

REVIEW FOR SECURITY ISSUES AND SOLUTIONS IN E-COMMERCE

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Abstract: E-Commerce stands for Electronic Commerce which means trading of products or services using computer networks such as internet. Data can be electronically exchange by using E-Commerce. E-Commerce becomes very important for business purpose. There are many security issues which occur during E-Commerce, and we have to provide solutions against these security issues. In this paper, a review of Electronic data interchange is done that how data can be exchange electronically. A review of security issues and security solutions is also done in this paper.

Keywords: E-Commerce, EDI, Security Issues, Security Solutions.

1. Introduction

Electronic Commerce (E-Commerce) continues to impact the global business environment profoundly, technologies and applications are beginning to focus more on mobile computing and the wireless web [1]. Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply chain management, internet marketing, online transaction processing, electronic data interchange, inventory management systems and automated data collection systems. Electronic data interchange (EDI) is a process to automate the exchange of information traditionally transmitted via trade documents, is examined. Trade documents include such administrative forms as: purchase orders, invoices, price lists, and bills of landing [2].

2. E-Commerce

E-commerce (also written as e-Commerce, e-Commerce or similar variants), short for electronic commerce, is trading in products or services using computer networks, such as the Internet. Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply chain

management, Internet marketing, online transaction processing, electronic data interchange(EDI), inventory management systems, and automated data collection systems. Modern electronic commerce typically uses the World Wide Web for at least one part of the transaction's life cycle, although it may also use other technologies such as e-mail.

E-commerce businesses may employ some or all of the following:

- Online shopping web sites for retail sales direct to consumers
- Providing or participating in online marketplaces, which process third-party business-to-consumer or consumer-to-consumer sales
- Business-to-business buying and selling
- Gathering and using demographic data through web contacts and social media
- Business-to-business electronic data interchange
- Marketing to prospective and established customers by e-mail or fax (for example, with newsletters)
- Engaging in pretrial for launching new products and services

3. Electronic data interchange

Electronic data interchange (EDI) is the new frontier of communication technology that facilitates information exchange [3]. Electronic data interchange is the mutual exchange of routine information between business using standardized, machine-readable formats. It allows one company to send information to another company electronically rather than with paper. EDI has existed for more than 30 years, and there are many EDI standards some of which address the needs of specific industries or regions. EDI can be formally defined as the transfer of structured data, by agreed

message standards, from one computer system to another without human intervention.

Some major sets of EDI standards:

- The UN-recommended UN/EDIFACT is the only international standard and is predominant outside of North America.
- The US standard ANSI ASC X12 (X12) is predominant in North America.
- The TRADACOMS standard developed by the ANA (Article Number Association now known as GS1 UK) is predominant in the UK retail industry.
- The ODETTE standard used within the European automotive industry
- The VDA standard used within the European automotive industry mainly in Germany
- The HL7 a semantic interoperability standard used for healthcare administrative data.

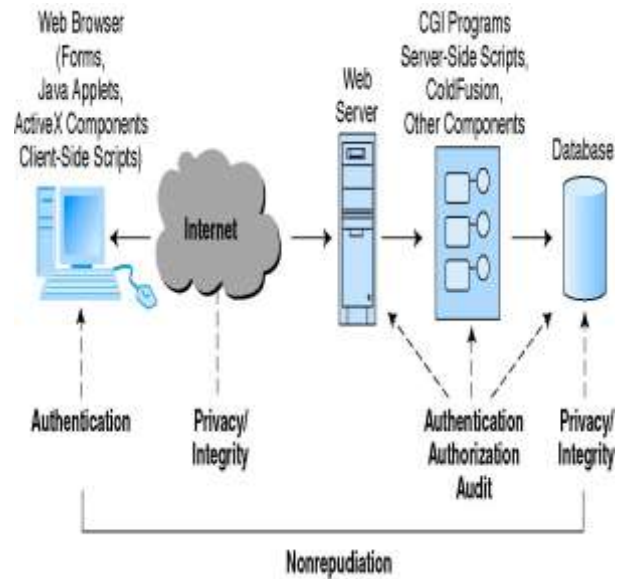


Fig: 1 Security Issues

4. SECURITY ISSUES

E-Commerce security is the protection of e-commerce assets from unauthorized access, use, alteration, or destruction.

