS TO REMEMBER

- The posting rule (or mailbox rule in the United States, also known as the "postal rule" or "deposited acceptance rule") is an exception to the general rule of contract law in common law countries that acceptance of an offer takes place when communicated.
- The main effect of the mailbox rule is that the risk of acceptance being delivered late or lost in the post is placed upon the offeror.
- The posting rule, also known as a mailbox rule, is used to decide the time that an offer has been accepted, which is an important component of contract law.
- Although there is no law related to the issue, postal rules will generally apply to contracts offered by email, meaning as soon as the acceptance is sent, the contract is binding.

2.8 GLOSSARY

- **Offeree –** The person to whom an offer of a contract is extended, who can then accept or reject that offer.
- **Offeror –** A person who makes an offer to another person, thereby establishing a contract.
- **Plaintiff –** A person who brings a legal action against another person or entity, such as in a civil lawsuit, or criminal proceedings.

- **Trial –** A formal presentation of evidence before a judge and jury for the purpose of determining guilt or innocence in a criminal case, or to make a determination in a civil matter.

2.9 CHECK YOUR PROGRESS

Short Answer type Questions –

1. Define Posting/ Mailbox rule.
2. How can offeror avoid mailbox rule?
3. Does the mail box rule apply to email? Explain.
4. Does postal rule apply to offers?
5. What are the disadvantages of mailbox rule?

Multiple type Questions –

1. Mailbox rule is also known as
   a) Posting rule b) Internet rule
   c) Email rule d) all of above

2. Mailbox rule is found in the areas of
   a) Contract Law b) Defence Law
   c) Both (a) & (b) d) None of above

3. A person who makes an offer to another person, thereby establishing a contract.
   a) Offeror b) Offeree
   c) Trial d) None of the above

4. The ordinary postal system as opposed to email
   a) Snail Mail b) Post-mail
   c) Secured-mail d) All of above

5. Mailbox rule first established in
   a) 1900 b) 1818
   c) 1950 d) None of the above

Terminal Question –

1. Define posting rule in detail with examples.
2. How posting rule is applicable to electronic mail? Explain.
3. Define risk of lost or delayed acceptance.
4. What are the disadvantages of mailbox rule?

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UNIT- 3

JURISDICTION ISSUES IN E-COMMERCE

3.1 INTRODUCTION

3.2 OBJECTIVES

3.3 GROWTH OF E-COMMERCE

3.4 E-CONTRACT

3.5 LAWS APPLY ON E-CONTRACT IN INIDA

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3.1 INTRODUCTION

India is witnessing a digital revolution within a techno-commercial environment known as E-Commerce. This evolution which is characterised by exponential change has successfully created business opportunities for millions and is continuously redefining our economy. In a world made of clearly defined physical boundaries of states, the internet is multi-jurisdictional and boundary-less. E-commerce raises the issue by the fact that one or more of the parties involved in the commercial activity may be located in different jurisdictional areas.

Not only do uncertainties arise, as to where commercial activities are taking place, but the activities themselves can have intended and unintended consequences all over the world. This eventually results in uncertainty when it comes to localizing the dispute, identifying the law which is applicable as well as the practicalities of the issue itself. E-commerce involves more than two or more parties to a single transaction, it can be said that disputes are inevitable in the course of the life of such a business, whether online or offline .The business disputes which the enterprise may come across in e-commerce can be contractual like B2B and B2C or non-contractual like copyright dispute, defamation, etc. Henceforth, it is noteworthy that many of the issues such as jurisdictional issues, choice of law issue, high cost of cross-jurisdictional litigation issue, can arise in relation to the diverse categories of disputes. In this chapter we highlighted the various jurisdictional issues while deciding disputes in ecommerce & also the present legal framework in India governing e-commerce in cyberspace.

3.2 OBJECTIVES

After successful completion of this part, the learner will be able to-

- Know about E-commerce growth
- Know about e-contract
- Know about E- commerce jurisdiction issues
- Know about various consumer protection laws
- Know about role of international bodies in E-commerce

3.3 GROWTH OF E-COMMERCE

E-commerce has received huge popularity because of the automation technique used by it. Due to ease in transactions, the number of e-consumers is growing at high rate and within a very short period it will defeat physical consumer. Today, e-commerce is affecting business. Electronic business not only exchanges information between buyers and sellers of goods, but also provides support and services to consumers. More consumer demands appear on the Internet than any other mediums today. It demonstrates that the internet has a huge potential to grab many customers in a short amount of time, which in turn can become a

target market or growing firms. Internet has changed the economy so much that most of the business activities today are carried out online.

Electronic commerce has now been on the scene for around three decades, and in that period it has transformed the processes of buying and selling goods. Its continued increase is changing the nature, timing, and technology of business-to-business (B2B) and business-to-consumer (B2C) commerce, influencing pricing, product availability, inventory holding, transportation patterns, and consumer behaviour in developed economies worldwide.

Business-to-business electronic commerce accounts for the vast majority of total e-commerce sales and plays a leading role in global supply chain networks. Its rise over the past 20 years has been rapid. In 2003, approximately 21.0% of manufacturing sales and 14.6% of wholesale sales in the United States-the vast majority of which constitute B2B trade-were conducted via e-commerce. By 2016, e-commerce had taken over, making up 64.8% of manufacturing and 32.4% of wholesale sales. Although online shopping gets the most popular attention, e-commerce retail sales are dwarfed by electronic sales in both the manufacturing and wholesale sectors. Of the sum of these three, manufacturing e-commerce makes up 56% of e-commerce sales, wholesale makes up 38%, and retail sales account for a mere 6%.

Although it started relatively behind, e-commerce retail sales is playing catch-up and its growth has outpaced that of the wholesale and manufacturing sectors for 12 of the 14 years leading up to 2016. Between 2003 and 2016, retail e-commerce has averaged 17.0% annual growth, compared with 7.3% and 12.2%, respectively, for wholesale and manufacturing. In the first quarter of 2018, seasonally adjusted e-commerce retail sales grew 16.4% year on year. The share of retail sales conducted by e-commerce in 2016 was only 14.5% even when excluding sales at auto and auto parts dealers, gas stations, food and beverage stores, and restaurants-still a far cry from manufacturing's 64.8% share. But this share is rising rapidly; most recently, in the first quarter of 2018, it jumped to 17.1%. The retail e-commerce revolution is being boosted by categories of goods that have traditionally been left behind; the food and beverages category, in particular, is seeing its still-small online presence expand quickly, thanks in part to Amazon's purchase of Whole Foods.

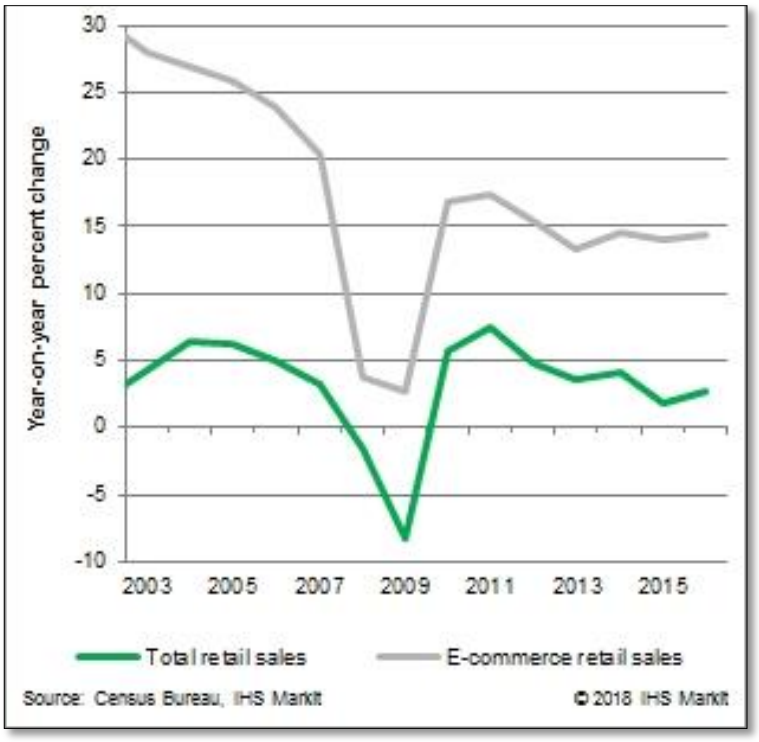

Fig 3.1 Comparison between retail & e-commerce retail sales

With e-commerce accounting for only 8.0% and 4.2% of retail sales and sales of services, respectively, the B2C electronic revolution still has far to go. On the B2B side, more than half of manufacturing sales are already conducted electronically; the process is much farther along. However, for both sectors, the broad shape of the consequences is clear: lower prices for goods; deeper, more efficient, and more competitive markets; and disruption for businesses that are left behind.

3.4 E-CONTRACT

E-contract is a contract modelled, specified, executed and deployed by a software system. E-contracts are conceptually very similar to traditional (paper based) commercial contracts. Vendors present their products, prices and terms to prospective buyers. Buyers consider their options, negotiate prices and terms (where possible), place orders and make payments. Then, the vendors deliver the purchased products. Nevertheless, because of the ways in which it differs from traditional commerce, electronic commerce raises some new and interesting technical and legal challenges.

Processes available for forming electronic contracts include:

I. E-mail: Offers and acceptances can be exchanged entirely by e-mail, or can be collective with paper documents, faxes, telephonic discussions etc.

II. Web Site Forms: The seller can offer goods or services (e.g. air tickets, software etc.) through his website. The customer places an order by completing and communicating the order form provided on the website. The goods may be actually delivered later (e.g. in case of clothes, music CDs etc.) or be directly delivered electronically (e.g. e-tickets, software, mp3 etc.).

III. Online Agreements: Users may need to take an online agreement in order to be able to avail of the services e.g. clicking on "I accept" while connecting software or clicking on "I agree" while signing up for an email account.

Essentials of an electronic contract:

As in every other contract, an electronic contract also requires the following necessary requirements:

- An offer requirements to be made
- The offer needs to be acknowledged
- There has to be legal consideration
- There has to be an intention to create lawful relations
- The parties must be able to contract.
- There must be free and unaffected consent
- The object of the contract need to be lawful
- There must be conviction and possibility of performance

3.5 LAWS APPLY ON E-CONTRACT IN INIDA

Several laws acting in unification are trying to regulate the business transactions of E-contract. They are as follows:

- ***Indian Contract Act,1872***
- ***Consumer Protection Act,1986***
- ***Information Technology Act,2000***
- ***Indian Copyright Act,1957***

Like any other types of business, E-contract business also works on the basis of contracts. It is therefore, structured by the Indian Contract Act, 1872. Any valid and legal E-contracts can be designed, completed, and enforced as parties replace paper documents with electronic parallels. The contracts are move in between the service providers or sellers and buyers.

Earlier, there was no definite law to regulate the intermediaries such as verification service providers and shipping service providers to safeguard that the product or service is actually delivered. However, the government has recently acquainted the Information Technology (Intermediaries Guidelines) Rules 2011. The actual scope of the security provided under these regulations would only be known after judicial interpretation of the provisions. However, now it has been explained that even foreign intermediaries delivered to provide service can be sued in India.

The payment gateways which footing a very important position as the primary processor of the payment for the merchants were brought into the legal framework after proclamation of the Payment and settlement Systems Act, 2007 (PSS Act, 2007). The PSS Act, 2007 as well as the Payment and Settlement System Regulations, 2008 made under the Act came into effect from August 12, 2008. Further, the Reserve Bank of India, issued additional guidelines initiating all such gateways and payments processors to register under the said act.

The authority of the transactions of E-contract is established under the Information Technology Act, 2000 (IT Act, 2000). It explains the reasonable mode of acceptance of the offer. IT Act, 2000 also rules the revocation of offer and acceptance. However, definite provisions that regulate E-contract transactions conducted over the internet, mobile phones, etc. are vague. With numerous cross border transactions also being conducted over the internet, specific law guarding the Indian customers and Indian businesses are essential and Indian laws are gravely insufficient on this issue.

In a bid to safeguard security, the government has made digital signatures necessary in several E-contract transactions mainly in the government to government (G2G) or government to business (G2B) framework with a view to safeguarding the identity of the transacting parties. E-contracts transactions on these modes require digital signatures as essential parts. They are used for the verification of the electronic contracts. These are controlled by the IT Act, 2000 which provides the outline for digital signatures, their issues and verification.

3.6 JURISDICTION ISSUES IN E-COMMERCE

A. Contract

At the heart of e-commerce is the need for parties to be able to form valid and legally binding contracts online. How e-contracts can be formed, performed, and enforced as parties replace paper documents with electronic media.

1) Offer and Acceptance: The Information Technology Act, 2000 ("IT Act") deals with contractual aspects of use of electronic records, such as attribution, acknowledgement, time and place of dispatch and receipt. However, since the IT Act is only an enabling Act, it is to be read in conjunction with the Indian Contracts Act, 1872 ("Contract Act"). Formation of any contract, under the Contract Act, would involve three main ingredients.

a) An offer,

b) An acceptance and

c) Consideration for the contract.

These ingredients would be applicable to e-contracts. Additionally, Internet communication does not consist of a direct line of communication between the sender and receiver of e-mail as in ordinary means of communication. The message is broken into chunks in the process of delivery. This raises issues of the exact time of communication of acceptance of the contract as such a time is critical for determination of the rights of the parties. The IT Act has laid down certain methods for determining the exact time and place of dispatch and receipt of the e-mail

2) Online Identity: Transactions on the Internet, particularly consumer-related transactions, often occur between parties who have no pre-existing relationship, which may raise concerns of the person's identity with respect to issues of the person's capacity, authority and legitimacy to enter the contract. Digital signatures, is one of the methods used to determine the identity of the person. The regulatory framework with respect to digital signatures is governed by the provisions of the IT Act.

3) Security: Security over the Internet is of vital importance to promote e-commerce. Companies that keep sensitive information on their websites must ensure that they have adequate security measures to safeguard their websites from any unauthorized intrusion. A company could face security threats externally as well as internally. Externally, the company could face problems from hackers, viruses and Trojan horses. Internally, the company must ensure security against its technical staff and employees. Security can be maintained by using various security tools such as encryption, firewalls, access codes / passwords, virus scans and biometrics.

For example, a company could restrict access to the contents on its website only through the use of a password or login code. Similarly confidential information on websites could be safeguarded using firewalls that would prevent any form of external intrusion. Apart from adequate security measures, appropriate legal documentation would also be needed.

4) Authentication: Different authentication technologies have evolved over a period of time to ensure the identity of the parties entering into online transactions. However, there are some issues that need to be considered by companies.

5) Digital Signatures to be used as authentication tool: According to the IT Act, digital signatures should be used for the purposes of authenticating an electronic contract. The digital signature must follow the Public Key infrastructure.

6) Privacy and Data Protection: Every e-commerce website is to maintain the privacy of its users. Use of innovative technologies and lack of secure systems makes it easy to obtain personal and confidential information about individuals and organizations. Privacy concerns have also been raised regarding the Internet Corporation for Assigned Names and Numbers, which is a publicly searchable resource used to determine the identity of domain name registrants. The database includes the name of the individual or company that registered a given domain name, as well as the owner's address, the dates on which the domain was created, when it expires and when it was last updated. Privacy groups criticized the company for selling information about its registrants, arguing that many of them are individuals who never agreed to having their information sold as a commodity when they signed up for the service.

7) Some of the important privacy concerns over the Internet include:

a) Dissemination of sensitive and confidential medical, financial and personal records of individuals and organizations;

b) Sending spam (unsolicited) e-mails;

c) Tracking activities of consumers by using web cookies; and

d) Unreasonable check and scrutiny on an employee's activities, including their email correspondence.

B. Intellectual Property Rights

Any company intending to commence e-commerce activities should bear in mind is the protection of its intellectual assets. The Internet is a boundless and unregulated medium and therefore the protection of intellectual property rights ("IPRs") is a challenge and a growing concern amongst most e-businesses. The existing laws in India that protect IPRs in the physical world, the efficacy of these laws to safeguard these rights in e-commerce is uncertain. Some of the significant issues that arise with respect protecting IPRs in ecommerce are discussed here under:

1) Determining the subject matter of protection: With the invention of new technologies, new forms of IPRs are evolving and the challenge for any business would be in identifying how best its intellectual assets can be protected. For example, a software company would have to keep in mind that in order to patent its software, the software may have to be combined with physical objects for it to obtain a patent.

2) Ascertaining novelty originality: Most intellectual property laws require that the work / mark / invention must be novel or original. However, the issue is whether publication or use of a work invention mark in electronic form on the Internet would hinder a subsequent novelty or originality claim in an IPR application for the work / invention / mark. An ecommerce company would have to devote attention to satisfying the parameters of intellectual property protection including originality requirements in its works to preclude any infringement actions from third parties who own similar IPRs.

4) Enforcing IPRs: It is difficult to adjudicate and decide cyber-disputes. The Internet makes the duplication, or dissemination of IPR- protected works easy and instantaneous and its anonymous environment makes it virtually impossible to detect the infringer. Moreover, infringing material may be available at a particular location for only a very short period of time. A company must also keep in mind that since IPRs are inherently territorial in nature, it may be difficult to adjudge as to whether the IPR in a work or invention is infringed, if it is published or used over the Internet, which is intrinsically boundless in nature. The electronic copyright management systems and other digital technologies evolving to prevent infringement, the recent World Intellectual Property Organization Copyright Treaty explicitly mandates that all contracting parties to the treaty shall have to provide adequate legal remedies against actions intended to circumvent the effective technological measures that may used by authors to prevent infringement of their works.

5) Preventing unauthorized Hyper linking and Meta tagging: The Courts are fighting with issues concerning infringement of IPRs arising from hyper linking and Meta tagging activities. Courts in certain jurisdictions held that Hyper linking, especially deep-linking may constitute copyright infringement, whereas Meta tagging may constitute trademark infringement.

6) Protection against unfair competition: Protection against unfair competition covers issues relevant for electronic commerce. Companies on the Internet, have to constantly adapt to and use the particular technical features of the Internet, such as its interactivity and support of multimedia applications, for their marketing practices. Problems may arise with regard to the use of certain marketing practices such as:

a) Interactive marketing practices

b) Spamming and

c) Immersive marketing.

C. Domain Names

A company that commences e-commerce activities would first have to get its domain name registered. While registering domain names, if the company chooses a domain name that is similar to some domain name or some existing trademark of a third party, the company could be held liable for cybersquatting. Over the past few years, domestic and international forum have handled and decided numerous cybersquatting disputes.

D. Other jurisdiction Issues in E-Commerce

Content Regulation: The Internet offers a quick and cost-effective means of disseminating information. However, the unrestricted flow of content over the Internet through different jurisdictions could raise various concerns. While traditionally there are several restrictions placed on the content of information that is distributed, the challenge lies in evolving similar parameters to regulate the content of information on the Internet. Some issues that e-commerce companies should bear in mind while publishing or displaying content should be as follows:

a) Nature of Content

b) Violation of the Statutory Law

c) Licensing framework

d) Imposition of Liability

Advertisement: Many websites advertise goods or services to customers. The traditional laws of advertising, which apply to ordinary sales, are enacted in the interest of all consumers to prevent deceptive and unfair acts or practices. These laws would also be applicable to advertising or marketing on the Internet. The websites may be subject to any liability that may arise due to false designations, origin, misleading description of fact that are likely to cause confusion or misrepresent the nature, characteristics, quality or geographic origin of the goods or services that are offered for sale in an advertisement. In addition to advertising laws, depending on the kind of business, the websites would also have to comply with the laws of applicable to such a business.

Electronic Payment Issues: The growth in e-commerce activities has necessitated the evolution of electronic payment mechanisms. In addition to normal currencies, e-financial instruments / digital currencies such as cyber cash and e-cash can be used for the purchase of current as well as capital assets over the Internet and for carrying on other commercial activities. Before regulating the use of such financial instruments, it would be essential to identify the issues that these instruments pose. Some of these issues are:

a) Secure Credit Card Transactions

b) Recognition of digital currencies

c) Determining the relevant jurisdiction

d) Risk of Regulatory Change

e) Consumer-oriented risks

f) Disabling IT Act

g) No virtual banks

Foreign Direct Investment: Indian Government has liberalized foreign direct investment in India. As per the Foreign Exchange Management Act, 1999, FDI is allowed on an automatic basis, (i.e. without any prior approval of the Ministry of Commerce and Industry) up to a certain limit or fully, in most sectors. In July 2000, vide Press Note No. 7 (2000 Series), the

Government has also allowed 100% FDI in e-commerce activities. However, this investment is subject to the following conditions:

a) FDI is allowed only in companies engaged in B2B ecommerce activities and not in retail trading; and

b) 26% of the FDI has to be divested in favour of the Indian public within a period of five years, if the companies are listed in other parts of the world.

3.7 CONSUMER PROTECTION

In India, the interests of the consumers and their rights are protected by the Consumer Protection Act, 1986. The purpose of this act is to ensure that all customers get what they deserve or are promised. It ensures that the consumers aren't cheated by enterprises by checking unfair trade practices, defects in goods and deficiency in services in India. Its jurisdiction extends to all services, products or suppliers in the public or private sector including banks, education, life and general insurance, health services, retailers etc.

According to Section 2(1) (d) of the Consumer Protection Act, a 'consumer' is any person who buys or hires any goods or services for a price. According to Section 2(1) (b), a 'complaint' can be filed by:-

- A consumer;
- The legal heir or representative of a consumer in case of the consumer's death;
- A group of consumers having the same concern;
- A voluntary consumer association;
- The Central or State governments.

According to Section 2(1) (c) of the Act, a 'complaint' or allegation can be filed on the following grounds:-

- Unfair or restrictive trade practise adopted by any trader;
- The goods bought or agreed to be bought being defective;
- The services hired or availed or agreed to be hired or availed being defective;
- Charging prices exceeding a fixed price for goods or services;
- Goods being hazardous to life and safety.

Hence, the consumers can file complaints on the above grounds under the Indian Consumer Protection law.

The Indian Consumer Protection laws, backed by the International guidelines are able to protect consumers in e-commerce even in the absence of explicit laws concerning online transactions. In this respect, the person making the purchase or transaction online would qualify as the consumer and would be able to bring a suit against any online shopping portal as the dealer under any of the above mentioned grounds.

3.8 POINTS TO REMEMBER

- Ecommerce, also known as electronic commerce or internet commerce, refers to the buying and selling of goods or services using the internet, and the transfer of money and data to execute these transactions.
- E-contract is a contract modelled, specified, executed and deployed by a software system. E-contracts are conceptually very similar to traditional (paper based) commercial contracts.
- There are several laws acting in unification are trying to regulate the business transactions of E-contract.
    - *Indian Contract Act,1872*
    - *Consumer Protection Act,1986*
    - *Information Technology Act,2000*
    - *Indian Copyright Act,1957*

3.9 GLOSSARY

- **Electronic -** Relating to technology having electrical, digital, magnetic, wireless, optical, electromagnetic, or similar capabilities.
- **Electronic commerce -** Any "transaction conducted over the Internet or through Internet access, comprising the sale, lease, license, offer, or delivery of property, goods, services, or information, whether or not for consideration, and includes the provision of Internet access."
- **Message -** A digital representation of information intended to serve as a written communication.
- **Electronic Data Interchange (EDI) -** The process of sending a message across a network in order to perform financial transactions.
- **Shopping Cart -** refers to the portion of an ecommerce site that maintains a list of the products chosen by a visitor to a purchase. Can be stand alone or part of an ecommerce solution.

5.10 CHECK YOUR PROGRESS

Short Answer type Questions –

1. What is E-commerce? Explain briefly.
2. Define E-contract.
3. What are the laws governing e-contract in India? Name them
4. What do you understand by consumer protection? Explain
5. Explain two jurisdiction issues found in e-commerce transaction.
6. Explain *Advertisement* issue of jurisdiction.

Multiple type Questions –

1. E-business stands for
   a. Electronic business b. Electron business

c. Electric business d. All of the above

2. .....is the encompassing term that involves the use of electronic platforms - intranets, extranets and the Internet - to conduct a company's business.
   a. E-commerce b. E-marketing
   c. E-procurement d. E-business

3. What is an arrangement made between e-commerce sites that direct users from one site to the other?
   a. Spam b. viral marketing
   c. Affiliate programs d. None of the above

4. The combination of technical and legal means for protecting digital content from unlimited reproduction without permission is known as
   a. Digital rights management b. Digital protection schemes
   c. Digital distribution regulation d. Digital rights protection

Terminal Question –

1. Explain historical development of E-commerce in detail.
2. What is different jurisdiction issues found in e-commerce? Explain.
3. Describe consumer protection laws in India.
4. What are the issues in electronic payment? Explain in detail.

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UNIT- 4

ELECTRONIC DATA INTERCHANGE (EDI)

2.12 INTRODUCTION

2.13 OBJECTIVES

2.14 WHAT IS MEANT BY EDI?

2.15 TYPES OF EDI

2.16 BENEFITS OF EDI

2.17 POINTS TO REMEMBER

2.18 GLOSSARY

2.19 CHECK YOUR PROGRESS

2.20 BIBLIOGRAPHY/REFERENCES

2.21 SUGGESTED READINGS

4.1 INTRODUCTION

E-commerce is the process of buying and selling of goods and services, or the transmitting of funds or data, over an electronic network (Computer Network or Internet). In other words e-commerce refers to the paperless exchange of business information using various electronic mediums. These business activities/transactions occur either as business-to-business (B to B), business-to-consumer (B to C), consumer-to-consumer (C to C) or consumer-to-business (C to B). In respect to e-commerce, some of the popular ways of transmitting information using- electronic Data Exchange (EDI), electronic Mail (e-mail), electronic Bulletin Boards, electronic Fund Transfer (EFT), and etc.

Electronic Data Interchange (EDI) is the electronic interchange of business information using such an electronic medium in a standardized format. In today's business era many business documents are exchanged using EDI. EDI can be a great deal of help to small, midsized and large businesses that are seeking to automate their order processing and invoicing systems. From reduced workforce costs with increased accuracy.

4.2 OBJECTIVES

After successful completion of this unit, the learner will be able to-

- Know about Electronic Data Exchange.
- Types of Electronic Data Exchange.
- Benefits of Electronic Data Exchange.

4.3 WHAT IS MEANT BY EDI?

EDI is a direct machine-to-machine communication which enables the automated exchange of electronic documents, avoiding the need for manual processing. Electronic Data Interchange (EDI) is the inter-company, computer-to-computer communication of business transactions in a standard format where less or no human interventions are required. Although transferring PDF* files (or any other file format which is used for transferring data between computer networks) are electronic files that are exchanged by computer networks, but they do not have a standardised structure and are therefore we cannot say EDI messages. Sending a PDF file (or any other electronic file) by email requires human intervention– to create and send the file on one side and then for the receiver end, to open it and process the information it contains.

Long years back, commerce has been based upon the movement of written documents. These documents contained the information that one company needed to convey to another company in order to do business. Over a period of time the documents started to take on standard names such as Invoice, Credit Note, purchase order, etc. However, the documents were certainly not of any standard layout. Because the recipient of all kinds of document was always a human being and humans have the ability to read, interpret and rationalise. In 1950s, computers started to be used by large companies for their accounting and payroll needs. Throughout the following decades, computers rapidly took over task after task until they were involved not only in accounting, but in production, administration and

all other areas of commerce. But one thing did not change. The computers still produced printed documents in various non-standard formats. This situation was not too bad for those sending a document but was much worse for the receiver. Many documents must be sent from one company's computer to their trading partner's computer. Computers cannot easily read written documents, and getting them to understand what they have just read is an almost impossible task, so the receiving company would have to employ personnel to re-key the information from the received documents into the company's computer system. The time factor was also a problem. The company sending the document had printed it in a few seconds. It was placed in an envelope and then posted. The document would probably take several days to reach the final destination where the envelope would be removed and the document presented for keying in to another computer.

For a long time, managers had been thinking how good it would be to have "Just in Time" production techniques, where a supply lorry would be able to arrive at the production line gates just in time to be unloaded and its contents taken directly to where they were needed on the production line. They dreamed of an end to costly warehousing and stock control. But these methods were impossible while the trading partners were still using the post. Lorries would be arriving at the wrong times, or not at all, causing the production lines to stop and chaos to reign, all because of the delay in the information flow.

Part of the answer to these problems was computer communications and the need to make one trading partner's computer "talk" to another. Communications have been in existence since the early days of computers. A file can be transmitted from one computer to another, either over a normal telephone line or over a "Leased Line" that is continuously in use and dedicated to computer communications. Many commercial products exist that can move files in this way.

Communications did not solve the whole problem though. Once a file is received it needs to be understood by the receiving computer. Items of information must be in the exact place that the computer is expecting them. If just a single character is out of place, the whole file will become uninterruptable by the computer.

In the early days of communications, trading partners had to spend a great deal of time agreeing exactly where each item of information would be stored in the files that were transmitted. These agreements were only active for one trading partner. Start trading with another partner and the requirements would change slightly, a larger product code would perhaps be needed, or a different method of pricing, but the whole negotiation and agreement process had to take place all over again. It kept the programmers busy but did little for the company profits.

The solution was EDI, Electronic Data Interchange, a standard method of transferring commercial information between computers. EDI (Electronic Data Interchange) files contain information, in one of many possible formats, pertaining to commercial documents. For example, a paper invoice will always contain certain information whatever the company or country of origin.

The Standards Bodies to Define EDI-

A number of different standards bodies were created to define both methods of communications and the layout of standard trading documents, so that simple and cost effective electronic trading could take place. The main document standards with which we will be concerned are-

EDIFACT

Tradacoms

ANSI X12

The earliest development of standards, usually for particular sectors of industry, was carried out in the late 1970's under the auspices of the EAN (International Article Numbering). EAN is the International Article Numbering Organisation dealing with EDI standards. It acts as an umbrella group for the various national Numbering Organisations. In 1998, as a result of the merger of the Article Number Association (ANA) and the (ECA) Electronic Commerce Association, the e.centre^{UK} was launched as the EAN Numbering Organisation for the UK.

More recently, in February 2005, the e.centre^{UK} has become GS1 UK. This is in line with the global re-launch of EAN International as GS1. The first UK message standards were published by the ANA in 1982, having been tested and developed since 1979. Over 90% of all UK trade EDI takes place using standards from the ANA, whose members include representatives from manufacturing, distribution, wholesaling, service and retail organizations?

The ANA standards use the two key syntaxes:

- UN/GTDI (General Trade Data Interchange), which forms the basis for TRADACOMS messages;
- UN/EDIFACT (EDI for Administration Commerce and Transport), which is the basis for EANCOM and UK EDIFACT messages.

There are three logical levels or "layers" of standards required to achieve EDI information transfer, each layer having its own controlling standards organisations (although some organisations may define more than one layer). This structured approach to EDI allows for the maximum flexibility and also enables future developments in technology and standards to be easily incorporated.

* PDF- Portable Document Format (PDF) is a popularly used file format for data interchange.

4.4 TYPES OF EDI

Electronic data interchange (EDI) is one of the most common forms of structured exchange of business documents between organizations by electronic means. There are many different types of EDI and a range of approaches to enabling EDI across a trading community. Whether any organization is looking to implement EDI at the first time or expanding an existing EDI infrastructure to support a variety of business partners across the

globe, there is a method of utilizing EDI that will suit organizational business needs, technical capabilities and budget. As some of the popularly used EDI's are-

- Direct EDI (Point-to-Point): Direct EDI, sometimes called point-to-point EDI, establishes a single connection between two business partners. In this approach, you connect with each business partner individually. It offers control for the business partners and is most commonly used between larger customers and suppliers with a lot of daily transactions.
- EDI via VAN or EDI Network Services Provider: An alternative to the direct EDI model is an EDI Network Services Provider, which, prior to the Internet, was referred to as a Value-Added Network (VAN). Many businesses prefer this network model to shield them from the ongoing complexities of supporting the varying communication protocols required by different business partners.
- EDI via AS2: AS2 is an Internet communications protocol that enables data to be transmitted securely over the Internet. EDI via AS2 delivers the functionality of EDI with the ubiquity of Internet access.
- EDI via FTP/VPN, SFTP, FTPS: FTP over VPN, SFTP and FTPS are commonly-used communication protocols for the exchange of EDI documents via the Internet. Any of these can be used to connect to business partners directly (Direct EDI) or via an EDI Network Services Provider.
- Web EDI: Unlike EDI via AS2, Web EDI conducts EDI using a standard Internet browser. Organizations use different online forms to exchange information with business partners. Web EDI makes EDI easy and affordable for small- and medium-sized organizations and companies that have only occasional need to utilize such a service.
- Mobile EDI: Users have traditionally accessed EDI by a private network such as a VAN or the Internet in order to send and receive EDI-related business documents. Mobile EDI has had limited adoption, in part due to security concerns with mobile devices across an EDI infrastructure, but mainly due to restrictions with the mobile devices available. The screen quality and size of devices has been unsuitable, but there is a growing industry developing software applications ('apps') for downloading onto mobile devices so it is only be a matter of time before you will be able to download supply chain and EDI related apps from private or corporate app stores.
- EDI Outsourcing: EDI Outsourcing (also referred to as B2B Managed Services and B2B Outsourcing) is a fast-growing option that enables companies to use external specialist resources to manage their EDI environment on a day-to-day basis. This is in part driven by companies wanting to integrate to back office business systems such as Enterprise Resource Planning (ERP) platforms. Many companies do not want to use their internal resources to undertake this ongoing type of work so they outsource it instead.
- EDI Software: Implementing EDI software behind a company firewall is sometimes the preferred option. This approach assumes that a company has the correct internal resources to be able to implement the software and maintain it on an ongoing basis.

4.5 BENEFITS OF EDI

EDI may also provide strategic benefits to take right decisions, which is useful for customers and distributors both. EDI saves money and time because transactions can be transmitted from one information system to another through a telecommunications network, eliminating the printing and handling of paper at one end and the inputting of data at the other. In other words EDI may also provide strategic benefits by helping firm 'lock in' customers, making it easier for customers or distributors to order from them rather than from competitors. EDI is a tool that enables organizations to reengineer information flows and business processes. It directly addresses several problems long associated with paper-based transaction systems. We also have facilitated with few more advantages. As-

- Time delays—Paper documents may take days to transport from one location to another, while manual processing methodologies necessitate steps like keying and filing that are rendered unnecessary through EDI.
- Labour costs—In non-EDI systems, manual processing is required for data keying, document storage and retrieval, sorting, matching, reconciling, envelope stuffing, stamping, signing, etc. While automated equipment can help with some of these processes, most managers will agree that labour costs for document processing represent a significant proportion of their overhead.
- Accuracy—EDI systems are more accurate than their manual processing counterparts because there are fewer points at which errors can be introduced into the system.
- Information Access—EDI systems permit myriad users access to a vast amount of detailed transaction data in a timely fashion. In a non-EDI environment, in which information is held in offices and file cabinets, such dissemination of information is possible only with great effort, and it cannot hope to match an EDI system's timeliness. Because EDI data is already in computer-retrievable form, it is subject to automated processing and analysis. It also requires far less storage space.

POINTS TO REMEMBER

- Electronic data interchange (EDI) is the electronic transmission of structured data by agreed message standards from one computer system to another without human intervention.
- The wide adoption of EDI in the business world facilitates efficiency and cost reduction.
- EDI is used in such diverse business-to-business relationships as: Interchanges between health care providers and insurers, Travel and hotel bookings, Education, Supply chain management, Administration and Tax reporting
- EDI is considered to be a technical representation of a business conversation between two entities, either internal or external. The EDI standards were designed to be independent of communication and software technologies. EDI can be transmitted using any methodology agreed to by the sender and recipient.
- Four major sets of EDI standards are- (i) The UN/EDIFACT Standard: The only international and UN-recommended standard (ii)

- The US Standard ANSI ASC X12 (X12):The predominant standard in North America (iii) The TRADACOM Standard: The predominant standard in the U.K. retail industry and (iv) The ODETTE Standard: The standard used in the European automobile industry.
- Value-added networks are the intermediate agencies providing secure and reliable transmission and storage of EDI messages. Web-based EDI (web EDI) allows a company to interact with its suppliers without implementing a complex EDI infrastructure. Web EDI services only require an Internet connection; thus, EDI has become accessible and affordable to even small- and medium-sized businesses.

GLOSSARY

- mModem (asynchronous and synchronous) Modulator-Demodulator
- FTP (File transfer Protocol)
- SFTP (Secure File Transfer Protocol)
- FTPS (FTP SSL- File Transfer Protocol Secure Sockets Layer)
- Email (Electronic Mail)
- HTTP (Hyper Text Transfer Protocol)
- AS1 (Applicability Statement 1)
- AS2 (Applicability Statement 2)
- AS4 (Applicability Statement 4)
- OFTP (Odette File Transfer Protocol)
- Mobile EDI (Mobile Electronic data interchange)

CHECK YOUR PROGRESS

- What are the benefits of electronic data interchange?
- What are the types of EDI?
- What is SAP and EDI?
- What is EDI?
- Who typically uses EDI?
- Is EDI difficult to implement?
- Do I need specific experience to be able to do EDI?
- I have heard about various EDI related industry associations and data standards. Are these important?
- What Are Different Edi Standards And Application Standards Formats?
- What Is As1, As2 And As3?

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UNIT- 5

ELECTRONIC MONEY, TRANSNATIONAL TRANSACTIONS OF E-CASH

2.22 INTRODUCTION

2.23 OBJECTIVES

2.24 ELECTRONIC MONEY

2.25 HISTORICAL DEVELOPMENT OF ELECTRONIC MONEY

2.26 TYPES OF ELECTRONIC MONEY

2.27 BENEFITS AND RISKS RELATED TO ELECTRONIC MONEY

2.28 TRANSNATIONAL TRANSACTIONS OF E-CASH

2.29 POINTS TO REMEMBER

2.30 GLOSSARY

2.31 CHECK YOUR PROGRESS

2.32 BIBLIOGRAPHY/REFERENCES

2.33 SUGGESTED READINGS

5.1 INTRODUCTION

E-money (Digital currency, digital money, electronic money or electronic currency) is a type of currency available in digital form. Like physical/traditional money, the electronic money/currency may be used to buy physical goods and services.

According to the European Central Bank "E-money can be defined as amount of money value represented by a claim issued on a prepaid basis, stored in an electronic medium (card or computer) and accepted as a means of payment by undertakings other than the issuer" (ECB).

5.2 OBJECTIVES

After successful completion of this unit, the learner will be able to-

- Know about e-money
- Know about risks related to electronic money
- Know about transnational transactions of e-cash

5.3 ELECTRONIC MONEY (E-MONEY)

The technological innovations have transformed the way in which the concepts such as "money" are defined. Money in the form of coins or notes (physical form) has been a universally accepted as a medium of exchange. Now because of technological innovations, it has been possible to transfer money electronically (e-money); however the question arises what does mean by the term "electronic money"? And what is the connection between the terms as- electronic-money (cash), cyber-cash (money), digital-cash (money), e-money (cash), and etc? As we understand money as a method of payment. It is not surprising that terms such as "electronic banking" (e-banking), "e-cash", "e-money" or "cyber-money" are widely used to explain new mediums of exchange that use electronic devices.

Electronic money or e-money is an evolving term that can have multiple synonyms but in principle, it involves the use of computer networks (Internet) and digital stored value systems to store and transmit money. Some examples of electronic money are bank deposits, electronic funds transfer, direct deposit, payment processors, digital currencies and etc. Electronic money can be understood as a way of storing and transmitting traditional/conventional (money in the form of coins or notes) money through electronic systems or as digital currency which varies in value and is trade able as a traditional currency (sometimes much better than that).

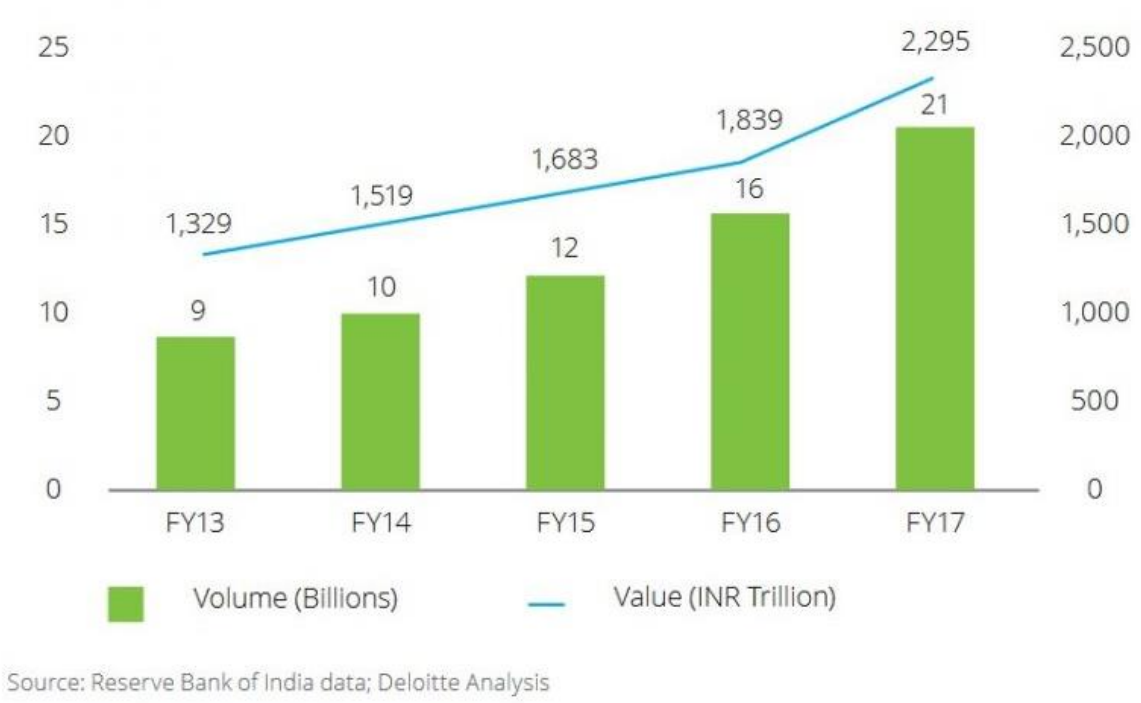
5.4 HISTORICAL DEVELOPMENT OF ELECTRONIC MONEY

The idea of digital cash was introduced in 1983 by David Chaum in his research paper. A service known as ***Homelink*** started in 1983 with the support of the Bank of Scotland and Nottingham Building Society. The account holders could subscribe to a special *Prestel service* that allowed them to use online banking. This marked the first recorded use of electronic money.

In 1994 Pizza Hut used online pizza ordering with the choice of payments like credit card via internet or in cash on delivery. In 1997, Coca-Cola offered buying from vending machines using mobile payments, after that PayPal emerged in the year 1998.

In India, the field of electronic money is regulated by the RBI (Reserve Bank of India) mainly under Payment and Settlement System Act (PPS Act) 2007. The Act gives details about the issue of electronic money under the name Prepaid Payment Instruments. According to a report by Google and Boston Consulting Group (BCG), the Indian digital payments industry is estimated to touch $500 billion by 2020, contributing 15 per cent to the country's GDP.

Figure 5.1 clearly shows how digital payment is increased in India form financial year 2013 to 2017.



Source: Reserve Bank of India data; Deloitte Analysis

Figure 5.1: Digital Payment Transaction in India

Financial Year 2013 – Financial Year 2017

5.5 TYPES OF ELECTRONIC MONEY

E-money as also known as digital money or electronic money or e-currency, is a form of money that is digitally stored as opposed to actual paper or coin currency. The use of e-money typically involves computers, the Internet and wired/wireless transfers. E-money is convenient because it doesn't require the consumer to carry cash (note/coin) and can be used for making purchase and receiving payments any time.

Paperless e-money have revolutionised the payment dealing by reducing paper work, transaction costs, and personnel cost. The systems are user-friendly and consume less time than manual processing and help businesses extend their market reach.

The different types of e-commerce payments used today are:

Credit Card-

The most popular form of electronic payment for transactions is through credit cards. It is simple to use; the customer has to just enter their credit card number and date of expiry in the appropriate area on the seller's web page. To improve the security system, increased security measures, such as the use of a card verification number (CVV- Card Verification Value), have been introduced to on-line credit card payments. The CVV is also named card verification number (CVN) which helps to detect fraud by comparing the CVV number with the cardholder's information which is stored by the card issuing organization (banks).

Debit Card-

Debit cards are another medium to pay electronically in India. Customers who want to spend online (using Internet) within their financial limits prefer to pay with their Debit cards. With the debit card, the customer can only pay for purchased goods with the money that is already there in his/her bank account as opposed to the credit card where the amounts that the buyer spends are billed to him/her and payments are made at the end of the billing period. Debit cards are issued to you by your concerning banks.

Smart Card-

It is a plastic card embedded with a microchip on which the customer's personal information is stored. It can be loaded with funds to make online transactions and instant payment of bills. The money that is loaded in the smart card reduces as per the usage by the customer and has to be reloaded from his/her bank account.

E-Wallet-

E-Wallet is a kind of interface through which you can pay/transfer money via using credit cards/debit cards or e-wallets. It is a type of prepaid account that allows the account holder to store e-money. This eliminates the need to key in account information every time while making payments. Once the customer has registered and created E-Wallet profile, he/she can make payments faster. Examples of e-wallets are- Paytm, PayUMoney, Mobikwik, Momoe, Citrus, State Bank Buddy, ICICI Pockets, Google Pay, Amazon Pay etc.

Netbanking-

Netbanking is changing the ways that public interact with Banks by enabling money transactions to be performed through computers and mobile devices. Netbanking does not require the user to have a card for payment purposes but the user needs to register with his/her bank for the netbanking service. While finishing the purchase the customer just needs to put in their net banking ID and password.

Mobile Payment-

Mobile payments (which include mobile wallets and mobile money transfers) are transactions that take place through your mobile device. That is, instead of paying with cash, cheques, or physical credit cards (Credit or Debit Card), mobile payment technology allows you to do so by mobile. Customer has to send a payment request to his/her service provider

via text message; the customer's mobile account or credit card is charged for the purchase. To set up the mobile payment system, the customer just has to download a software from his/her service provider's website and then link the credit card or mobile billing information to the software.

5.6 BENEFITS AND RISKS RELATED TO ELECTRONIC MONEY

Electronic payment allows your customers 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.

5.6.1 BENEFITS

Increased Speed and Convenience -

E-payment is very convenient compared to traditional payment methods such as cash. All the transfers can be performed at anytime, anywhere. It's enough to have an access to the Internet. Since you can pay for goods or services online at any time of day or night, from any part of the world, your customers don't have to spend time in a line, waiting for their turn to transact. Nor do they have to wait for a cheque to clear the bank so they can get the money they need.

Furthermore, the process of e-money payment is faster than cash payment. We don't have to count money manually, but it can be counted by the computer system. It will make the transaction more accurate and help to avoid human errors.

Security –

Electronic money offers security as cash can be stolen, and once stolen you cannot get back your cash. It is easy to block credit/debit card or mobile wallet (forms of electronic money) remotely (with internet).

This is especially true while travelling, where loss of cash can cause great inconvenience. And, if the futuristic cards evolve to use biometric ID (finger prints, eye scan, etc), it can be extremely difficult to copy, making it a very safe option.

You cannot forget your virtual wallet somewhere and it cannot be taken away by robbers.

Reduced Transaction Costs –

Transaction costs are a significant obstacle to the take-up and use of formal financial services. Account opening fees and minimum balance requirements prevent the poor from opening bank accounts. Indirect transaction costs—such as travel time—are also a hurdle.

On the other hand, Digital financial services, such as ATMs, debit cards, mobile money, and digital credit, have the potential to reduce operation costs. There are usually no fees –

or very small ones – to swipe your card or pay online. In the long run, e-payment could save both individuals and businesses hundreds to thousands of dollars in transaction fees.

Record of Transactions –

Each and every transaction made with electronic money is recorded in the bank's and the user's online records. These records have all the essential information about the transaction: the name of the payer, the name of the receiver, the date, place and time it took place. This makes it more trustworthy, and users can access their record of transactions at any time of the day.

Go Digital, Get Discount –

In India many offers are available to promote electronic money:

Service tax: Waiver of service tax of 15% on digital transactions up to `2,000.

Fuel: 0.75% discount on digital purchase of fuel through credit/debit cards, e-wallets or mobile wallets.

Rail tickets: 0.5% discount on monthly and seasonal suburban railway tickets from 1 January 2017. Online rail ticket buyers get up to 10 lakh free accident insurance too.

Rail catering: 5% discount on digital payments.

Highway toll: 10% discount on NH toll payment via RFID or fast-tags in 2016-17.

Insurance: 10% discount by government general insurers on premium paid online via their portals. 8% discount on new LIC policies bought online via its site.

RuPay: Kisan credit card holders to get RuPay Kisan cards.

5.6.2 RISK

Security Risk -

We need account and password to use e-money. It is also crucial to maintain the security of our e-money. However, the security system is not enough to keep it safe. In some cases, the password of e-money can get leaked and our account can be duplicated. A variety of specific access and authentication problems could occur. For example, inadequate controls could result in a successful attack by hackers operating via the Internet, who could access, retrieve, and use confidential customer's private & financial information. In the absence of adequate controls, an outside third party could access a bank's computer system and inject a virus into it.

Difficult for Non-Technical Users –

In India 62% access internet daily in urban area, as compared to only 53% in rural India. The digital medium may prove a challenge for the tech-unfriendly people, who will need more time to adapt or the availability of other options to conduct transactions. It is more problematic for older people, who may suddenly find themselves in locked out situation, for not being able to operate their bank accounts online.

Payment conflict Risk –

One of the features of electronic payment systems is that the payments aren't handled by humans but by a computerized electronic system. The electronic computerized system is prone to errors, particularly when it has to handle large amounts of payments on a repeated basis with many recipients involved. It's important to continuously check your pay slip after every pay period ends in order to ensure everything is correct. Failure to do this may result in payment conflicts caused by technical setback and anomalies.

Malware –

These are specifically designed applications and programs that compromise the security of mobile phones and computers. It gives cyber criminals access to devices, and hence also to sensitive consumer data. Therefore, download and install applications only from authentic sources and that too from developers having a good reputation.

Legal Risk –

Legal risk arises from violations of laws, rules, regulations, or prescribed practices, or when the legal rights and obligations of parties to a transaction are not well established. At the present time, there are no or very basic (incapable) laws at the central level that deal directly and specifically with online payment services.

The necessity of Internet–

Internet connection is must in electronic payment methods. As you may guess, if the internet connection fails, it's impossible to complete a transaction, get to your online account, etc.

5.7 TRANSNATIONAL TRANSACTION OF E-CASH

An Transnational transaction of e-cash is an online money transfer (often as part of a business deal) that crosses national borders, frequently involves two different currencies, and can even involve three currencies if a reserve currency, such as the US dollar is used.

The most important characteristic of e-cash is transnationality, which plays an important role in each of the benefits and problems associated with electronic cash.

E-cash is transnational in that it is not controlled by national borders. People using e-cash are transnational because they can purchase services and goods from every site on the Internet. Banks issuing e-cash are transnational because not only U.S. banks, but also all other banks can issue dollar-term e-cash. As far as e-cash is concerned, both the demand side and the supply side have no national borders.

This transnationality is an important characteristic of digital cash that greatly affects the benefits and risk discussed in section 5.6.

The benefit of improved efficiency is most prominent in the case of international transactions. For example, in India, the bank commission of an international money transfer is about Rs 200 or Rs 300, whereas it is Rs 50 or Rs 60 for a domestic transfer. So the cost-reduction effect is more dramatic for international payments.

The problems are also intensely rooted in this transnationality. The taxation and money laundering problems are caused directly by this transnationality. Instability of the exchange rate is also a result of the transnationality of people living in cyberspace; instability may be caused by mass participation in speculative transactions, and, likewise, mass transactions may be result of the fact that people can purchase goods and services directly from anywhere in the world by using digital cash in any currency. The financial crisis may be intensified by the transnationality of e-cash, because this transnationality makes it difficult for conventional central banks to deal with chained bankruptcy in cyberspace.

5.8 POINTS TO REMEMBER

- E-money is a monetary value that is stored and transferred electronically through a variety of means – a mobile phone, tablet, contactless card (or smart cards), computer hard drive or servers. E-money will bring us benefits as well as problems.
- One major benefit of e-money is its increased efficiency, which will open new business opportunities, especially for small businesses.
- It also will bring us problems: legal issues (taxation and money laundering), security concern, technical inability in using e-money, malware risk etc.
- Transnationality of e-cash is its ability to flow freely across national borders.
- Transnationality can cause both benefits and problems

5.9 GLOSSARY

- **CVV -** Card verification value (CVV) is a combination of features used in credit, debit and automated teller machine (ATM) cards for the purpose of establishing the owner's identity and minimizing the risk of fraud. The CVV is also known as the card verification code (CVC) or card security code (CSC).
- **E-cash –** e-Cash is an internet-based system that facilitates the transfer of funds anonymously.
- **RFID -** Radio-frequency identification (RFID) uses electromagnetic fields to automatically identify and track tags attached to objects. The tags contain electronically stored information.
- **RuPay -** RuPay is an Indian card scheme conceived and launched by the National Payments Corporation of India (NPCI) on 26 March 2012.

5.10 CHECK YOUR PROGRESS

Short Answer type Questions –

6. Define Electronic Money.
7. What is Credit Card? Explain how credit card is used in online purchasing.
8. What are different types of Electronic Money? Explain any one.
9. How security is the main concern in e-money transfer? Explain briefly.
10. Name different types of advantages of using electronic money.
11. Name different types of risk factors of using electronic money.

12. What is transnational transaction of e-cash? Explain.

Multiple type Questions –

6. ATM password should be kept in
   a) Personal diary b) Office diary
   c) Memory d) All of above

7. Internet banking refers to
   a) Operation of account through internet b) Opening of account through ATM
   c) Both (a) & (b) d) None of above

8. ATM can be used for
   a) Cash withdrawal b) Account enquiry
   c) Statement of account d) All of above

9. What is RuPay Debit Card?
   a) Domestic debit card
   b) Introduced by National Payments Corporation of India
   c) Accepted at all ATMs & PoS machines d) All of above

10. Which of the following is an electronic transfer system that operates in hourly batches?
    a) NEFT b) RTGS
    c) Paytm d)MICR

Terminal Question –

5. What is electronic Money? Give brief historical background of money system used in India.
6. What are different types of drawbacks involved in using electronic money?
7. Describe the benefits and risk in transnational transaction of e-cash.
8. What are different types of electronic money used now-a-days? Explain each briefly.
9. Explain the advantages of using e-money.

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UNIT- 6

ROLE OF RBI AND LEGAL ISSUES

2.34 INTRODUCTION

2.35 OBJECTIVES

2.36 EVOLUTION OF RBI

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6.1 INTRODUCTION

Reserve Bank of India (RBI) is the supreme monetary authority of India. This organization is responsible for printing of currency notes and managing the supply of money in the Indian economy. RBI works as a custodian of foreign reserve, banker's bank, banker to the government of India and controller of credit.

India is one of the fastest growing economies in the world, with a population over 1.2 Billion, has become the hub for global investment. there are various factor that influence and control Indian economy, one such being, The RBI, one of the oldest institution behind the success of our country.

6.2 OBJECTIVES

After successful completion of this unit, the learner will be able to-

- Know about RBI
- Know about Functions of RBI
- Know about Legal frameworks of RBI
- Know about organisational structure of RBI

6.3 EVOLUTION OF RBI

The Reserve Bank of India is the central Bank of India entrusted with the multidimensional role. It performs important monetary functions from issue of currency note to maintenance of monetary stability in the country. Initially the Reserve Bank of India was a private share holder's company which was nationalized in 1949. Its affairs are governed by the Central Board of Directors appointed by the Government of India. Since its inception the Reserve Bank of India had played an important role in the economic development and monetary stability in the country.

Let us also see the history of the RBI in timeline.

1926: The Royal Commission on Indian Currency and Finance recommended the creation of a central bank for India.

1927: A bill to give effect to the above recommendation was introduced in the Legislative Assembly. But it was later withdrawn due to lack of agreement among various sections of people.

1933: The White Paper on Indian Constitutional Reforms recommended the creation of a Reserve Bank. A fresh bill was introduced in the Legislative Assembly.

1934: The Bill was passed and received the Governor General's assent

1935: The Reserve Bank commenced operations as India's central bank on April 1 as a private shareholders' bank with a paid up capital of rupees five crores (rupees fifty million).

1942: The Reserve Bank ceased to be the currency issuing authority of Burma (now Myanmar).

1947: The Reserve Bank stopped acting as banker to the Government of Burma.

1948: The Reserve Bank stopped rendering central banking services to Pakistan.

1949: The Government of India nationalized the Reserve Bank under the Reserve Bank (Transfer of Public Ownership) Act, 1948.

Currently, the Bank's Central Office, located at Mumbai, has twenty-seven departments. (Box No.3) These departments frame policies in their respective work areas. They are headed by senior officers in the rank of Chief General Manager.

Composition of Central Board

The Central Board consists of Governor, deputy Governor, Ten Director nominated by the Central Government and two Government official nominated by the Central Government. The deputy Governor and Director are eligible to attend meeting of the Central Board but are not entitled to vote. The Governor and deputy Governor hold office for term of five years and are entitled for a re - appointment. The Directors are appointed for a term of four and hold office during the pleasure of the president. The meeting of the Central Board is convened at least six times in a year.

Composition of Local Board

A local board is formed in each four zones consisting of five members who are appointed by the Central Government. There is Chairperson of the Board who is elected among the member. The members of the Board have a hold of face for a term of four years and eligible for reappointment. The Local Board advice on matters referred to it by the Central Board and performs duties delegated to it by the Central Board.

6.4 ORGANISATIONAL STRUCTURE OF RBI

The Reserve Bank is fully owned and operated by the Government of India.

The Preamble of the Reserve Bank of India describes the basic functions of the Reserve Bank as:

- Regulating the issue of Banknotes
- Securing monetary stability in India
- Modernising the monetary policy framework to meet economic challenges

The Reserve Bank's operations are governed by a central board of directors; RBI is on the whole operated with a 21-member central board of directors appointed by the Government of India in accordance with the Reserve Bank of India Act.

The Central board of directors comprise of:

- ***Official Directors*** – The governor who is appointed/nominated for a period of four years along with four Deputy Governors
- ***Non-Official Directors*** – Ten Directors from various fields and two government Official

The Reserve Bank's affairs are governed by a central board of directors. The Central Board of Directors is the apex body in the governance structure of the Reserve Bank. There are also four Local Boards for the Northern, Southern, Eastern and Western areas of the country which take care of local interests. The central government appoints/nominates directors to the Central Board and members to the Local Boards in accordance with the Reserve Bank of India (RBI) Act. The composition of the Central Board is enshrined under Section 8(1) of the RBI Act, 1934.

Fig 6.1 Organisational Structure of RBI

The Central Board consists of:

- The Governor

- 4 Deputy Governors of the Reserve Bank
- 4 Directors nominated by the central government, one from each of the four Local Boards as constituted under Section 9 of the Act
- 10 Directors nominated by the central government
- 2 government officials nominated by the central government
- The Central Board is assisted by three committees:
    - The Committee of the Central Board (CCB)
    - The Board for Financial Supervision (BFS)
    - The Board for Regulation and Supervision of Payment and Settlement Systems (BPSS)

6.5 OBJECTIVES OF RBI

The primary goals of the RBI according to the Preamble of the same are as follows.

- To regulate the issue of Banknotes.
- To secure monetary stability in the country.
- To meet the economic challenges by modernising the monetary policy framework.

The primary focus of the RBI is to supervise and undertake initiatives on behalf of the financial sector which consists of financial institutions, commercial banks, non-banking financial companies. A few critical efforts of the RBI are to restructure bank inspections and fortifying the role of statutory auditors in the banking system.

6.6 FUNCTIONS OF RBI

- **Banker to Government**

The Reserve Bank of India accepts and makes payment on behalf of Central Government. It carries out its exchange, remittance, management of public debt and other banking function of the Central Government. The Central Government entrusts its money, remittance, exchange and banking transactions in India with the Reserve Bank of India. It deals in repo or reverse repo.

- **Right to Issue Bank note**

The Reserve Bank of India has the sole right to issue bank notes in India. The bank notes are legal tender guaranteed by the Central Government. The issue of bank note is conducted by a separate department called issue department. The Central Government on the recommendation of Central Board specifies denomination of bank notes including discontinuance of bank notes. The Central Government approves design, form and material of Bank notes on consideration of recommendations of the Central Board.

- **Licensing Authority**

The Reserve Bank of India is empowered to grant license to commence banking business in India, including the power to cancel a license granted to a banking company.

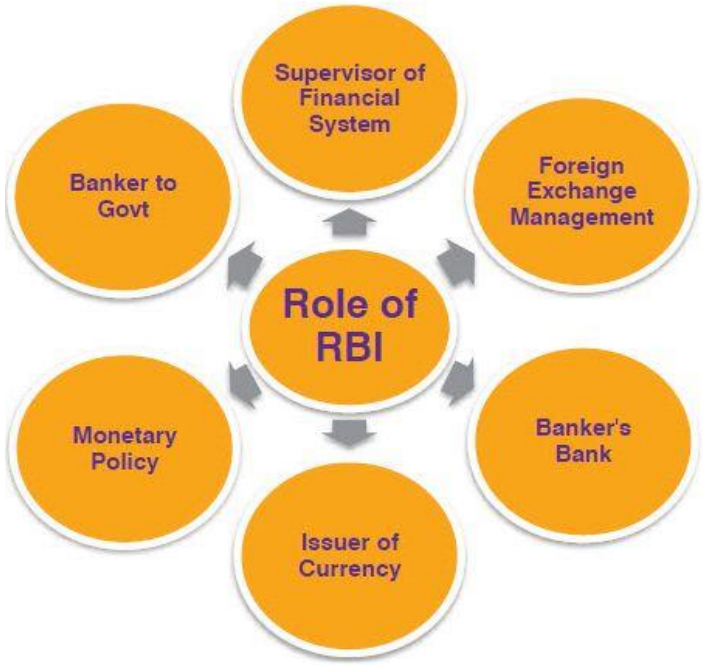

Fig 6.2 Functions of RBI

- **Formulates Banking policy**

The Reserve is empowered to formulate banking policy in the interest of the public or depositors banking policy in relation to advances and provide direction on the purpose of the advances, margins to be maintained in a secured advances, the maximum amount of advance may be made, the rate of interest, terms and conditions for advances or guarantees may be given.

- **Banker's Bank**

The banks listed in second schedule and non-schedule banks shall maintain a cash reserve ratio with the Reserve bank of India with a view to securing the monetary stability in the country. It provides loans and advances in foreign currency to scheduled Banks and to other financial institution. It purchases, sells or discount any bill of exchange or promissory note or makes a loan or advances to schedule bank.

- **Depositor Awareness and Education**

The Reserve Bank of India has constituted a fund called "Depositor Education and Awareness Fund." The fund is utilized for the promotion of depositors" interest and other purposes in the interest of the depositor.

- **Regulation and Management of Foreign Exchange**

The Reserve Bank of India is empowered to regulate, prohibit, and restrict dealing in foreign exchange. It issues license to banks and other institution to act as the authorized agency in the foreign exchange market

- **Controller of the Credit**

The RBI undertakes the responsibility of controlling credit created by the commercial banks. RBI uses two methods to control the extra flow of money in the economy. These methods are quantitative and qualitative techniques to control and regulate the credit flow

in the country. When RBI observes that the economy has sufficient money supply and it may cause inflationary situation in the country then it squeezes the money supply through its tight monetary policy and vice versa.

- **Other Functions**

The Reserve Bank performs a number of other developmental works. These works include the function of clearing house arranging credit for agriculture (which has been transferred to NABARD) collecting and publishing the economic data, buying and selling of Government securities (gilt edge, treasury bills etc)and trade bills, giving loans to the Government buying and selling of valuable commodities etc. It also acts as the representative of Government in International Monetary Fund (I.M.F.) and represents the membership of India.

New department constituted in RBI:- On July 6, 2005 a new department, named financial market department in reserve bank of India was constituted for surveillance on financial markets.

This newly constituted dept. will separate the activities of debt management and monetary operations in future. This department will also perform the duties of developing and monitoring the instruments of the money market and also monitoring the government securities and foreign money markets.

6.6 LEGAL FRAMEWORKS OF RBI

The Reserve Bank of India comes under the purview of the following Acts:

- Reserve Bank of India Act, 1934
- Public Debt Act, 1944
- Government Securities Regulations, 2007
- Banking Regulation Act, 1949
- Foreign Exchange Management Act, 1999
- Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002
- Credit Information Companies(Regulation) Act, 2005
- Payment and Settlement Systems Act, 2007

Legal Issues related to RBI

Section 7 of the RBI Act was sparked initially by the judgment of the Allahabad High Court in Independent Power Producers Association of India v. Union of India in writ petitions filed by power producers. It was noted by the court that:

- Section 7(1) of the RBI Act empowers the Central Government to issue directions from time to time to the RBI as it may, after consultation with the Governor, consider necessary in the public interest.

- The Central Government, however, is not expected to issue any directions, as contemplated under Section 7(1), indiscriminately or randomly. Such directions are possible when there exists sufficient material in support.
- Where the two organs (the RBI and the Ministry) are at variance, the Government should consider whether the circumstances warrant the initiation of the consultative process. The purpose of Section 21 is to enable the Government to harmonise the competing views.

In October-November 2018, news reports surfaced regarding the Government's intention to issue directives under Section 7 of the RBI Act reportedly on as many as 12 issues, including:

- Easing the prompt corrective action framework of the RBI, i.e. the lending and other restrictions imposed by the RBI on particular banks to improve their financial health;
- Providing more credit to Micro, Small and Medium Enterprises;
- Improving liquidity to tide over the liquidity crunch being faced by NBFCs; and
- Transfer of some of RBI's reserves to the Government in the form of dividend to reduce the fiscal deficit.

The supremacy of the elected government is one of the bedrocks of the modern democratic system. A democratic republic contemplates the rule of the masses based on a universal franchise.

However, as observed by the Allahabad High Court, the power under Section 7 is not untrammelled or unfettered - it cannot be exercised unreasonably or arbitrarily. Moreover, the directions can only be issued in the public interest and after consultation with the RBI Governor. The courts can step in to act as a check against governmental excess if any of these conditions are violated.

6.7 POINTS TO REMEMBER

- The Reserve Bank of India (RBI) is India's central bank, also known as the banker's bank. The RBI controls monetary and other banking policies of the Indian government.
- The Reserve Bank is fully owned and operated by the Government of India.
- The Reserve Bank's operations are governed by a central board of directors; RBI is on the whole operated with a 21-member central board of directors appointed by the Government of India in accordance with the Reserve Bank of India Act.
- The Reserve Bank has taken many steps towards initiating and updating secure and sustainable methods of payment systems in India to meet public requirements.

6.8 GLOSSARY

- **CAPITAL MARKET -** This is an important part of financial sector and refers to a system which provides for facilities and arrangements for borrowing and loaning of long term funds.
- **DEPRECIATION -** In accounting, this term means calculation, by any one of the standardised methods of the decline in the value of an asset.

- **GROSS DOMESTIC PRODUCT (GDP) -** Gross Domestic Product is a measure of the total value of final goods and services produced within a country during a given year.
- **REPO RATE -** When RBI provides a loan to the bank for short-term between 1 to 90, RBI takes some interest from the bank which is termed as Repo Rate.
- **BANKRUPTCY -** Bankruptcy is a legal declaration of a person who is unable to pay off debts.

6.9 CHECK YOUR PROGRESS

Short Answer type Questions –

13. Write the brief history of RBI.
14. What are the 3 main functions of RBI?
15. Why RBI is called as Banker's Bank? Explain.
16. Who head the Reserve Bank of India?
17. Name the new department constituted at RBI.

Multiple type Questions –

11. In which year was the RBI established?
    a) 1972 b) 1940
    c) 1935 d) 1945

12. The paper currencies in India are
    a) In the circulation by the Issue Department of RBI.
    b) The liabilities for the banking department of the reserve bank
    c) Liabilities of Issue department in RBI
    d) None of the above

13. Who works as RBI's agent at places where it has no office of its own?
    a) State Bank of India b) Ministry of Finance
    c) Government of India d) International Monetary Fund

14. Which among the following is incorrect?
    a) RBI is the Bank of Issue b) RBI acts as Banker to the Government
    c) RBI is Banker's Bank d) RBI does not regulate the flow of credit

15. India is a member of the International Monetary Fund since _____.
    a) 1934 b) 1935
    c) 1947 d) 1949

Terminal Question –

10. Explain the Organisational structure of RBI.
11. Write the evolution history of RBI.
12. What is the legal controversy between Indian Government & RBI? Explain in detail.
13. What are the functions of RBI?

14. What are the different objectives of RBI?

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UNIT- 7

LAWS RELATING TO INTERNET CREDIT CARDS

3.13 INTRODUCTION

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3.15 WHAT IS CREDIT CARD?

3.16 ADVANTAGE & DISADVANTAGES OF CREDIT CARD

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3.21 POINTS TO REMEMBER

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3.24 BIBLIOGRAPHY/REFERENCES

3.25 SUGGESTED READINGS

7.1 INTRODUCTION

Money is the most important and useful inventions made by man. It comes in different forms. As we all know that earlier there was no monetary system in the economy, people used barter system for any kind of exchange. Barter system was a system in which people used to sell goods and services through direct exchange. Thus, it served the purpose of the self-interest of every individual in society.

Today, plastic form of money is common in most of the developed countries and are gaining acceptance in many developing and under developed countries too. Plastic money has certain advantages over traditional money just as paper money has certain advantages over coins.

A credit card is plastic money allows you to borrow money to buy things. There can be a cost to borrowing that money (you might pay interest and fees), but there can also be a benefit (you might earn rewards and build your credit.)

7.2 OBJECTIVES

After successful completion of this part, the learner will be able to-

- Know about Credit Card
- Know about pros and cons of Credit card
- Know about laws related to credit card

7.3 WHAT IS CREDIT CARD?

A credit card is a thin rectangular slab of plastic issued by a financial company, that lets cardholders borrow funds with which to pay for goods and services. Credit cards impose the condition that cardholders pay back the borrowed money, plus interest, as well as any additional agreed-upon charges.

The credit company provider may also grant a line of credit (LOC) to cardholders, enabling them to borrow money in the form of cash advances. Issuers customarily pre-set borrowing limits, based on an individual's credit rating. A vast majority of businesses let the customer make purchases with credit cards, which remain one of today's most popular payment methodologies for buying consumer goods and services.

Types of Credit Cards

Most major credit cards, which include

- Visa,
- MasterCard,
- Discover,
- Diners Club
- and American Express,

are issued by banks, credit unions, or other financial institutions. Many credit cards attract customers by offering incentives such as airline miles, hotel room rentals, gift certificates to major retailers and cash back on purchases.

To generate customer loyalty, many retail establishments issue branded versions of major credit cards, with the store's name emblazoned on the face of the cards. Although it's typically easier for consumers to qualify for a store credit card than for a major credit card, store cards may only be used to make purchases from the issuing retailers, which may offer cardholders perks such as special discounts, promotional notices, or special sales.

7.4 ADVANTAGES & DISADVANTAGES OF CREDIT CARD

Advantages of Credit Card

- You can make a large purchase now and pay it off in smaller amounts over time.
- ***Need to Carry Cash:*** The majority of places accept credit cards, which means you don't have to stop by the ATM to pull out cash before going out. But keep in mind that some places may not allow you to tip via credit card. Carrying credit cards is more convenient (and safer) than carrying a wad of cash, and credit cards are more widely accepted than personal checks.
- With responsible use, you can build your credit, which will be important later on.
- Many credit cards give you rewards; essentially giving you back 1% or more of the money you spend.
- ***Faster to Use:*** Again, compared to cash and especially with writing a check, credit cards are much faster to use. Swipe your card and you're done in seconds.
- ***Ability to Pay in Instalments:*** While it's best to pay your credit card balance in full each month, you do have the ability to pay off your balance over a period of time. The exception is with charge cards, which require you to pay in full to keep your card in good standing.
- ***Funding for Emergencies:*** While not the best option for covering an emergency, a credit card can help you cover an unexpected expense if you can't afford to pay it from savings.

Disadvantages of Credit Card

- Temptation to Spend More Than You Can Afford: Credit cards open up additional purchasing power and give you the illusion that you have more money than you really do. Studies have shown that people are more willing to spend with credit cards than other forms of payment. You can easily dig yourself into debt if you're not careful about your spending.

- ***The Terms Can Be Confusing:*** A person who's not used to reading credit card agreements can easily be confused by the phrasing and the jargon. Understanding credit card terms are important to use the credit card in a way that doesn't put you at risk of fees.
- ***Misuse Can Ruin Your Credit Score:*** Your credit score is tied directly to how you use your credit card. If you run up big balances and pay your credit card late, your credit score will be impacted.
- Interest can make even a small debt become large over time.

7.5 CHOOSING A CREDIT CARD

There are hundreds of credit cards available, so shop around to get the one that suits you best.

Start by thinking about what you want to use the credit card for. This could be to buy things on line or on holiday, to pay your bills or to spread the cost of a purchase. However you choose to use your card, the key thing is whether you will be paying off what you owe every month or spreading repayments over a period.

If you can pay the balance off in full and on time each month, you can take advantage of the interest free period. In this case, the interest rate may not be so important but you may want to look at cards with other incentives like cash back. Even if you think you will be able to pay the balance in full each time, it's worth planning what you'll do if you can't.

If you want to use the card for borrowing and you won't be paying off the balance each month, you will usually have to pay interest. In this case, you may want to choose a card with a lower interest rate. Don't forget to make sure you can afford a regular repayment.

Checklist to look out for when choosing a credit card

Annual Percentage Rate (APR): This is the cost of borrowing on the card, if you don't pay the whole balance off each month.

Minimum repayment: If you don't pay off the balance each month, you will be asked to repay a minimum amount.

Annual fee: Some cards charge a fee each year for use of the card. The fee is added to the amount due and you will have to pay interest on the fee as well as on your spending, unless you pay it in full.

Charges: Check in the credit agreement what other charges apply to the card.

Introductory interest rates: This is where you start off paying a low rate of interest or none at all. The rate then increases after a certain amount of time.

Loyalty points or rewards: The points add up depending on the amount you spend and you can then use them to buy goods.

Cash back: This is where you get money refunded to your card, depending on how much you spend.

7.6 CREDIT CARD ACT 2009

The Credit Card Accountability Responsibility and Disclosure Act (or the Credit CARD Act of 2009) was passed by the United States Congress in 2009, expanding on the Truth in Lending Act (TILA), and took effect in 2010. Its purpose was to curtail deceptive and abusive practices by credit card issuers.

A new Federal agency, the Consumer Financial Protection Bureau (CFPB) was created to (among other things) administer the Credit CARD Act. Before the Credit CARD Act of 2009 credit card terms and rules were pretty cryptic.

It was much easier to get pinged for a mistake you didn't even realize you could make, or end up with a fee you weren't aware you'd have to pay. The CARD Act was created to help consumers, like you, better understand things that might not have been so clear before.

Credit Card Act Background

The Credit CARD Act was passed by lawmakers in response to the following practices:
Interest rate hikes: Many credit card companies hiked the interest rate on their cards without adequate notification or reason. Most customers didn't realize this was happening and often were powerless to do anything about it. Before the Act, it wasn't nearly as easy to compare low interest credit cards as it is today.

Marketing targeted toward underage consumers: Many credit card companies targeted college campuses with giveaways to underage consumers who were not aware of what they were signing up for until it was too late.

Fees: Numerous credit card accounts were hit with all manner of fees, often undisclosed. These ranged from late fees to "over-limit" fees, which were assessed when the credit card company allowed an account to go over its limit and then charged the customer a fee for doing so.

Obfuscation: Most of the time, it was nearly impossible to decipher the myriad charges, fees and interest expenses added to a credit card account.

Credit Card Act 2009

The credit CARD act of 2009 consists of five titles:

Title I: Consumer Protection - offers protection for credit cardholders against increases in fees and interest rates, as well as unclear and unduly short notifications about changes.

Credit card companies are now required to take into consideration new applicants' "ability to pay" before approving that applicant for new cards.

Title II: Enhanced Consumer Disclosures **-** revises and expands requirements for mandatory minimum payment disclosures a creditor must provide, such as payoff timing, penalties and renewals, as well as prevention of deceptive marketing of credit reports.

Title III: Protection of Young Consumers **-** prohibits extensions of credit to consumers under the age of 21 unless the consumer has submitted a written application that meets specified requirements. Requires underage applicants to have a co-signer, such as a parent, legal guardian, spouse, or any other individual over the age of 21 who has the means to repay debts incurred by the consumer in connection to the account.

Title IV: Gift Cards **-** amends the Electronic Fund Transfer Act to declare unlawful legislation governing prepaid and gift cards, as well as gift certificates.

Title V: Miscellaneous Provisions **-** instructs the Comptroller General to conduct a study on the use of credit by consumers, interchange fees, and their effects on consumers and merchants.

Credit Card Act statement requirements

In compliance with the CARD Act of 2009, issuers had to improve upon the readability of their credit card statements while also adding information that could prove vital for cardholders.

Before the changes necessitated by the Act, you probably received your statement in the mail, lamented over its clunky, unapproachable design, spent a couple of seconds locating the minimum payment due and disregarded the rest. But with a more streamlined and uniform design, a few extra minutes going through your credit card statement can go a long way to making you better educated about your full credit card situation.

Aside from straightforward information such as a summary of your account activity and that month’s transactions, here are a few key additions thanks to the Credit CARD Act:

- Issuers have to warn cardholders of any penalties they can incur from late payments as well as the potential long-term cost of making only minimum payments on their balances.
- Cardholders must be notified of any changes to their interest rates at least 45 days before the rate changes.
- Interest and fees have to be listed separately from transactions.

7.7 CONSUMER PROTECTION BY CREDIT CARD LAW 2009

The Credit CARD Act of 2009 protects consumers in handful of notable ways, including:
Account changes: Under the Credit CARD Act, banks may only change interest rates on existing balances if you are 60 days or more late on your monthly minimum payment. In

addition, after you make six months of on-time payments, they must restore your original rate.

Third-party credit reporting: Credit card issuers are no longer allowed to impose penalty rates and fees when a third-party credit bureau reports a default with another lender, including other credit cards.

Promotional terms: The Credit CARD Act requires promotional rate periods to last at least six months and, with very few exceptions, forbids changes to the purchase rate of any new accounts within the first year.

Adequate time: The Credit CARD Act mandates that statements be mailed or posted online no later than 21 days before an account's due date. Credit card companies cannot "trap" consumers by setting payment deadlines on the weekend or in the middle of the day or changing their payment due dates each month.

Interest cycle: Lenders must calculate interest based only on the balance during a single payment cycle.

Payment rules: Credit card companies must apply payments to a consumer's highest interest rate balances first.

Over-limit charges: Credit card customers now have to be given the choice whether to "opt in" to over-limit charges on their credit card account. If they decline to opt in, they will have their cards declined when a proposed charge or withdrawal would put the balance over the limit, and no fees may be charged in connection with that purchase attempt.

Financial consequences: Congress challenged credit card issuers to educate consumers by including information about the impact of long-term debt in every account statement. Banks must now calculate how long customers could stay in debt by paying only minimum payments.

Readability: Instead of "mice type" legal text printed along the sides or bottoms of account materials, banks must now use clear language in an easily readable font to explain products and services.

7.8 STUDENT PROTECTION BY CREDIT CARD LAW

Though nowadays student credit cards are better designed and more straightforward, before the CARD Act of 2009, college students were particularly susceptible to abusive credit card practices. The CARD Act now serves to protect students in the following ways:

Campus marketing: Credit card marketing teams can no longer appear on college campuses to offer giveaways in order to solicit credit card applications. This applies to off-campus college-sponsored events, too.

Mailing offers: The Credit CARD Act also prohibits credit card companies from mailing offers to prospective customers under the age of 21, unless they specifically "opt in" to receive those materials.

Ability to pay: Credit card companies have to consider an applicant's ability to repay before approving a new credit card, curtailing the practice of issuing cards in order to collect late fees and other charges (and, of course, targeting students). The act also restricts fees on low-balance cards sold to cardholders with bad credit.

Underage cardholders: The Credit CARD Act prohibits lenders from issuing new credit cards to Americans under the age of 21 unless that applicant finds an adult co-signer capable of paying off a new credit line. Also included is a provision that credit bureaus can no longer supply reports on Americans under age 21 without parental consent.

7.9 POINTS TO REMEMBER

- A credit card is plastic money allows you to borrow money to buy things.
- The Credit Card Accountability Responsibility and Disclosure Act (or the Credit CARD Act of 2009) was passed by the United States Congress in 2009
- A new Federal agency, the Consumer Financial Protection Bureau (CFPB) was created to (among other things) administer the Credit CARD Act.
- The Credit CARD Act of 2009 set out to curtail deceptive and abusive practices by making the most egregious practices unlawful and by setting out clear provisions for disclosure.

7.10 GLOSSARY

- **Secured Credit Card -** A secured credit card is a type of credit card that is backed by a secured deposit used as collateral on the account should you default.
- **Lines of Credit (LOC) -** A line of credit (LOC) is an arrangement between a financial institution, usually a bank, and a customer that establishes the maximum amount a customer can borrow.
- **APR -** The Annual Percentage Rate is a measure of the cost of credit, expressed as a yearly rate.
- **Balance Transfer -** You may be able to transfer a balance from one credit card to another, usually to take advantage of a lower interest rate. Transfers are limited to the available credit on the receiving card.
- **Dispute -** If you think your bill is wrong, write to your credit card issuer at the address listed on your statement, within 60 days of receiving the first statement where the error appeared.
- **Credit score -** A credit score is a three digit number that summarizes how well a person or business has handled debt. The higher the number, the better.

7.11 CHECK YOUR PROGRESS

Short Answer type Questions –

7. What is E-commerce? Explain briefly.

8. Define E-contract.
9. What are the laws governing e-contract in India? Name them
10. What do you understand by consumer protection? Explain
11. Explain two jurisdiction issues found in e-commerce transaction.
12. Explain *Advertisement* issue of jurisdiction.

Multiple type Questions –

5. Credit Card is an essential component of :
   a. Electronic Commerce b. Internet Commerce
   c. Both of the Above d. None of the Above

6. Credit Cards are a convenient substitute for _____:
   a. Cash b. Cheque
   c. Both of the Above d. None of the Above

7. Your credit score can affect
   a. your future employment b. your ability to borrow
   c. The interest rate you pay on a loan d. all of the above

8. You can increase your credit score if you

a. Have additional credit inquiries.
b. Borrow more.
c. Successfully manage several types of credit.
d. Have a history of late payments.

Terminal Question –

5. Explain why there is a need of getting Credit Card?
6. What are the facts taken into consideration before applying for a credit card?
7. Explain in detail Credit Card Act 2009.
8. How Credit card act 2009 help consumer protection?
9. How Students get benefitted by Credit card act 2009? Explain.

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UNIT- 8

SECURE ELECTRONIC TRANSACTION

2.46 INTRODUCTION

2.47 OBJECTIVES

2.48 SECURE ELECTRONIC TRANSACTION (SET)

2.49 PARTIES INVOLVED IN SET

2.50 REQUIREMENT IN SET

2.51 HOW SET WORKS?

2.52 KEY FEATURES OF SET

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2.54 SET SUPPORTED TRANSACTION

2.55 POINTS TO REMEMBER

2.56 GLOSSARY

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8.1 INTRODUCTION

Secure electronic transaction (SET) was an early protocol for electronic credit card payments. As the name implied, SET was used to make easy the secure communication of consumer credit card information via electronic medium, such as the Internet. SET blocked out the details of credit card information, thus preventing merchants, hackers and electronic thieves from accessing this information. SET allowed merchants to verify their customers' card information without really seeing it, thus shielding the customer. The information on the card was as an alternative transferred directly to the credit card company for authentication.

8.2 OBJECTIVES

After successful completion of this part, the learner will be able to-

- Know about secure electronic transaction (SET)
- Know about uses of SET
- Know about implementation of SET

8.3 SECURE ELECTRONIC TRANSACTION (SET)

Secure Electronic Transaction (SET) is a system for ensuring the security of financial transactions on the Internet. It was supported initially by MasterCard, Visa, Microsoft, Netscape, and others.

With SET, a user is given an electronic wallet (digital certificate) and a transaction is conducted and verified using a combination of digital certificates and digital signatures among the purchaser, a merchant, and the purchaser's bank in a way that ensures privacy and confidentiality. SET makes use of Netscape's Secure Sockets Layer (SSL), Microsoft's Secure Transaction Technology (STT), and Terisa System's Secure Hypertext Transfer Protocol (S-HTTP). SET uses some but not all aspects of a public key infrastructure (PKI).

SET protocol restricts revealing of credit card information to merchants thus keeping hackers and thieves aside. SET protocol includes Certification Authorities for making use of standard Digital Certificates like X.509 Certificate.

8.4 PARTIES INVOLVED IN SET

In the general scenario of online transaction, SET includes similar participants:

Cardholder – Customer. It can purchase goods and services from merchant with credit card.

Issuer – Customer’s financial institution. Provide credit card to consumer

Merchant - Person or organization that has goods to sell.

Acquirer – Process payment and card authorization. Provide support of multiple type of credit card brand to merchant. Provide electronic payment transfer & Control payment limit.

Certificate authority – Authority which follows certain standards and issues certificates (like X.509V3) to all other participants.

Figure 5.2 shows how above said participants are interconnected to each other.

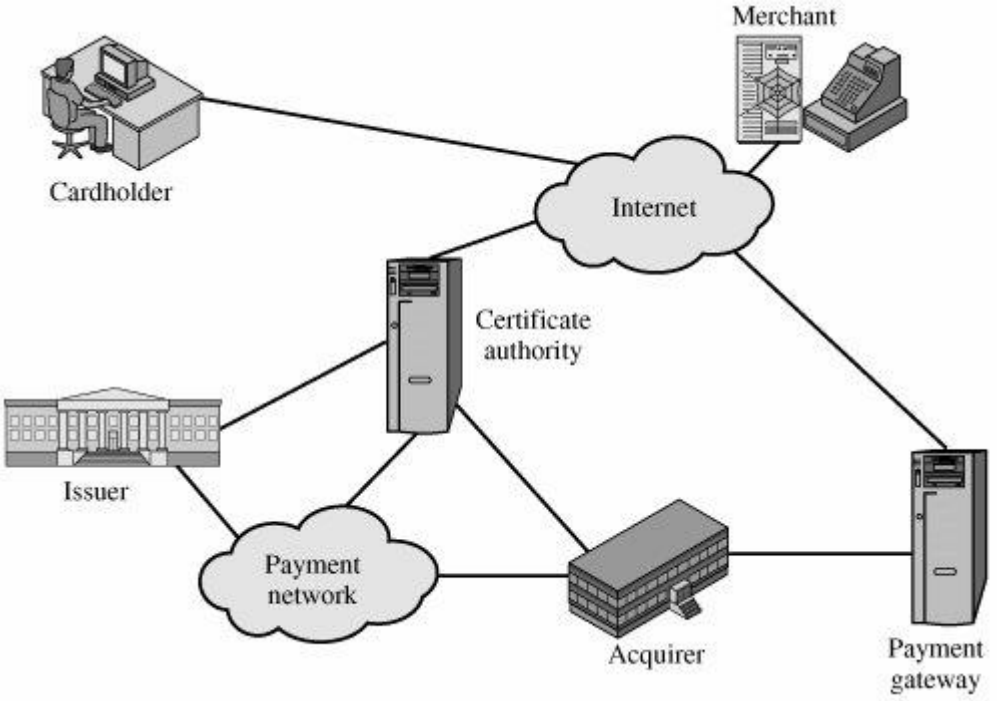

Figure 5.2: Parties involved in SET

8.5 REQUIREMENT IN SET

SET protocol has some requirements to meet, some of the key requirements are:

- It has to provide mutual verification i.e., customer (or cardholder) authentication by confirming if the customer is intended user or not and merchant authentication.
- It has to keep the PI (Payment Information) and OI (Order Information) private by suitable encryptions.
- It has to be resistive against message modifications i.e., no changes should be allowed in the content being transmitted.
- SET also needs to provide interoperability and make use of best security mechanisms.

8.6 HOW SET WORKS?

SET only works when – one has SET enabled browser such as Netscape or Microsoft's Internet Explorer and the transaction provider (bank, store, etc.) has a SET-enabled server.

1. The customer opens a MasterCard or Visa bank account. Any issuer of a credit card is some kind of bank.
2. The customer receives a digital certificate. This electronic file functions as a credit card for online purchases or other transactions. It includes a public key with an expiration date. It has been through a digital switch to the bank to ensure its validity.
3. Third-party merchants also receive certificates from the bank. These certificates include the merchant's public key and the bank's public key.
4. The customer places an order over a Web page, by phone, or some other means.
5. The customer's browser receives and confirms from the merchant's certificate that the merchant is valid.
6. The browser sends the order information. This communication is encrypted with the merchant's public key, the payment information, which is encrypted with the bank's public key (which can't be read by the merchant), and information that ensures the payment can only be used with this particular order.
7. The merchant verifies the customer by checking the digital signature on the customer's certificate. This may be done by referring the certificate to the bank or to a third-party verifier.
8. The merchant sends the order message along to the bank. This includes the bank's public key, the customer's payment information (which the merchant can't decode), and the merchant's certificate.
9. The bank verifies the merchant and the message. The bank uses the digital signature on the certificate with the message and verifies the payment part of the message.
10. The bank digitally signs and sends approval to the merchant, who can then fill the order.

8.7 KEY FEATURES OF SET

- **Provide Authentication**
  - **Merchant Authentication –** To prevent theft, SET allows customers to check previous dealings between merchant and financial institution. Standard X.509V3 certificates are used for this verification.
  - **Customer / Cardholder Authentication –** SET checks if use of credit card is done by an authorized user or not using X.509V3 certificates.
- **Provide Message Confidentiality:** Confidentiality refers to preventing not intended people from reading the message being transferred. SET implements confidentiality by using encryption techniques. Traditionally DES is used for encryption purpose.
- **Provide Message Integrity:** SET doesn’t allow message alteration with the help of signatures. Messages are protected against illegal alteration using RSA digital signatures with SHA-1 and some using HMAC with SHA-1,

8.8 DUAL SIGNATURES

An important innovation introduced in SET is the dual signature. The purpose of the dual signature is to link two messages that are projected for two different recipients.

In this case, the customer wants to send the -

- Order information (OI) to the merchant and
- The payment information (PI) to the bank.

The merchant does not need to know the customer's credit card number, and the bank does not need to know the details of the customer's order. The customer is afforded extra protection in terms of privacy by keeping these two items separate. However, the two items must be linked in a way that can be used to determine disputes if necessary. The link is needed so that the customer can prove that this payment is intended for this order and not for some other goods or service.

Construction of Dual Signature **–** Figure 5.2 shows the construction of a dual signature. The customer takes the hash (using SHA-1) of the PI and the hash of the OI. These two hashes are then concatenated and the hash of the result is taken. Finally, the customer encrypts the final hash with his or her private signature key, creating the dual signature.

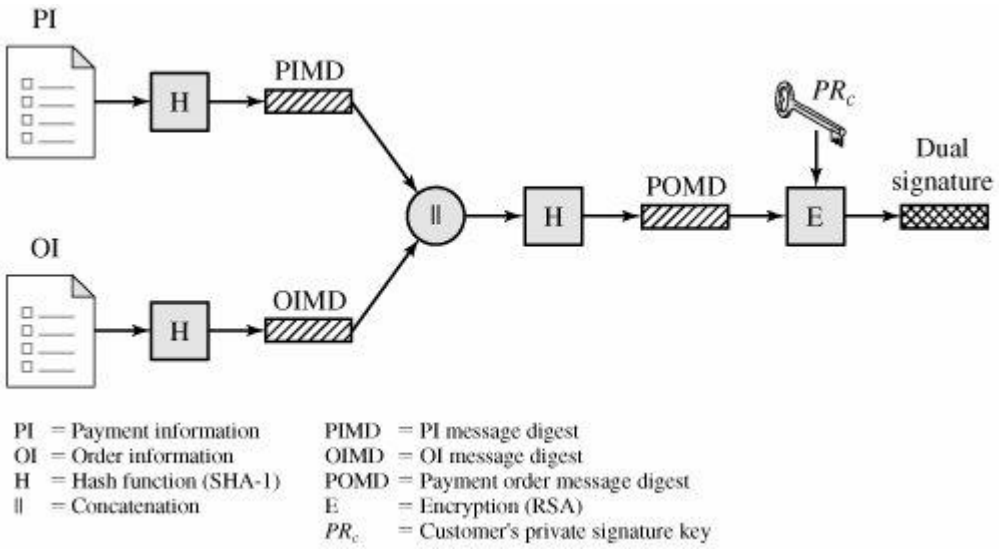

Figure 5.2: Construction of Dual Signature

Where,

- PI stands for payment information
- OI stands for order information
- PIMD stands for Payment Information Message Digest
- OIMD stands for Order Information Message Digest
- POMD stands for Payment Order Message Digest
- H stands for Hashing
- E stands for public key encryption
- PRc is customer's private key
- || stands for append operation
- Dual signature, DS= E(PRc, [H(H(PI)||H(OI))])

8.9 SET SUPPORTED TRANSACTION

Various Transaction are supported by Secure Electronic Transaction

- Card Holder Registration
- Merchant Registration
- Purchase Request
- Payment Authorization
- Payment Capture
- Certificate Query
- Purchase Inquiry, etc

8.10 POINTS TO REMEMBER

- SET is an open encryption and security specification designed to protect credit card transactions on the Internet.
- SET provides a secure communications amongst parties.
- SET ensures privacy the restricted info to those who need it.
- Various components of SET are Customer, Merchant, Issuer, Acquirer, and Certificate Authority.
- The purpose of the Dual Signature is to link two messages that are intended for two different recipients.

8.11 GLOSSARY

- **SET –** Secure Electronic Transaction.
- **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 accepted between the web server and browsers remain private and integral.
- **STT -** STT (Secure Transaction Technology) is a protocol provided by Microsoft and Visa International to the financial and technical communities for review and comment.
- **PKI -** A public key infrastructure (PKI) is a set of roles, policies, and procedures needed to create, manage, distribute, use, store & revoke digital certificates and manage public-key encryption.

8.12 CHECK YOUR PROGRESS

Short Answer type Questions –

13. Define Secure Electronic Transaction.
14. What does all transactions are secure and encrypted mean?
15. How do you secure online payments?
16. How do you know if a website is secure for payment?
17. What do you know about Dual Signature?
18. Name different parties involved in SET.
19. Name different SET supported transaction.
20. What are the steps involved in SET.

Multiple type Questions –

9. The Secure Electronic Transaction protocol is used for
   a) Credit Card Payment b) Cheque Payment
   c) E-cash Payment d) All of above

10. The responsibility of a certification authority for digital signature is to authenticate the
    a) Hash function used b) Private keys of subscribers
    c) Public keys of subscribers d) key used in DES

11. A digital signature needs a
    a) Private-key system b) Shared-key system
    c) Public-key system d) All of them

12. SHA-l has a message digest of
    a) 160 bits b) 512 bits
    c) 628 bits d) 820 bits

13. Message must be encrypted at sender site and decrypted at the
    a) Sender Site b) Site
    c) Receiver site d) Conferencing

Terminal Question –

10. Define SET. What are the different protocols used in SET? Explain.
11. How SET works? Explain in detail.
12. How Dual Signature generated. Explain with neat diagram.
13. Describe key features of SET.
14. What are different requirement of SET. Explain.

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UNIT- 9

DUAL KEY ENCRYPTION

9.1. INTRODUCTION

9.2. OBJECTIVES

9.3. WHAT IS CRYPTOGRAPHY?

9.4. ASYMMETRIC CRYPTOGRAPHY

9.5. DUAL KEY ENCRYPTION

9.6. DIGITAL SIGNATURE

9.7. APPLICATION OF DUAL KEY ENCRYPTION

9.8. POINTS TO REMEMBER

9.9. GLOSSARY

9.10. CHECK YOUR PROGRESS

9.11. BIBLIOGRAPHY/REFERENCES

9.12. SUGGESTED READINGS

9.1 INTRODUCTION

Due to the large number of commercial transactions on the internet, cryptography is very important in ensuring the security of the transactions.

Cryptography allows you to have assurance in your electronic transactions. Encryption is used in electronic transactions to protect data such as account numbers and transaction amounts, digital signatures replace handwritten signatures or credit card authorizations, and public-key encryption provides confidentiality. Key management is an important aspect in encryption that allows you to apply common encryption policies across all data on all managed devices.

The art and science of concealing the messages to introduce secrecy in information security is recognized as cryptography. A message is plaintext (sometimes called cleartext). The process of disguising a message in such a way as to hide its substance is encryption. An encrypted message is ciphertext. The process of turning ciphertext back into plaintext is decryption.

9.2 OBJECTIVES

After successful completion of this unit, the learner will be able to-

- Know about dual key encryption
- Know about public and private key encryption
- Know about digital signatures

9.3 WHAT IS ENCRYPTION?

Encryption is the method by which plaintext or any other type of data is transformed from a readable form to an encoded version that can only be decoded by an additional entity if they have access to a decryption key. Encryption is one of the most significant methods for providing data security, especially for end-to-end protection of data transmitted across networks.

Encryption is widely used on the internet to shield user information being sent among a browser and a server, including passwords, payment information and other private information. Organizations and individuals also normally use encryption to protect sensitive data stored on computers, servers and mobile devices like phones or tablets.

Security Benefits of Encryption

Assume the individual's private key has not been compromised; encrypting data and messages offers the following security benefits.

Confidentiality - The content is encrypted with an individual's public key, it can only be decrypted with the individual's private key, ensuring only the proposed recipient can decrypt and view the contents.

Integrity - Part of the decryption process involves verifying that the contents of the original encrypted message and the new decrypted match, so even the smallest change to the original content would cause the decryption procedure to fail.

Working concept of Encryption

Unencrypted data, often referred to as plaintext, is encrypted using a cryptographic algorithm and an encryption key. This procedure generates ciphertext that can only be viewed in its new form if decrypted with the correct key. Decryption is simply the inverse of encryption, following the same steps but reversing the order in which the keys are applied.

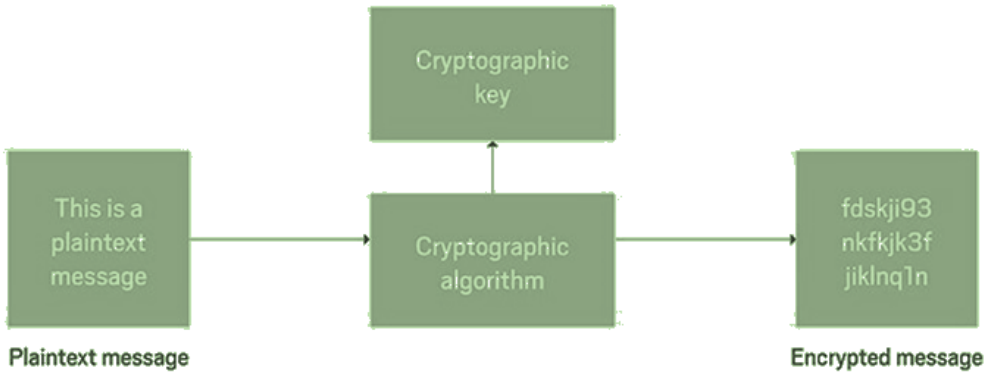


Figure 6.1: Working of Encryption

9.4 ASYMMETRIC CRYPTOGRAPHY

Cryptography is a method of using advanced mathematical principles in storing and transmitting data in a particular form so that only those whom it is proposed can read and process it. Encryption is a key concept in cryptography – It is a process whereby a message is encoded in a format that cannot be read or understood by a technical thief.

Asymmetric encryption uses two keys to encrypt a plain text. Secret keys are exchanged over the Internet or a large network. It ensures that nasty persons do not misuse the keys. It is important to note that a person with a secret key can decrypt the message and this is why asymmetrical encryption uses two related keys to boosting security. Asymmetric key has a far better power in ensuring the security of information transmitted during communication.

Asymmetric encryption is mostly used in day-to-day communication channels, particularly over the Internet. Popular asymmetric key encryption algorithm includes EIGamal, RSA, DSA, Elliptic curve techniques, PKCS.

Difference between Symmetric and Asymmetric Encryption

- Symmetric encryption uses a single key that needs to be shared among the people who need to receive the message while asymmetrical encryption uses a pair of public key and a private key to encrypt and decrypt messages when communicating.
- Symmetric encryption is an old technique while asymmetric encryption is relatively new.
- Asymmetric encryption was introduced to match the inherent problem of the need to share the key in symmetrical encryption model, eliminating the need to share the key by using a pair of public-private keys.
- Asymmetric encryption takes comparatively more time than the symmetric encryption.

When it comes to encryption, the newest schemes may essentially the best fit. You should always use the encryption algorithm that is right for the assignment.

9.5 DUAL KEY ENCRYPTION

Dual key Encryption technique is also known as Public Key or Asymmetric encryption.

This cryptography uses public and private keys to encrypt and decrypt data. The keys are simply large numbers that have been paired collectively but are not identical (asymmetric). One key in the pair can be shared with everyone; it is called the *public key.* The other key in the pair is kept secret; it is called the *private key*. Either of the keys can be used to encrypt a message; the opposite key from the one used to encrypt the message is used for decryption.

Public Key

Public key uses asymmetric algorithms that convert messages into an unreadable format. A person who has a public key can encrypt the message intended for a specific receiver. The receiver with the private key can only decode the message, which is encrypted by the public key. The key is available via the public accessible directory.

Private Key

The private key is a secret key that is used to decrypt the message and the party knows it that exchange message. PKI (public key infrastructure) came into force where a public key is used along with the private key. PKI enables internet users to exchange information in a secure way with the use of a public and private key.

It is computationally infeasible to calculate the private key based on the public key. Because of this, public keys can be freely shared, allowing users an easy and convenient method for encrypting content and verifying digital signatures, and private keys can be kept secret, and ensuring only the owners of the private keys can decrypt content and create digital signatures.

Since public keys need to be shared but are too big to be merely remembered, they are stored on ***digital certificates*** for secure transportation and sharing. Since private keys are not shared, they are simply stored in the software or operating system you use, or on hardware (e.g., USB token, hardware security module) containing drivers that permit it to be used with your software or operating system.

The most commonly used implementations of public key cryptography (also known as public-key encryption and asymmetric encryption) are based on algorithms presented by Rivest-Shamir-Adelman (RSA) Data Security. RSA public key pairs can be any size. Typical sizes today are 1024 and 2048 bits.

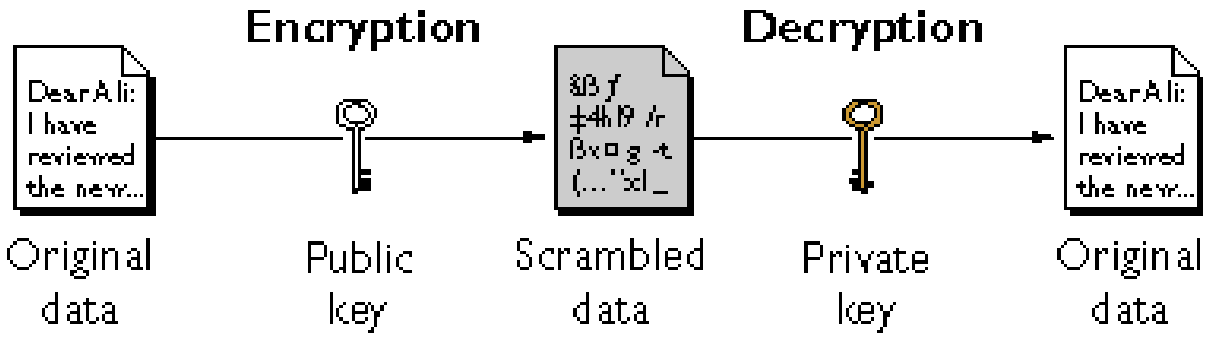


Figure 6.2: Public key Cryptography

Figure 6.2 shows how you can freely share out the public key so that only you (the owner of the private key) can read data that was encrypted with the public key. In general, to send encrypted data to somebody, you must encrypt the data with that person's public key, and the person receiving the data decrypts it with the corresponding private key.

Public key cryptography enables the following:

- Encryption and decryption, which permit two communicating parties to mask data that they send to each other. The sender encrypts, or scrambles, the data prior to sending it. The receiver decrypts, or unscrambles, the data after receiving it. While in transit, the encrypted data is not understood by an intruder.
- Non repudiation, which prevents:

- The sender of the data from claiming, at a later date, that the data was never sent
- The data from being distorted.

Digital certificates are issued by entities known as Certificate Authorities (CAs).

9.6 DIGITAL SIGNATURE

Digital signature is a digital code (generated and authenticated by public key encryption) which is attached to an electronically transmitted document to authenticate its contents and the sender's identity.

Digital Signature is a process that guarantees that the contents of a message have not been distorted in transfer.

When you, the server, digitally sign a document, you add a one-way hash (encryption) of the message content using your public and private key pair.

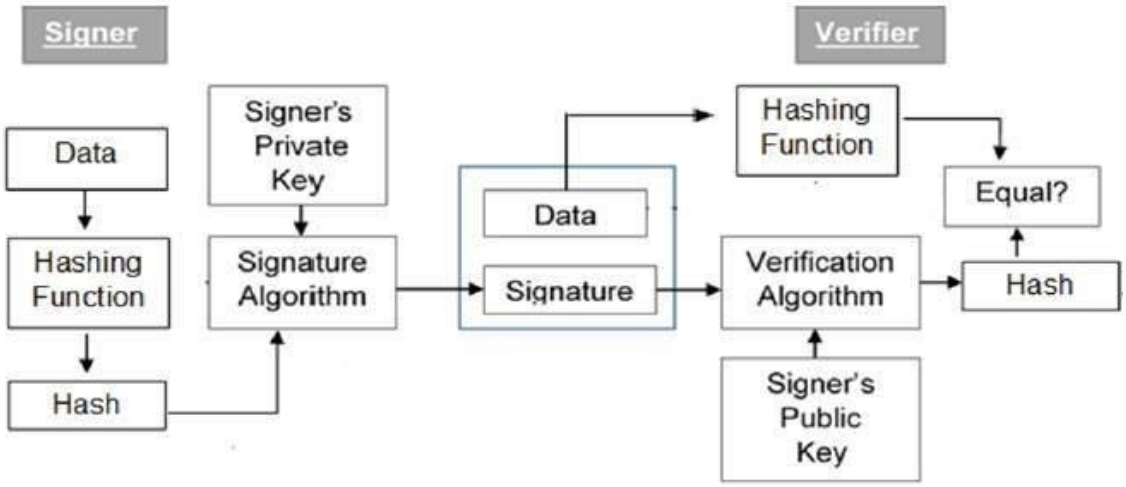
Your client can still read it, but the process creates a "signature" that only the server's public key can decrypt. The client, using the server's public key, can then authenticate the sender as well as the integrity of message contents. If the communication arrives but the digital signature does not match the public key in the digital certificate, then the client knows that the message has been distorted.

Digital Certificates are not only issued to people but they can be issued to computers, software packages or anything else that need to prove the identity in the electronic world.

- Digital certificates are based on the ITU standard X.509 which defines a standard certificate format for public key certificates and certification validation. Hence digital certificates are sometimes also referred to as X.509 certificates.
- Public key pertaining to the user client is stored in digital certificates by The Certification Authority (CA) along with other relevant information such as client information, expiration date, usage, issuer etc.
- CA digitally signs this entire information and includes digital signature in the certificate.
- Anyone who needs the guarantee about the public key and linked information of client, he carries out the signature validation process using CA’s public key. Successful validation assures that the public key given in the certificate belongs to the person whose details are given in the certificate.

Model of Digital Signature

Following figure depicts the model of digital signature scheme.



The following points explain the above entire process in detail −

- Each person adopting this system has a public-private key pair.
- Usually, the key pairs used for encryption/decryption and signing/verifying are different. The private key used for signing is referred to as the signature key and the public key as the authentication key.
- Signer feeds data to the hash function and generates hash of data.
- Hash value and signature key are then included to the signature algorithm which produces the digital signature on specified hash. Signature is appended to the data and then both are sent to the verifier.
- Verifier feeds the digital signature and the verification key into the verification algorithm. The verification algorithm gives some value as output.
- Verifier also runs same hash function on received data to generate hash value.
- For verification, this hash value and output of verification algorithm are compared. Based on the comparison result, verifier decides whether the digital signature is valid.
- Since digital signature is created by 'private' key of signer and no one else can have this key; the signer cannot reject signing the data in future.

Security Benefits of Digital Signatures

Assuming the private key has remained secret and the individual it was issued to is the only person with access to it, digitally signing documents and emails offers the following benefits.

Authentication – Because the individual's unique private key was used to apply the signature, recipients can be confident that the individual was the one to actually apply the signature

Non-repudiation – Because the individual is the only one with access to the private key used to apply the signature, he/she cannot later claim that it wasn't him/her who applied the signature

Integrity - When the signature is verified, it checks that the contents of the document or message match what was in there when the signature was applied. Even the slightest change to the original document would cause this check to fail.

9.7 APPLICATION OF DUAL KEY ENCRYPTION

- The most evident application of a public key encryption system is in encrypting communication to provide confidentiality – a message that a sender encrypts using the recipient's public key can be decrypted only by the recipient's matching private key.
- Another application in public key cryptography is the digital signature. Digital signature schemes can be used for sender authentication.
- Non-repudiation system use digital signatures to make sure that one party cannot successfully clash its authorship of a document or communication.
- Added applications built on this foundation include: *digital cash, password-authenticated key agreement, time-stamping services, non-repudiation protocols, etc*.
- Because asymmetric key algorithms are nearly always much more computationally intensive than symmetric ones, in many cases it is common to exchange a key using a key-exchange algorithm, and then broadcast data using that key and a symmetric key algorithm. PGP, SSH, and the SSL/TLS family of schemes use this procedure, and are thus called hybrid cryptosystems.

9.8 POINTS TO REMEMBER

- Encryption is the method by which plaintext or any other type of data is transformed from a readable form to an encoded version that can only be decoded by an additional entity if they have access to a decryption key.
- Dual key or Public-key cryptography, or asymmetric cryptography, is a cryptographic system that uses pairs of keys: public keys which may be spread widely, and private keys which are known only to the vendor.
- Digital signatures, in which a message is signed with the sender's private key and can be confirmed by anyone who has access to the sender's public key.
- A public key is a large numerical value that is used to encrypt data.
- A private key is another large numerical value that is mathematically linked to the public key.

9.9 GLOSSARY

- **PKI -** A public key infrastructure (PKI) is a set of roles, policies, and actions needed to create, administer, issue, use, store & revoke digital certificates and manage public-key encryption.

- **PKC -** Public key cryptography (PKC) is an encryption technique that uses a paired public and private key (or asymmetric key) algorithm for protected data communication.
- **RSA -** RSA encryption is used in grouping with other encryption schemes, or for digital signatures which can prove the validity and integrity of a message.
- **DSA -** A digital signature algorithm (DSA) refers to a standard for digital signatures. It was introduced in 1991 by the National Institute of Standards and Technology (NIST) as an improved method of creating digital signatures.

9.10 CHECK YOUR PROGRESS

Short Answer type Questions –

18. Define Dual key Cryptography.
19. What is the benefit of using encryption?
20. How Symmetric and Asymmetric encryption techniques are different to each other?
21. Explain briefly the term DSA.
22. What are the advantages of Digital Signature?
23. Make a diagram showing the method involved in digital signature.
24. What are the applications of dual key encryption?

Multiple type Questions –

16. In asymmetric key cryptography, the private key is kept by
    a) sender b) receiver
    c) sender and receiver d) all the connected devices to the network

17. Which one of the following algorithm is not used in asymmetric-key cryptography?
    a) rsa algorithm b) diffie-hellman algorithm
    c) electronic code book algorithm d) none of the mentioned

18. An asymmetric-key (or public-key) cipher uses
    a) 1 key b) 2 key
    c) 3 key d) 4 key

19. We use Cryptography term to transforming messages to make them secure and immune to
    a) Change b) Idle
    c) Attacks d) Defend

20. Man-in-the-middle attack can endanger security of Diffie-Hellman method if two parties are not
    a) Authenticated b) Joined
    c) Submit d) Separate

Terminal Question –

15. Why Asymmetric encryption techniques are better than Symmetric encryption technique? Discuss.
16. Explain with a neat diagram model of digital signature?
17. Describe public key cryptography with diagram.
18. What are different types of algorithm involved in cryptography? Discuss in detail
19. Explain the advantages of Dual key cryptography.

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UNIT- 10

DIGITAL SIGNATURES- TECHNICAL ISSUES AND LEGAL ISSUES

9.13. INTRODUCTION

9.14. OBJECTIVES

9.15. DIGITAL SIGNATURE OVERVIEW

9.16. LEGAL ISSUES

9.17. TECNICAL ISSUES

9.18. POINTS TO REMEMBER

9.19. GLOSSARY

9.20. CHECK YOUR PROGRESS

9.21. BIBLIOGRAPHY/REFERENCES

9.22. SUGGESTED READINGS

10.1 INTRODUCTION

The need for electronic signatures in management processes is becoming more important as value chain and supplier flows become fully electronic. Many operations and process managers have introduced electronic tools for sign-off within process flows. However, few realize the legal implications or validity of international processes that use electronic signatures. Fully electronic information flows facilitate global commerce, but when working in the global market place, international information transfers become subject to different legal frameworks.

The need for electronic signatures in management processes is becoming more important as process flows become fully electronic. When working in the global market place, international information transfers become subject to different legal frameworks. For electronic signature infrastructures to work effectively they require not only technological solutions but also an authoritative infrastructure. The absence of a common legal base regarding digital signature technology makes it very difficult for most businesses to implement a digital signature system. Business transactions cannot be completed electronically unless digital signatures can be legally validated and enforced, which would require their acceptance as being legally binding during arbitration. There is conflicting opinion and uncertainty as to the legal basis of digital signatures. There are many loopholes that people can take advantage of, and little case law to act as a guide. This is currently seen as a barrier by many to the introduction of electronic value streams.

10.2 OBJECTIVES

After successful completion of this part, the learner will be able to-

- Know about Laws of Digital Signature in India
- Know about Legal issues in India
- Know about technical issues in India

10.3 DIGITAL SIGNATURE OVERVIEW

Digital signature is electronically generated and can be used to make sure the truthfulness and legitimacy of data. The dawn of information technology revolutionized the whole world; India is not an exception to it; as technological activism is the social behaviour in India.

What makes an electronic signature legal?

Digital Signatures are legally-bind for many countries where electronic signatures are recognized. Some of the criteria that are normally used in this type of legislation to certify the legality of electronic signatures require that:

1. The document signer can be exclusively identified and linked to the signature
2. The signer must be the only party with access to the private key (a cryptographic term) used to create the signature
3. The signature must be able to identify if the associated data has been tampered with, post-signing
4. And, if the data has been changed, the signature must be able to be voided.

Various Laws governing Digital Signature in India –

- **IT Act Provisions Related to Digital Signature**

Section 3 of IT Act, made the provision for it as: Authentication of electronic records.-

Subject to the provisions of this section, any subscriber may authenticate an electronic record by affixing his digital signature.

In IT Act, chapter 3 related to electronic governance, sections 4 and 5 are quite relevant.

Section 4 made the provision for Legal recognition of electronic records -

Where any law provides that information or any other matter shall be in writing, typewritten or printed form then not-withstanding anything contained in such law, given requirement shall be deemed to have been satisfied if such information or matter is—

(a) Rendered or made available in an electronic form; and

(b) Accessible so as to be usable for a subsequent reference

Section 5 Legal recognition of [electronic signatures] –

Where law provides that information or any other matter shall be authenticated by affixing the signature or any document should be signed or bear the signature of any person then, notwithstanding anything contained in such law, such requirement shall be deemed to have been satisfied, if such information or matter is authenticated by means of [electronic signatures] affixed in such manner as may be prescribed by the Central Government.

- **The Indian Evidence Act and Digital Signature**

After the ***IT Act 2000***, it was necessary to make an applicable amendment in the Indian Evidence act, to make it compatible.

Section 3 in the definition of "Evidence", for the words "all documents produced for the inspection of the Court", the word "all document including electronic records produced for the inspection of the Court"

Section 47A, says when the court has to form an opinion as to the digital signature or any person, the opinion of the certifying authority which has issued the Digital Signature Certificate is a relevant fact. It means while drawing the conclusion, court gives the weight of the digital signature as a relevant fact.

Further 67A proof as to digital signature – except in the case of a secure digital signature, if the digital signature of any subscriber is alleged to have been affixed to an electronic

record the fact that such digital signature is the digital signature of the subscriber must be proved.

Section 85B exhibits the positive presumption as Presumption as to electronic records and digital signatures. In any proceedings involving a secure electronic record, the Court shall presume unless contrary is proved, that the secure electronic record has not been altered since the specific point of time to which the secure status relates.

- **Indian Penal Code**

Section 464 **making a false document:** A person is said to make a false document or false electronic record—

First - Who dishonestly or fraudulently- Makes or transmits any electronic record or part of any electronic record; affixes any [electronic signature] on any electronic record; makes any mark denoting the execution of a document or the authenticity of the [electronic signature], with the intention of causing it to be believed that such a document or a part of document, electronic record or [electronic signature] was made, signed, sealed, executed, transmitted or affixed by or by the authority of a person by whom or by whose authority he knows that it was not made, signed, sealed, executed or affixed; or

Secondly - Who, without lawful authority, dishonestly or fraudulently, by cancellation or otherwise, alters a document or an electronic record in any material part thereof, after it has been made, executed or affixed with [electronic signature] either by himself or by any other person, whether such person be living or dead at the time of such alteration; or

Thirdly - Who dishonestly or fraudulently causes any person to sign, seal, execute or alter a document or an electronic record or to affix his [digital signature] on any electronic record knowing that such person by reason of unsoundness of mind or intoxication cannot, or that by reason of deception practiced upon him, he does not know the contents of the document or electronic record or the nature of the alteration.

10.4 LEGAL ISSUES

Digital signatures get extra validation from the relevant Electronic Transactions Acts if they fulfil with the specified conditions. There are near-uniform statutes at Commonwealth, state and territory level. It is important to be aware of the nuances of the law in each authority.

Generally, for an electronic signature to be deemed effective under the Electronic Transactions Acts, the following conditions must be satisfied:

Identity: The person must use a method to identify themselves and indicate their intention.

Reliability: The method of identification must be as reliable as appropriate considering the purpose of the communication.

Consent: The person to whom the signature is given must consent to the use of electronic communication to fulfil the requirement for a signature and to the method of identification.

It's important to remember that these statutes are facilitative rather than regulatory so they don't displace the common law unless expressly apparent in the statute. The point is to give statutory validation to, and increase confidence in, transactions that conform to certain conditions, rather than to invalidate transactions that don't conform.

There are many legal issues regarding Digital Signatures

- ***User Authentication Risk: "This Isn't My Signature"*** - While the vast majority of legal disputes challenge the terms and conditions of a signed document, not whether a signature belongs to a person, user authentication is still a risk organizations must address, especially when doing business with new and unknown customers over the web.

  In the event that a person denies having signed a record, a point to consider for determining the legitimacy of the claim is whether the person, subsequent to the transaction, made a payment to obtain the product or service? Further, what would motivate the person to make a fraud claim, knowing that without the existence of a valid contract, the relationship would be rendered null and void, and the claim would be moot?

- ***Repudiation Risk: "That's not what I signed"*** - Repudiation generally occurs when a customer has provided false information in a document or now disagrees with terms and conditions to which they had originally agreed. Therefore the customer is asserting that although they did sign a document, either the document or their signature has been altered.
- ***Admissibility Risk: "Objection, Your Honor"*** - Risk of admissibility is the risk that an e-contract cannot be enforced, because it does not provide strong enough evidence and, therefore, is not admissible in court.

  To diminish admissibility risk, look for an e-signature solution that enables organizations to capture and reproduce every step that occurred during the transaction execution.

- ***Compliance Risk: "I Never Saw that"*** - E-Signatures can mitigate compliance risk by enforcing regulatory requirements and proving that compliant processes were followed throughout a transaction.

10.5 TECHNICAL ISSUES

Various technical issues regarding Digital Signatures are -

- With over 70% of the Indian population living in non-urban areas, the knowledge, understanding and dire need for electronic signatures is grossly understated.
- Electronic signatures are not valid on all types of documents. The documents on which electronic signatures can be applied to vary from country to country.

- In India digital signatures cannot be applied to wills, transfer of immovable property, power of attorney, a trust, a negotiable instrument or any other document notified by the Government from time to time.
- Biometric scanners may not always be available, limiting the types of authentication provided.
- Not all organizations can use biometric facilities to enable electronic signatures.

Solution to Technical challenges in India –

- Everyone has an Aadhaar ID, well at least 99% of the population (over 18 years) does. This means that most people will be able to use electronic signatures in India.
- Once people realise the benefits of digital signature, for example, an individual in a village can sign a document in any city, authorizing his consent for a service or to an agreement, etc. without ever having to leave his or her home.

10.6 POINTS TO REMEMBER

- Digital signature is electronically generated and can be used to make sure the truthfulness and legitimacy of data
- There are many regulations which govern legal issues of digital signatures.
- Technical issues can be solved by providing necessary information to the people, regarding the use and benefits of digital signatures.

10.7 GLOSSARY

- **Algorithm –** A rule or procedure for solving a logical or mathematical problem.
- **CA –** A certification authority, or CA, is the person or company who issues digital certificates to subscribers. They act as a trusted "third party" certifying the identity of the subscriber to anyone who receives a digitally signed message.
- **Keys -** Pieces of information that are used to encrypt or decrypt a message. The key can "lock" data and make it illegible, and a corresponding key can "unlock" that data and allow use of that data. In most digital signature programs, keys are very long prime numbers.

10.8 CHECK YOUR PROGRESS

Short Answer type Questions –

21. Define Digital Signatures.
22. What are the benefits of using Digital signatures?
23. Describe any one act which is responsible for handling legal issue?
24. What are technical issues of digital signature in India?
25. How technical issues can be handled?

Multiple type Questions –

14. A digital signature needs a
    a) Private-key system b) Shared-key system
    c) Public-key system d) All of them

15. A sender must not be able to deny sending a message that was sent, is known as
    a) Message Non repudiation b) Message Integrity
    c) Message Confidentiality d) Message Sending

16. To preserve the integrity of a document, both the document and the fingerprint are
    a) Not Used b) Unimportant
    c) Needed d) not needed

17. The sender 'signs' a message as
    a) Digital Signature b) Artificial signature
    c) Encrypted Signature d) All of the above

18. DES stands for
    a) Data Encryption Standard b) Data Encryption System

Terminal Question –

15. What are the main legal issues in using digital signatures?
16. What are the solutions of legal issues? Explain.
17. How technical issues make a hindrance in using digital signatures?
18. Explain benefits of using Digital Signatures.

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UNIT- 11

SECURITY ISSUES IN E-COMMERCE

11.1. INTRODUCTION

11.2. OBJECTIVES

11.3. APPLICATION OF E-COMMERCE

11.4. TYPES OF E-COMMERCE

11.5. ADVANTAGES & DISADVANTAGES OF ECOMMERCE

11.6. SECURITY ISSUES OF E-COMMERCE

11.7. POINTS TO REMEMBER

11.8. GLOSSARY

11.9. CHECK YOUR PROGRESS

11.10. BIBLIOGRAPHY/REFERENCES

11.11. SUGGESTED READINGS

11.1 INTRODUCTION

Ecommerce, also known as electronic commerce or internet commerce, refers to the buying and export of goods or services using the internet, and the transfer of money and data to complete these transactions. Ecommerce is often used to refer to the sale of physical products online, but it can also give details of commercial transaction that is facilitated through the internet.

E-commerce is a type of business model for a small or larger business that enables a firm or individual to conduct business using electronic media such as internet.

It can be divided into four major areas based on type of business and the parties involved in business. They are business to business, business to consumer, consumer to consumer and consumer to business. This chapter explains about E-commerce, importance of E-commerce. This is also explains in detail about current security issues, E-commerce threats, risks and privacy issues related to various areas of e commerce.

11.2 OBJECTIVES

After successful completion of this unit, the learner will be able to-

- Know about E-Commerce
- Know about advantages and disadvantages of e-commerce
- Know about issues related to e-commerce

11.3 APPLICATION OF E-COMMERCE

The applications of E-commerce are used in a variety of business areas such as retail and wholesale and manufacturing. The most common E-commerce applications are as follows:

- ***Online marketing and purchasing***
  Data collection about customer performance, preferences, needs and buying patterns is possible through Web and E-commerce. This helps marketing activities such as price fixation, negotiation, product feature enhancement and relationship with the customer.
- ***Retail and wholesale***
  E-commerce has a number of applications in retail and wholesale. E-retailing or on-line retailing is the selling of goods from Business-to-Consumer through electronic stores that are designed using the electronic catalogue and shopping cart model.
- ***Finance***

Financial companies are using E-commerce to a large amount. Customers can check the balances of their savings and loan accounts, transfer money to their other account and pay their bill through on-line banking or E-banking.

- ***Manufacturing***
  E-commerce is also used in the supply chain operations of a company. Some companies form an electronic exchange by provided that together buy and sell goods, trade market information and run back office information such as inventory control.
- ***Online Auction***
  Customer-to-Customer E-commerce is direct selling of goods and services among customers. It also includes electronic auctions that involve bidding.
- ***E-Banking***
  Online banking or E- banking is an electronic payment system that enables customers of a financial institution to conduct financial transactions on a website.
- ***Online booking (ticket, seat.etc)***
  Online banking or E- banking is an electronic payment organization that enables customers of a financial institution to carry out financial transactions on a website.
- ***Education***
  In educational training also e-commerce has a major role in interactive education, video conferencing, and online class and for connecting different educational training centres.

11.4 TYPES OF E-COMMERCE

E-Commerce is a subset of the e-business that concerns commerce. The activity of the exchange of goods and services with some of the other kind of payment methods can be intended as commerce.

E-commerce is categorised into six major types they are:

- ***(B2B) Business-to-Business***
  This is Business to Business transactions. Here the companies are doing business with each other. The final consumer is not involved. So the online transactions only involve the manufacturers, wholesalers, retailers etc.
- ***(B2C) Business-to-Consumer***
  Here the company will sell their goods and/or services directly to the consumer. The consumer can browse their websites and look at products, pictures, read reviews. Then they place their order and the company ships the goods directly to them. Popular examples are Amazon, Flipkart, Jabong etc.
- ***(C2C) Consumer-to-Consumer***
  Here the consumers are in direct contact with each other. No company is involved. It helps people sell their personal goods and assets directly to an interested party. Usually, goods traded are cars, bikes, electronics etc. OLX, Quikr etc follow this model.

- ***(C2B) Consumer-to-Business***
  This is the reverse of B2C; it is a consumer to business. So the consumer provides a good or some service to the company. Say for example an IT freelancer who demos and sells his software to a company. This would be a C2B transaction.

11.5 ADVANTAGES & DISADVANTAGES OF ECOMMERCE

Various Advantages of E-Commerce

- Wide variety of products
- Lower Cost than traditional shopping and selling
- Less time consuming and faster consumer consumption
- Exciting offers and shopping deals notifications
- Transparent business system
- Faster business expansion
- More employment opportunities
- Enhancement in digital products and services production
- Low maintenance cost
- Multiple selling and marketing options
- More Customer retention than traditional shopping
- Quality compulsion for sellers
- More Contribution of customers in brand success
- Personalised customer experiences
- Speeding up the national economic development
- Enhancing Technology development in villages

Disadvantages of E-Commerce

- There can be lack of system safety, reliability or standards owing to poor implementation of e-commerce.
- The software development industry is still evolving and keeps changing rapidly.
- In many countries, network bandwidth might cause an issue.
- Special types of web servers or other software might be necessary by the vendor, setting the e-commerce surroundings apart from network servers.
- Sometimes, it becomes difficult to put together an e-commerce software or website with existing applications or databases.
- There could be software/hardware compatibility issues, as some e-commerce software may be mismatched with some operating system or any other component.

11.6 SECURITY ISSUES OF E-COMMERCE

In spite of its advantages and limits of E-commerce has got some security issues in practical. E-commerce security is nothing but preventing loss and protective the areas financially and informational from illegal access, use or demolition.

1. Intellectual property threats: Some browsers use the information personally from a website without permission of the website owner. For example, music downloads, software pirating etc.

- *To get rid of this problem website owners have to use secured authentication system.*

2. Client computer threats: Sometimes client computers may force for electronic threats like Trojan horse, viruses. Which enters the client computer without user's knowledge, steal the data and destroy or crash the client computer.

- *To avoid these types of threats we need to use good antivirus system which should be updated regularly. The website owners should implement a strong privacy policy.*

3. Communication channel threats: As internet allows anyone to send and receive information through many networks. Data may be stolen, modified by unauthorized users of hackers. Hackers can develop software to steal the user Identification and pass words as well. Spoofing is another major threat while data is being transmitted electronically. Denial of service is also one of communication channel threat, where hackers' sends unlimited number of requests to the target server, which big number of requests may not be handled by the server. Obviously the genuine user will find websites of that server are always busy.

- *We can overcome the communication channel threats using public key encryption and private key encryption. We can also use proper protocols to get rid of communication channel threats.*
- *Digital signatures are another way we can follow to minimize these kinds of threats. Where the actual message which we need to send is decrypted and bound with sender's private key and a signature is added to that will be send to the receiver. The receiver uses sender's public key and signature for decryption to see the actual message.*

4. Server threats: Denial of service is a major threat for the servers, where hackers generate a program which sends many requests from the client side that cannot be handled by the server. Spamming is another important threat for the servers.

- *To protect our server from the above threats we can use authentication for web access, digital signatures and firewalls. Firewalls check the incoming requests packets and if anything which does not match with the server related data, they simply reject those requests.*
- *Some of the tools to achieve the security they are encryption, firewalls, security tools, access controls, proxy systems, authentication and intrusion detection.*

5. Technical Ecommerce Problems

The most common ecommerce inconvenience that online stores face today, relates to technology. Some of the major Technical Issues are –

a) **Web Hosting**
Shared hosting has its limits in terms of bandwidth and storage space. This means if the traffic your store gets on a regular basis exceeds even a little, the website will collapse.
To overcome this, cloud is a reliable, low cost solution that lets users maximize their growth potential through an enhanced hosting experience.

b) **Server Scaling**
This happens when the hosting is either on a dedicated server or a VPS server. Both of these take days to scale because the hosting company has to physically upgrade the servers to provide more resources.
For this to solve, a cloud hosting solution that offers automatic server scaling is benefitted. There are a few organizations, including AWS, Google Cloud that offer auto server scaling feature for their customers.

HOW TO DEVELOP AN E-COMMERCE SECURITY PLAN:

Following are the points needed to be remember for e-commerce security plan-

- Perform a risk assessment
- Develop a security policy
- Develop an implementation plan
- Create a security organization
- Perform a security audit

11.7 POINTS TO REMEMBER

- E-commerce is a type of business model for a small or larger business that enables a firm or individual to conduct business using electronic media such as internet.
- People paying more attention to do electronic transaction using internet because, they can do these from any place in the world at any time they wish.
- The important advantage of e-commerce is the cheapest means of doing business.
- The main disadvantage of E-commerce is the lack of a business model, lack of trust and key public infrastructure, slow navigation on the Internet, the high risk of buying unsatisfactory products, and most of all lack of security.

11.8 GLOSSARY

- **B2B -** The process of selling services or products to another business, which typically then sells to the consumer.
- **B2C -** The process of selling services or products directly from the business to the consumer.
- **Mobile Commerce -** The process of buying products or services on a mobile or wireless handheld device.

- **Shopping Cart -** An e-Commerce shopping cart is the contents of what a user has added to his online order. All the products appear as a mass order on the page or in this case "in the cart."
- **Payment Gateway -** The payment processor used to handle transactions on your ecommerce store, your payment gateway can be either on-site or off-site, depending on what works best for your model.

11.9 CHECK YOUR PROGRESS

Short Answer type Questions –

25. What is E-Commerce?
26. What are different applications of e-Commerce?
27. Discuss various limitation of E-commerce.
28. What are different precautions needed to be taken while using e-commerce application.
29. How to develop an e-commerce security plan?
30. What are technical e-commerce problems? How can they be solved?
31. List the threats of using e-commerce platform.

Multiple type Questions –

21. ……is concerned with the buying and selling information, products and services over computer communication networks.
    a) Commerce (b) E-Commerce
    (c) E-Business (d) None of these

22. ……is basically a concept of online marketing and distributing of products and services over the internet.
    (a) B2G (b) B2E
    (c) B2C (d) B2B

23. Which of the following is not suitable for a B2C transaction?
    a) Clothes (b) flowers
    (c) Airline reservation (d) none

24. Which among the following is an example of C2C?
    (a) e-Bay (b) Amazon.com
    (c) Rentalic.com (d) all of these

25. ……..is the buying and selling of goods and services through wireless handled devices such as cellular phone and Personal Digital Assistants.
    (a) Mobile Commerce (b) e-commerce
    (c) Both of these (d) none of these

Terminal Question –

20. What security risk does e-commerce involve?
21. How E-commerce works?
22. Explain in brief B2B, B2C, C2B and C2C.
23. Explain electronic payment procedure.
24. Discuss various advantages and disadvantages of e-commerce.

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UNIT- 12
EVIDENCE RELATED ISSUES

11.12. INTRODUCTION

11.13. OBJECTIVES

11.14. WHAT IS EVIDANCE?

11.15. TYPES OF EVIDANCE

11.16. POINTS TO REMEMBER

11.17. GLOSSARY

11.18. CHECK YOUR PROGRESS

11.19. BIBLIOGRAPHY/REFERENCES

11.20. SUGGESTED READINGS

12.1 INTRODUCTION

Evidence is about accountability. Evidence is part of our everyday life and it helps us measure the impact and efficiency of our work. When it comes to interventions for young people and children, evidence helps us to set up what types of programmes are more effective and can make a positive impact on the lives of our beneficiaries.

Through evidence we can learn and improve our practice, raising the value of our work for funders, commissioners, researchers and, most importantly, for the young people and the families we support.

12.2 OBJECTIVES

After successful completion of this part, the learner will be able to-

- Know about Evidence
- Know about types of Evidence

12.3 WHAT IS EVIDENCE?

Generally, evidence is proposed as any argument or "proof" in support of a conclusion or declaration. It can be seen as information that helps us prove or display truth – or contradict something that is false.

Evidence can come in many different forms, linked to different disciplines. There are many different types of evidence, from stories and testimony, to data from surveys or scientific trials. For public health interventions, including hindrance science and practice, evidence refers to the effectiveness of an intervention in achieving certain outcomes that contribute to long lasting changes in the population health and behaviours.

Evidence forms the building blocks of the investigative procedure and for the final product to be built properly, evidence must be recognized, collected, documented, protected, validated, analyzed, disclosed, and presented in a manner which is acceptable to the court.

Evidence can be "weak" or "strong". There are different levels of value attached to different forms of evidence, different grades that recognize good quality of evidence and that establish what counts as good evidence. That means drafting well-defined standards in order to classify the levels of evidence-based research.

Whatever form or level of evidence we need to explain, it is important to consider the audience for your evidence, and the use you want to make of it.

How should evidence be used?

Using solid evidence can help us measure impact, better notify policy guidance and improve professional service delivery. Evidence should be used in the design, delivery and assessment of programmes targeting young people.

Here are some important principles about using evidence:

- Evidence is support, not proof or truth, of an declaration
- Evidence provides a deeper understanding and insight into the impact of work
- Evidence gives opportunities for reflection and enhancement
- Evidence is for anyone, adding value to all those concerned in the delivery of, or benefitting from, services

12.4 TYPES OF EVIDENCE

The term "evidence", as it relates to investigation, speaks to a wide range of information sources that might eventually inform the court to prove or disprove points at issue before the Trier of fact. Sources of evidence can include anything from the observations of witnesses to the examination and analysis of physical objects. It can even include the spatial relationships between people, places, and objects within the timeline of events. From the various forms of evidence, the court can draw inferences and reach conclusions to determine if a charge has been proven beyond a sensible doubt.

There are various types of evidence -

- ***Eye Witness Evidence*** **-** A competent, compellable, independent, eye witness with excellent physical and mental capabilities, who has seen the criminal event take place and can recount the facts, will normally please the court and supply evidence that has high probative value.

- ***Physical Evidence*** **-** The court will also generally attribute a high probative value to physical exhibits. The court likes physical evidence because they are items the court can see and examine to understand the facts in issue for proof beyond a reasonable doubt. Physical evidence can include just about anything, such as weapons, fingerprints, shoe prints, tire marks, tool impression, hair, fibre, or body fluids. These kinds of physical exhibits of evidence can be examined and analyzed by experts who can provide the court with expert opinions that connect the item of evidence to a person, place, or the criminal event.

- ***Relevant Evidence*** **-** Relevant evidence speaks to an issue before court in relation to the charge being heard. Relevant evidence includes both direct evidence and indirect circumstantial evidence. For either direct or indirect incidental evidence to be considered relevant to the court, it must relate to the elements of the offence that need to be proven. If the evidence does not relate to proving the place, time, identity of the accused, or criminal acts within the offence itself, the evidence will not be considered relevant to the charge.

- ***Direct Evidence*** **-** Direct evidence is evidence that will prove the point in fact without interpretation of circumstances. It is any evidence that can show the court that something occurred without the need for the judge to make inferences or assumptions to reach a conclusion. An eyewitness who saw the accused shoot a victim would be able to provide direct evidence. Similarly, a security camera showing the accused committing a crime or a statement of confession from the accused admitting to the crime could also be considered direct evidence.

- ***Circumstantial Evidence*** **-** Indirect evidence, also called circumstantial evidence, is all other evidence, such as the fingerprint of an accused found at the crime scene. Indirect evidence does not by itself prove the offence, but through interpretation of the circumstances and in conjunction with other evidence may contribute to a body of evidence that could prove guilt further than a realistic doubt. Strong circumstantial evidence that only leads to one logical conclusion can sometimes become the evidence the court uses in reaching belief beyond a reasonable doubt to convict an accused.

- ***Inculpatory Evidence*** **-** Inculpatory evidence is any evidence that will directly or indirectly link an accused person to the offence being investigated. For an investigator, Inculpatory evidence can be found in the victim's complaint, physical evidence, witness accounts, or the circumstantial relationships that are examined, analysed, and recorded during the investigative process. It can be anything from the direct evidence of an eyewitness who saw the accused committing the crime, to the circumstantial evidence of a fingerprint found in a location connecting the accused to the victim or the crime scene.

- ***Exculpatory Evidence*** **-** Exculpatory evidence is the exact opposite of Inculpatory evidence in that it tends to show the accused person or the suspect did not commit the offence. It is important for an investigator to not only look for Inculpatory evidence, but to also consider evidence from an exculpatory perspective. Considering evidence from the exculpatory perspective demonstrates that an investigator is being objective and is not falling into the trap of tunnel vision. If it is possible to find exculpatory evidence that shows the suspect is not responsible for the offence, it is helpful for police because it allows for the elimination of that suspect and the redirecting of the investigation to pursue the real perpetrator.

- ***Corroborative Evidence*** **-** The term corroborative evidence essentially refers to any type of evidence that tends to support the meaning, validity, or truthfulness of another piece of evidence that has already been presented to the court. A piece of corroborative evidence may take the form of a physical item, such as a DNA sample from an accused matching the DNA found on a victim, thus corroborating a victim's testimony. Corroborative evidence might also come

from the statement of one independent witness providing testimony that matches the account of events described by another witness. If it can be shown that these two witnesses were separated and did not collaborate or hear each other's account, their statements could be accepted by the court as mutually corroborative accounts of the same event.

- ***Disclosure of Evidence -*** In the disclosure process, the decision to disclose or not to disclose is the exclusive domain of the crown prosecutor and, although police investigators may submit information and evidence to the prosecutor with the request that the information be considered an exception to the disclosure rules, the final decision is that of the crown. That said, even the decision of the crown may be challenged by the defence and that then becomes a final decision for the Judge. The prosecutor will ask the police to provide a full disclosure of the evidence gathered during their investigation.

  The list of what should form part of a normal disclosure will typically include:

  - ✓ *Charging document*
  - ✓ *Particulars of the offence*
  - ✓ *Witness statements*
  - ✓ *Audio/video evidence statements by witnesses*
  - ✓ *Statements by the accused*
  - ✓ *Accused's criminal record*
  - ✓ *Expert witness reports*
  - ✓ *Notebooks and Police reports*
  - ✓ *Exhibits*
  - ✓ *Search warrants*
  - ✓ *Authorizations to intercept private communications*
  - ✓ *Similar fact evidence*
  - ✓ *Identification evidence*
  - ✓ *Witnesses' criminal records*
  - ✓ *Reports to Crown Counsel recommending charges*
  - ✓ *Witness impeachment material*

- ***Witness Evidence -*** Witness evidence is evidence obtained from any person who may be able to provide the court with information that will assist in the adjudication of the charges being tried. This means that witnesses are not only persons found as victims of a crime or on-scene observers of the criminal event. They may also be persons who can inform the court on events leading up to the crime, or activities taking place after the crime. These after-the-crime activities do not just relate to activities of the suspect, but also include the entire range of activities required to investigate the crime. Consequently, every police officer involved in the investigation, and every person involved in the handling, examination, and analysis of evidence to be presented in court, is a potential witness.

- ***Hearsay Evidence*** **-** Hearsay evidence, as the name implies, is evidence that a witness has heard as a communication from another party. In addition to verbal communication, legal interpretations of the meaning of hearsay evidence also include other types of person-to-person communication, such as written statements or even gestures intended to convey a message. Hearsay evidence is generally considered to be inadmissible in court at the trial of an accused person for several reasons; however, there are exceptions where the court will consider accepting hearsay evidence.

- ***Search and Seizure of Evidence*** **-** In order for items of physical evidence to be accepted by the court as exhibits, each item of evidence must meet the test of having been searched for and seized using the correct lawful authorities. There are a number of ways in which items of evidence may be legally searched for and seized.

- ***Exclusion of Evidence by the Court*** **-** In hearing any case, the court has the authority to either accept or exclude any piece of evidence being presented. An evaluation is applied to all evidence to determine if it will be admissible or excluded. The types of evidence that can be admitted or excluded range from the physical exhibits found at the crime scene, to the accounts of events provided by witnesses to a confession taken from a suspect. For investigators, it is important to understand that any piece of evidence could be challenged by the defence for exclusion. If challenged, the court will decide if evidence should be excluded based on a number of rules and depending on the type of evidence being presented.

Evidence is a key feature to any investigation, so it is important for investigators to understand the various legal definitions of evidence, the various types of evidence, and the manner in which evidence is considered and weighed by the court. Evidence forms the building blocks of the investigative process and for the final product to be built properly, evidence must be recognized, collected, documented, protected, validated, analyzed, disclosed, and presented in a manner that will be acceptable to the court. As we proceed through this book, evidence will continue to be a key element for consideration in the development of proper investigative processes.

12.5 POINTS TO REMEMBER

- Evidence is a key feature to any investigation.
- Evidence is information in support of an assertion. That information can be strong or weak. We want that information to be as strong as possible.
- Evidence is part of our everyday life and it helps us assess the impact and effectiveness of our work

- Evidence should be used in the design, delivery and evaluation of programmes targeting young people.

12.6 GLOSSARY

- **Data** - Factual information [as measurements or statistics] used as a basis for reasoning, discussion, or calculation.
- **Policy** - Governing principles that serve as guidelines or rules for decision making and action in a given area.
- **Arrest** – The official taking of a person to answer criminal charges. This involves at least temporarily denying a person of liberty and may involve the use of force.
- **Case Law** - Law established by previous decisions of appellate courts.
- **Court** - Government entity authorized to resolve legal disputes. Judges sometimes use "court" to refer to themselves in the third person, as in "the court has read the brief."

12.7 CHECK YOUR PROGRESS

Short Answer type Questions –

26. What is Evidence?
27. Why is evidence important?
28. How should evidence be used?
29. Name and explain two types of Evidence?
30. Explain disclosure of Evidence.
31. Explain Eye Witness Evidence.
32. What should form part of a normal disclosure? Name them.

Terminal Question –

19. Discuss the importance of Evidence?
20. Explain Exculpatory Evidence.
21. What are different types of Evidences? Name them and explain ant two of them in detail

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UNIT-13

INDIAN TAX SYSTEM

13.1 INTRODUCTION

13.2 OBJECTIVES

13.3 TAX SYSTEM IN INDIA

13.4 SUMMARY

13.5 GLOSSARY

13.6 SAQS

13.7 REFERENCES

13.8 SUGGESTED READINGS

13.9 TERMINAL QUESTIONS AND MODEL QUESTIONS

13.1 INTRODUCTION

Taxes in India are levied by the Central Government and the state governments. Some minor taxes are also levied by the local authorities such as the Municipality.

The authority to levy a tax is derived from the Constitution of India which allocates the power to levy various taxes between the Central and the State. An important restriction on this power is Article 265 of the Constitution which states that "No tax shall be levied or collected except by the authority of law". Therefore, each tax levied or collected has to be backed by an accompanying law, passed either by the Parliament or the State Legislature. Tax structure in India is a three tier federal structure. The central government, state governments, and local municipal bodies make up this structure.

Interestingly, the tax system in India traces its origin to the prehistoric texts such as Arthashastra and Manusmriti. As proposed by these manuscripts, the taxes paid by farmers and artisans in that era would be in the form of agricultural produce, silver or gold. Based on these texts, the foundation of the modern tax system in India was conceptualized by the Sir James Wilson during the British rule in India in the year, 1860. However, post-independence the newly-established Indian Government then soldered the system to propel the economic development of the country. After this period, the Indian tax structure has been subject to a host of changes.

13.2 OBJECTIVES

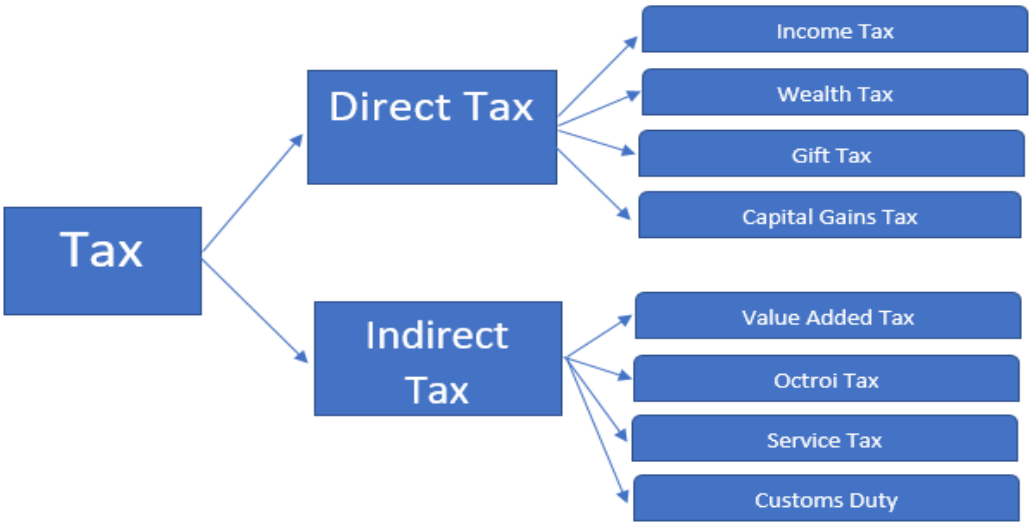
The primary purpose of taxation is to raise revenue to meet huge public expenditure. Most governmental activities must be financed by taxation. But it is not the only goal. In other words, taxation policy has some non-revenue objectives.

Truly speaking, in the modern world, taxation is used as an instrument of economic policy. It affects the total volume of production, consumption, investment, choice of industrial location and techniques, balance of payments, distribution of income, etc.

- Economic Development
- Full Employment
- Price Stability
- Control of Cyclical Fluctuations
- Reduction of BOP Difficulties
- Non-Revenue Objective

13.3 TAX SYSTEM IN INDIA:

The tax system in India allows for two types of taxes—Direct and Indirect Tax.



The tax system in India for long was a complex one considering the length and breadth of India. Post GST implementation, which is one of the biggest tax reforms in India, the process has become smoother. It serves as an all-inclusive indirect tax which has helped in eradicating the cascading effect of tax as a whole. It is simpler in nature and has led to up-graded the productivity of logistics.

Direct Tax:

Direct Tax is levied directly on individuals and corporate entities. This tax cannot be transferred or borne by anybody else. Examples of direct tax include income tax, wealth tax, gift tax, capital gains tax. Income tax is the most popular tax within this section. Levied on individuals on the income earned with different tax slabs for income levels. The term 'individuals' includes individuals, Hindu Undivided Family (HUF), Company, firm, Co-operative Societies, Trusts.

Indirect Tax:

Indirect taxes are taxes which are indirectly levied on the public through goods and services. The sellers of the goods and services collect the tax which is then collected by the government bodies.

- Value Added Tax (VAT) – A sales tax levied on goods sold in the state. The rate depends on the government.
- Octroi Tax – Levied on goods which move from one state to another. The rates depend on the state governments.
- Service Tax – Government levies the tax on service providers.

- Customs Duty – It is a tax levied on anything which is imported into India from a foreign nation.

Tax Collection Bodies:

The three bodies which collect the taxes in India have clearly defined the rules on what type of taxes they are permitted to collect.

- The Central Government: income tax, custom duties, central excise duty.
- The State Governments: tax on agricultural income, professional tax, value-added tax, state excise duty, stamp duty.
- Local Bodies: property tax, water tax, other taxes on drainage and small services.

GST:

In India, the three government bodies collected direct and indirect taxes until 1 July 2017 when the Goods and Services Act (GST) was implemented. GST incorporates many of the indirect taxes levied by states and the central government. What does the GST mean for your money?

Some of the taxes GST replaced include:

- Sales Tax
- Central Excise Duty
- Entertainment Tax
- Service Tax
- Purchase Tax

It is a multi-stage destination-based tax. Multi-stage because it is levied on each stage of the supply chain right from purchase of raw material to the sale of the finished product to the end consumer whenever there is value addition and each transfer of ownership. Destination- based because the final purchase is the place whose government can collect GST. If a fridge is manufactured in Delhi but sold in Mumbai, the Maharashtra government collects GST. A major benefit is the simplification of taxation in India for government bodies.

GST has three components:

- CGST-Stands for Central Goods and Services Act. The central government collects this tax on an intrastate supply of goods or services. (Within Maharashtra)
- SGST: Stands for State Goods and Services Tax. The state government collects this tax on an intrastate supply of goods or services. (Within Maharashtra)

- IGST: Stands for Integrated Goods and Services Tax. The central government collects this for inter-state sale of goods or services.

Other Government Bodies:

For a smooth implementation of the Indian tax system, there are bodies dedicated to it. Popularly known as the revenue authorities.

- CBDT: The Central Board of Direct Taxes is a part of the revenue department under the Ministry of Finance. It has a two-fold role. One, it provides important ideas and inputs for planning and policy with regard to direct tax in India. Second, it assists the Income Tax department in the administration of direct taxes.
- CBEC: The Central Board of Excise and Customs deals with policy formulation with regard to levy and collection of customs and central excise duties and service tax.
- CBIC: Post GST implementation, the CBEC has been renamed as the Central Board of Indirect Taxes & Customs (CBIC). The main role of CBIC is assisting the government in policy-making matters related to GST.

Benefits of Taxes:

While paying taxes may not be a pleasant feeling, however, it is prudent to understand that tax paid by every single individual contributes towards the country's administration and resources required for its economic progress.

- It promotes savings as well as investments. If an individual makes certain set of investments, a part amount of the same would be tax exempted, thereby enabling him or her to pay reduced amount of taxes.
- Paying tax also works as a proof that you are not only disciplined in filing your tax returns but also helps at the time of loan application. This is because at the time of purchasing a home loan, the bank requires proof of whether the applicant has filed his or her taxes regularly.

10.4 SUMMARY

Taxes in India are levied by the Central Government and the state governments. Some minor taxes are also levied by the local authorities such as the Municipality.

The authority to levy a tax is derived from the Constitution of India which allocates the power to levy various taxes between the Central and the State. An important restriction on this power is Article 265 of the Constitution which states that "No tax shall be levied or collected except by the authority of law". Therefore, each tax levied or collected has

to be backed by an accompanying law, passed either by the Parliament or the State Legislature.

Article 246 of the Indian Constitution, distributes legislative powers including taxation, between the Parliament of India and the State Legislature. Schedule VII enumerates these subject matters with the use of three lists:

- List - I entailing the areas on which only the parliament is competent to make laws,
- List - II entailing the areas on which only the state legislature can make laws, and
- List - III listing the areas on which both the Parliament and the State Legislature can make laws upon concurrently.

Separate heads of taxation are no head of taxation in the Concurrent List (Union and the States have no concurrent power of taxation). The list of thirteen Union heads of taxation and the list of nineteen State heads are given below:

10.5 GLOSSARY

- CGST-Stands for Central Goods and Services Act. The central government collects this tax on an intrastate supply of goods or services.
- SGST: Stands for State Goods and Services Tax. The state government collects this tax on an intrastate supply of goods or services.
- IGST: Stands for Integrated Goods and Services Tax. The central government collects this for inter-state sale of goods or services.
- CBDT: The Central Board of Direct Taxes is a part of the revenue department under the Ministry of Finance. It has a two-fold role. One, it provides important ideas and inputs for planning and policy with regard to direct tax in India. Second, it assists the Income Tax department in the administration of direct taxes.
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- CBIC: Post GST implementation, the CBEC has been renamed as the Central Board of Indirect Taxes & Customs (CBIC). The main role of CBIC is assisting the government in policy-making matters related to GST.

10.6 SAQS

1. Short Answer Questions-

a) What do you mean by service tax?

b) What is the objective of Taxation in India?

2. Fill in the blanks-

a) A sales tax levied on…….sold in the state.

b) The authority to levy a tax is derived from the …….... of India.

3. True and False type questions

a) Tax structure in India is a three tier federal structure.

(i)True, (ii) False.

b) Indirect taxes are taxes which are indirectly levied on the public through goods and services.

(i)True, (ii) False.

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10.9 TERMINAL QUESTIONS AND MODEL QUESTIONS

a) Write a detailed note on Indian Tax System?
b) Discuss Constitution provisions for tax system in India.

Answers

SAQS

1. (a) Refer 13.3, (b) 13.2
2. (a) goods (b) Constitution .

3. (a) True, (b)True

Terminal Questions and Answers

(a) Refer 13.1, 13.3 (b)13.3, 13.4

UNIT-14

TAXING INTERNET COMMERCE

14.1 INTRODUCTION

14.2 OBJECTIVES

14.3 E-COMMERCE:

14.4 TAXATION AT GLOBAL STANDARDS AND TREATY LAW REGIME

14.5 THE NEED OF TAXATION IN CYBERSPACE

14.6 SUMMARY

14.7 GLOSSARY

14.8 SAQS

14.9 SUGGESTED READINGS

14.10 TERMINAL QUESTIONS AND MODEL QUESTIONS

14.1 INTRODUCTION

Development in electronic commerce is the greatest event in the history of mankind it is clear indication that India following United States of America and China would be the major beneficiaries of the Electronic commerce Revolution.

Now a days physical presence is no longer necessary to perform activities (i.e., commercial transactions are no longer defined by geographical boundaries) and physical transactions are replaced by bytes of data. Since EC can be conducted virtually instantaneously around the globe and around the clock, the question where the profits should be taxed becomes crucial. Taxing the Internet is a topic that makes global headlines, every-day. The lure of setting out national tariffs for every byte of data that follows and taxing every product traded hopes to herald a new economy for the taxman. Most governments are alarmed at the extreme growth of the internet, and they should be, as the Net is the largest free information system the world has ever seen.

The development of Electronic Commerce modifies the way of doing business. For centuries, traditional business around the world has been based on two concepts:-

1. Physical presence; and

2. Physical delivery of goods and services.

14.2 OBJECTIVES

Business through internet caters to globally located customers. This rises cross border legal issues. Transactions that may be legal and valid in one jurisdiction may not be enforceable in others. Creation of wealth through cyber space would also entail the use of "offshore" financial institutions to store this wealth. This would constitute an elaborate and often untraceable form of tax avoidance. This is not only a threat to national sovereignty but also overrides traditional principles of taxation- a transgression of traditional notion of political and monetary autonomy. As wealth is generated through the means of cyber space, accounting mechanisms and monetary control would become difficult. Taxes on cyberspace would be one method of getting some amount of monetary control.

14.3 E-COMMERCE:

Electronic commerce is a broad concept that covers any commercial transaction that is effected via electronic means and would include such means as facsimile, telex, EDI, Internet and telephone. For the purposes of this report the term is limited to those trade and commercial transactions involving computer-to-computer communications whether utilizing an open or closed network.

The Constraints International tax issues in the area of e-commerce are manifold and include nexus of the vendor and tax enforcement agencies. Taxing authorities may have great difficulty collecting revenue from vendors conducting commerce through foreign Internet addresses. The foremost problem associated with Internet based commerce is fixing the place of transaction. The place where a web-server is located, the place where the user initializes the transaction and the server where payment is collected may be different. Electronic transfer of funds heightens the risk of money being sent to tax havens. Further, many jurisdictions rely on the taxpayer to voluntarily identify himself, herself or itself as falling within its tax system. Tax authorities may not be able to effectively enforce their rights to collect tax in such an environment, especially if a business does not consider itself to be within a tax jurisdiction and simply choose not to disclose its activities to the relevant authority.

Underlying any discussions as to whether a website, server, telecommunication equipment, local access numbers, etc. constitute a permanent establishment or not is the source or residency based taxation.

Not surprisingly, certain technology exporting countries are in favour of a move away from a source-based tax. The United States made a clear statement to this effect in the treasury paper. Treasury maintains that it is difficult to apply traditional concepts of source to link an electronic transaction with a particular country. This view has been re- affirmed by the USD and supported by Japan at the G8 meetings in Birmigham.

Importing countries will not necessarily take the same view and here is a danger that in the absence of clear guidelines that are universally accepted we will find some jurisdictions ‘straining’ the traditional concept of permanent establishment to catch electronic trade and preserve local taxing rights or (and potentially more alarming) seeking to apply ‘royalty’ treatment especially where treaties allow for a withholding tax on gross receipts.

14.4 TAXATION AT GLOBAL STANDARDS AND TREATY LAW REGIME

A taxpayer is generally taxed on its worldwide income in the country of its residence (residence based taxation). In the case of a company, this is usually the place where the company is incorporated, registered, or has its place of central management and control.

The company may also be taxed in another country if it has a recognized source of income there (source based taxation). Generally tax treaties restrict the use of domestic source rules by requiring a minimum nexus to allow taxation in that jurisdiction. Thus, taxation of business income on the basis of the source rule requires the presence, in the country of source, of a permanent establishment of the enterprise sought to be taxed.

Where the income or capital is taxed in the country of source, the country of residence has the obligation to give relief from double taxation. Such relief is granted either by exempting such income from taxation in the country of residence or by giving credit for taxes paid in the country of source.

Permanent Establishment:

Under the tax treaties based on OECD Tax Convention, an enterprise providing services abroad is taxable in the country where it conducts business only if it has permanent establishment (PE) there. For most tax treaty purposes, a 'PE' is a "fixed place of business through which an enterprise carries on business. A PE presupposes 'a fixed place of business' (the basic rule of PE) which may include premises, facilities or installations. The characteristic 'fixed' demands a specific fixed long-term connection between the place of business and a specific part of the earth's surface.

Secondly, if the services provided are the part of a construction or installation project that lasts for more than a particular period of time, a PE may be constituted under article 5(3), i.e., construction PE.

The third element of PE is article 5(5) and (6) under which an 'Agency PE' may be constituted. This is the case if a provider of services in a country has a dependant agent there who involves his principal in business by regularly concluding contracts on behalf of the principal. Typically, however, tax treaties exclude from the definition of a fixed place of business any offices and facilities that are used merely for promotional activities or for the storage, display or delivery of goods and facilities.

14.5 THE NEED OF TAXATION IN CYBERSPACE

The development of EC has revolutionized the way business operates. It has also challenged the adequacy and fundamental validity of principles of international taxation such as physical presence, place of establishment etc. that has formed the basis of asserting tax liability.

Business conducted through the internet caters to globally located customers. This raises cross border legal issues. Transactions that may be legal and valid in one jurisdiction may not be enforceable in others. Creation of wealth through cyber space would also entail the use of "offshore" financial institutions to store this wealth. This would constitute an elaborate and often untraceable form of tax avoidance. This is not only a threat to national sovereignty but also overrides traditional principles of taxation- a transgression of traditional notion of political and monetary autonomy. As wealth is generated through the means of cyber space, accounting mechanisms and monetary control would become difficult. Taxes on cyberspace would be one method of getting some amount of monetary control.

The allocation of taxing rights must be based on mutually agreed principles and a common man understanding of how these principles should be applied. In addition to the need for consensus between governments and business, a need for co-operation between them has also been identified.

Aspects of Internet Electronic Commerce Relevant for Tax Policy Makers Changes in the business practice due to the advent of the EC will affect taxation in the following ways: -

(i) Lack of any user control to the location of activity: As the physical location of an activity becomes less important, it becomes more difficult to determine where an activity is carried out and hence the source of income.

(ii) No means of identification of users: In general, proof of identity requirements for Internet use is very weak. The pieces of an internet address (or domain name) only indicate who is responsible for maintaining that name. It has no relationship with the computer or user corresponding to that address or even where the machine is located.

(iii) Reduced use of information reporting and withholding institutions: Traditionally taxing statutes have imposed reporting and withholding requirements on financial institutions that are easy to identity. In contrast, one of the greatest commercial advantages of EC is that it often eliminates the need for intermediary institutions. The potential loss of these intermediary functions poses a problem for the tax administration.

Some of the fundamental tax related issues raised by the evolution of EC transactions may be summarized as follows: -

Whether international trading by an enterprise through EC will result in the enterprise creating a taxable PE in other countries in which customers are located?

- Is there a need to create new definition and meaning of permanent establishment (Hereinafter referred to as “PE”)?
- Is there a need to change the basis of taxation (for example, residence based taxation)?
- While considering taxation of EC transactions, should principles of tax neutrality be adhered to?

If it is determined that an enterprise does have a PE in another country, another important issue than arises: How to attribute profits to PE?

EC also gives rise to new issues concerning the characterization of payments under the double tax treaties. Moreover, though EC does not give rise to any fundamentally new issues relating to transfer pricing, there may be some difficulties in applying traditional transaction methods, establishing comparability, deciding the tax treatment of integrated businesses and complying with documentation and information reporting requirements. Unless these issues are addressed, an erosion of the tax base may result, especially for developing and under developed countries.

14.6 SUMMARY

A taxpayer is generally taxed on its worldwide income in the country of its residence (residence based taxation). In the case of a company, this is usually the place where the company is incorporated, registered, or has its place of central management and control.

Business conducted through the internet caters to globally located customers. This raises cross border legal issues. Transactions that may be legal and valid in one jurisdiction may not be enforceable in others. Creation of wealth through cyber space would also entail the use of "offshore" financial institutions to store this wealth. This would constitute an elaborate and often untraceable form of tax avoidance. This is not only a threat to national sovereignty but also overrides traditional principles of taxation- a transgression of traditional notion of political and monetary autonomy. As wealth is generated through the means of cyber space, accounting mechanisms and monetary control would become difficult. Taxes on cyberspace would be one method of getting some amount of monetary control.

The allocation of taxing rights must be based on mutually agreed principles and a common man understanding of how these principles should be applied. In addition to the need for consensus between governments and business, a need for co-operation between them has also been identified.

14.7 GLOSSARY

(a). **PE**- Permanent establishment

(b). **OECD**- The Organization for Economic Co-Operation and Development

14.8 SAQS

1. Short Answer Questions-
a) What do you mean by Permanent establishment?
b) What is the objective of Taxes on cyberspace?

2. Fill in the blanks-
a) The foremost problem associated with ..... based commerce is fixing the place of transaction.
b) Electronic transfer of funds heightens the risk of .....being sent to tax havens.

3. True and False type questions
a) The foremost problem associated with Internet based commerce is fixing the place of transaction.
(i)True, (ii) False.
b) Taxing the Internet is a topic that makes global headlines, every-day.
(i)True, (ii) False.

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3. Fundamentals of Corporate Accounting– J.R.Monga
4. Accounting Standards – Icai Publications. (Ca-Ipcc Level)

14.11 TERMINAL QUESTIONS AND MODEL QUESTIONS

a) Discuss in details about the need of taxation in cyberspace.

b) What are the concepts of taxation on cyberspace in global world?

Answers:

1. SAQ:

a)14.3, 14.4 b) 14.2

2. Fill in the blanks:

a) Internet b) money

3. True and False type questions

a) True

b) True

4. Terminal Questions:

a) 14 .2 b) 13.3

Unit-15

Indirect Taxes, Tax evasion in Cyber space

15.1 INTRODUCTION

15.2 INDIRECT TAX IN INDIA

15.3 FEATURES OF INDIRECT TAXES

15.4 TYPES OF INDIRECT TAXES

15.5 WITHHOLDING TAX

15.6 PAYMENT OF INDIRECT TAX

15.7 TAX EVASION

15.8 ISSUES IN TAX EVASION

15.9 SUMMARY

15.10 GLOSSARY

15.11 SAQS

15.12 SUGGESTED READINGS

115.13 TERMINAL QUESTIONS AND MODEL QUESTIONS

15.1 INTRODUCTION:

Indirect tax is a type of tax collected by the government from an intermediary such as manufacturer or retailer. The eventual burden of the tax falls on to consumers who buy goods and services from the intermediary, as the intermediary applies indirect taxes on the product in the form of Value Added Tax (VAT), service tax, sales tax etc.

Indirect taxes are called so because they are collected indirectly from consumers by the government through intermediaries, who are the first payers of the tax to the government. These taxes are different from direct taxes such as income tax which is collected directly from taxpayers. Indirect taxes include taxes such as Sales Tax, service, tax, VAT etc. whereas income tax, wealth tax, corporation tax etc. fall under the ambit of direct taxes.

Unlike direct taxes, indirect taxes are levied on goods and services rather than individuals. Individuals pay the taxes indirectly in the form of higher prices on their purchases. A retailer selling a product to you has already levied indirect taxes on the product, which is then passed on to the relevant tax-collection authorities.

15.2 INDIRECT TAX IN INDIA:

There are a number of indirect taxes applied by the government. Taxes are levied on import, manufacture, sale and even purchases of goods and services. These laws aren't also well-defined in terms of Acts from the government; rather orders, circulars and notifications are given out by relevant government bodies to this end. As such, it can be cumbersome trying to understand every feature of indirect taxes in India.

Indirect taxes are touted to be streamlined following the introduction of the uniform Goods and Services Tax (GST). The GST is under deliberation in the parliament and may be approved by mid-2016. The points below will help you understand more about the types of indirect taxes and where they are applicable from a consumer's perspective.

15.3 FEATURES OF INDIRECT TAXES:

- Levied on goods and services sold by an intermediary to final consumers. Consumers than pay the tax in the form of higher price of items.
- Broadly divided into categories such as sale of goods, imported/exported goods, offering of services and manufacture of goods.
- Indirect taxes are levied on clearance of goods and services from the origin, instead of actual sale of the products to the customers. What this means is that the intermediary will pay excise duties irrespective of whether they could sell the good or service to consumers.
- Indirect taxes fall under both the central and state governments according to specific type of indirect tax. For instance, VAT is levied by the state governments whereas CST is levied by the central government.

15.4 TYPES OF INDIRECT TAXES:

Indirect taxes is a broad category under which different kinds of indirect taxes fall. There are 4 basic sub-categories with further sub-divisions according to goods and services.

Examples of Indirect Taxes:

- Service tax
- Excise duties
- VAT

SERVICE TAX:

Service tax is levied by the service tax provider and paid by the recipient of the services. However, in some cases the liability for the tax is divided between the recipient as well as the provider of service.

There is also a provision for abatement of service tax if the final price is a mixture of services as well as material, such as restaurant bills. Service taxes fall under the ambit of the central government.

Manufactured Goods:

The central government collects excise duties on manufacture of goods subject to clearance of the products from warehouse or factory. As such, this tax can be said to apply on clearance of goods from storage rather than being applied on the sale of the manufactured goods. Excise duties are further divided into 4 categories, of which basic excise duty is levied for the most part while the others are levied only in special cases.

1. **Basic excise duty:** This is the most common type of excise duty which is levied on goods manufacturing and falls under the Central Excise Act, 1944. This tax is exempted in special cases such as manufacture of salt or export of manufactured goods of less than Rs.1.5 crores overall value per year, among others. The excise duty rates vary from product to product.
2. **Special excise duty:** Levied on a small list of items and falls under Central Excise Tariff Act, 1985.
3. **Textile duties:** As the name suggests, only applicable on specific textile goods and falls under the Additional Duties of Excise Act, 1978.
4. **Goods of special importance:** This is levied as per the Additional Duties of Excise Act, 1957 on specific goods mentioned under the article.
5. **National calamity contingent duty (NCCD):** This is levied on goods like cigarettes, chewing tobacco, pan masala, mobile phones and crude oil, and is applicable U/S 135 of the Finance Act, 2001.

IMPORTED GOODS:

Imported goods are charged taxes as per excise duties. This is further divides in specific duties and ad-valorem duties.

1. **Specific duties:** These are applicable on all individual components of a good imported into the country, for instance a cloth imported from abroad will be charged excise per meter of the material, or laptops imported will be charged excise on each unit of the order.
2. **Ad-valorem duties:** These are levied on the overall value of goods exported or imported. For instance, 10% of the overall bill of imported clothes or 10% of the overall order value for laptops.

3. **Anti-dumping duties:** These are levied so as to shield the domestic market against foreign goods dumped at very low or below cost prices. For instance, plastic products imported from China, which can be cheaper than the domestic market rates.
4. **Countervailing Duty of Customs:** This is another type of excise duty used to help Indian produced goods sell on a level playing field. This is additional to the ad-valorem or specific duties already applied on goods.

GOODS SOLD:

Finally, goods sold directly to consumers are levied Value Added Taxes (VAT), which is collected by the respective state government on intra-state sales, as well as Central Sales Tax, which is collected by the central government on inter-state sales. Every state levies its own VAT figure, which usually lies between 5% and 12.5%. There may be some exceptions to this tax as per state laws.

Apart from all the types of indirect taxes discussed above, Octroi or Local Body Taxes (LBT) are also applicable as per local rules and regulations.

Advantages of Indirect Tax

Indirect Tax comes with a number of advantages. Some of these are -

- **Convenience**

Indirect taxes are so called because they are paid for directly by the taxpayer to the government but through the goods and services that they consume. Due to the nature of this tax, consumers do not feel as deep a pinch in their pocket as they would if they paid this amount all at once to the government. Indirect taxes are paid in small amounts and only when purchasing certain goods and services. Also this tax is a part of the price of the product and is not separate, hence will have to be paid when the product is being purchased.

Indirect taxes are also convenient from the point of view of the government as well as they can collect the said tax at the factory or port directly from the traders or manufacturers.

- **Hard to evade**

Most individuals try to evade paying taxes and usually through illegal methods. However, through the concept of indirect taxes, evasion becomes very hard. This is because indirect tax is paid by the customer not to the government to the seller of the product or service that they are purchasing and these costs are a part of the actual price of the product. Hence, they have no way of evading this tax.

- **Coverage and Elasticity**

Unlike direct taxes, a large number of services and products come with indirect taxes hence individuals do not have a choice but to pay this tax. If not, they will have to forgo the product or service they wanted.

Whenever the government believes that its revenue needs to increase, taxes can be increased wherein indirect taxes provides a lot of revenue to the government.

- **Universality and Influence**

Indirect taxes are paid by everyone regardless of their class or economic status depending on the type of product and service procured.

The government can allocate resources better and understand the spending habits of individuals by imposing taxes on specific sectors or commodities such as luxury goods and other niche services.

The money collected through indirect taxes can be used for positive purpose such as social welfare and infrastructure. Indirect taxes are also flexible.

Difference between Direct Tax and Indirect Tax

- Direct tax is referred to the type of tax that is levied on an individual's wealth and income and is paid to the government directly. Indirect tax is levied on an individual who consumes products and services and is paid indirectly to the government as the price of the particular product or service comprises of the tax amount as well.
- Direct Tax is progressive in nature whereas Indirect tax is regressive.
- Examples of Direct Tax includes Wealth Tax, Property Tax, Income Tax, Import and Export Duties and Corporate Tax.
- Example of Indirect Tax includes VAT or Value Added Tax, Service Tax, Central Sales tax, Custom Duty, Excise Duty, Security Transaction Tax and so on.
- Tax evasion is possible with Direct Tax but is not the case with Indirect Tax.
- Direct Tax helps to reduce inflation whereas Indirect tax promotes inflation.
- Direct Tax is collected from and imposed on assesses such as Individuals, Hindu Undivided Family, Firm, and Company and so on.
- Indirect Tax is collected from those consumers of products and services but is deposited and paid by the assesse.
- Burden of Direct Tax cannot be shifted but can be shifted in case of Indirect tax.

15.5 WITHHOLDING TAX

Withholding Tax which is also known as retention tax is a government requirement for the payer of income to deduct or withhold tax from the payment and subsequently pay that tax to the government. The amount that is withheld at as a credit against the income taxes that the employee will have to pay during the year. Withholding tax is not an indirect tax but comes under the bracket of direct tax.

15.6 PAYMENT OF INDIRECT TAX

Indirect tax is paid by the customer indirectly to the government, as the name suggests, when they pay for a particular product or service. The amount that is paid for the particular goods/product or service is inclusive of the tax amount and is therefore a more convenient method of paying this particular tax.

15.7 TAX EVASION[3]

Governments are continuously striving to reduce the problem of tax evasion because without taxation survival of any government is at stake. Therefore, there is a need to properly understand tax evasion dimensions and develop a sound strategy to tackle it. This paper aims to explore the possibility of tax evasion during the transaction through E-commerce. Tax evasion is not a new phenomenon; it has been in existence for a long time and still continues to prevail and impose growing challenges on tax authorities and governments. Tax evasion is the minimization of one's tax liability by way that violates the provisions of the tax codes. It is therefore observed an offence, and could lead to the imposition of criminal proceedings against the offender. In legal terms there is a clear distinction between tax evasion and tax avoidance. Tax avoidance involves every attempt by legal means to use loopholes in order to minimize ones tax liability. However, from economic point of view, and focusing on the consequences of both, in terms of tax collection, evasion and avoidance are similar even if one is illegal and the other one is not.

15.8 ISSUES IN TAX EVASION[4]

Government of India imposes different taxes on business house. Value Added Tax is a multi-point sales tax with set off for tax paid on purchases. It is basically a tax on the value addition on the product. In many aspects it is equivalent to last point sales tax. It can also be called as a multi-point sales tax levied as a proportion of Valued Added. The second one is the service tax, which is imposed on the services or consultancy provided by the professional. So looking to the figures and the table, we can conclude that:

1. Vat tax as it is a multipoint tax, as per the nature of E-business, it directly involves consumer with business. Since the different points are decreased so the tax is reduced and it result is tax loss of the Government.

2. Service sector covers approximately 80% of the share of total turnover of E-commerce transactions. Service sector on recommendation of finance commission gives some share to the state. But the services provided by dot com companies give the whole tax to one state only. So the other state income is lost due to nature of the business.

3. The provision of services and the licensing of intangible assets, each of which is subject to some form of taxation and other taxes such as municipal taxes, professional taxes, are too reduced of the state Government.

[3] "Tax Evasion a Dark Side of E-Commerce" by Dr. Neelesh Jain Associate Professor, Department of Computer Applications, Sagar Institute of Research and Technology Bhopal, MP, INDIA Available at: www.ijemr.net.
[4] *Ibid.*

15.9 SUMMARY

Indirect taxes are called so because they are collected indirectly from consumers by the government through intermediaries, who are the first payers of the tax to the government. These taxes are different from direct taxes such as income tax which is collected directly from taxpayers. Indirect taxes include taxes such as Sales Tax, service, tax, VAT etc. whereas income tax, wealth tax, corporation tax etc. fall under the ambit of direct taxes.

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15.10 GLOSSARY

a) **GST:** Goods and Service Tax

b) **VAT:** Value Added Tax

c) LBT: Local Body Taxes

d) **NCCD:** National Calamity Contingent Duty

15.11 SAQS

Short Answer Questions-

a) What do you mean by Indirect Tax?

b) Write a short note on Service Tax?

2. Fill in the blanks-

a) Indirect taxes are touted to be streamlined following the introduction of the .....and Services Tax (GST).

b) Service taxes fall under the ambit of the.....

3. True and False type questions

a) Indirect taxes are called so because they are collected indirectly from consumers.

(i) True, (ii) False.

b) Direct Tax helps to reduce inflation whereas Indirect tax promotes inflation.

(i) True, (ii) False.

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15.14 TERMINAL QUESTIONS AND MODEL QUESTIONS

1). Discuss in details Indirect Taxation in India.

2). What are the features of Indirect Taxes in India?

Answers:

1. **SAQ:**

a) 15.2, 15.3 b) 15.4

2. **Fill in the blanks:**

a) Uniform Goods, b) Central Government

3. True and False type questions

a) True

b) True

4. **Terminal Questions**:

a) 15.2, b) 15.2