Security features have four categories:

- **Authentication:** Verifies who you say you are. It enforces that you are the only one allowed to logon to your internet banking account.
- **Authorization:** Allows only you to manipulate your resources in specific ways. This prevents you from increasing the balance of your account or deleting a bill.
- **Encryption:** Deals with information hiding. It ensures you cannot spy on others during internet banking transactions.
- **Auditing:** Keeps a record of operations. Merchants use auditing to prove that you bought specific merchandise.
- **Integrity:** Prevention against unauthorized data modification.
- **Non-repudiation:** Prevention against any one party from reneging on an agreement after the fact
- **Availability:** Prevention against data delays or removal [4]

Security threats in the E-commerce environment

Three key points of vulnerability:

- Client
- Server
- Communications channel

Most common threats:

- Malicious code
- Hacking and cyber vandalism
- Credit card fraud/theft
- Spoofing
- Denial of service attacks
- Sniffing
- Insider jobs

5. SECURITY SOLUTIONS

i. Security Risk Management

A systematic process for determining the likelihood of various security attacks and for identifying the actions needed to prevent or mitigate those attacks.

- Security risk management consists of three phases:
 - Asset identification
 - Risk assessment
 - implementation

ii. Access Control

Mechanism that determines who can legitimately use a network resource

iii. Passive tokens

Storage devices (eg. Magnetic strips) that contain a secret code used in a two-factor authentication system.

iv. Active tokens

Small, stand-alone electronic devices that generate one-time passwords used in a two-factor authentication system.

v. Public key infrastructure (PKI)

A scheme for securing e-payments using public key encryption and various technical components.

vi. Encryption

The process of scrambling (encrypting) a message in such a way that it is difficult, expensive, or time-consuming for an unauthorized person to unscramble (decrypt) it.

vii. Symmetric (Private) key system

An encryption system that uses the same key to encrypt and decrypt the message.

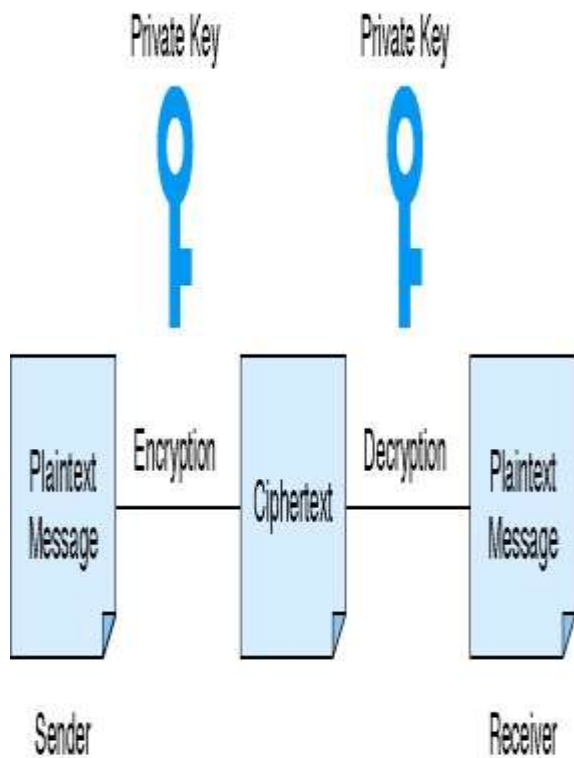


Fig: 2 Security Solution

An identifying code that can be used to authenticate the identity of the sender of a document.

- Hash
A mathematical computation that is applied to a message, using a private key, to encrypt the message.
- Message Digest
A summary of a message, converted into a string of digits, after the hash has been applied.
- Digital envelope
The combination of the encrypted original message and the digital signature, using the recipient's public key.

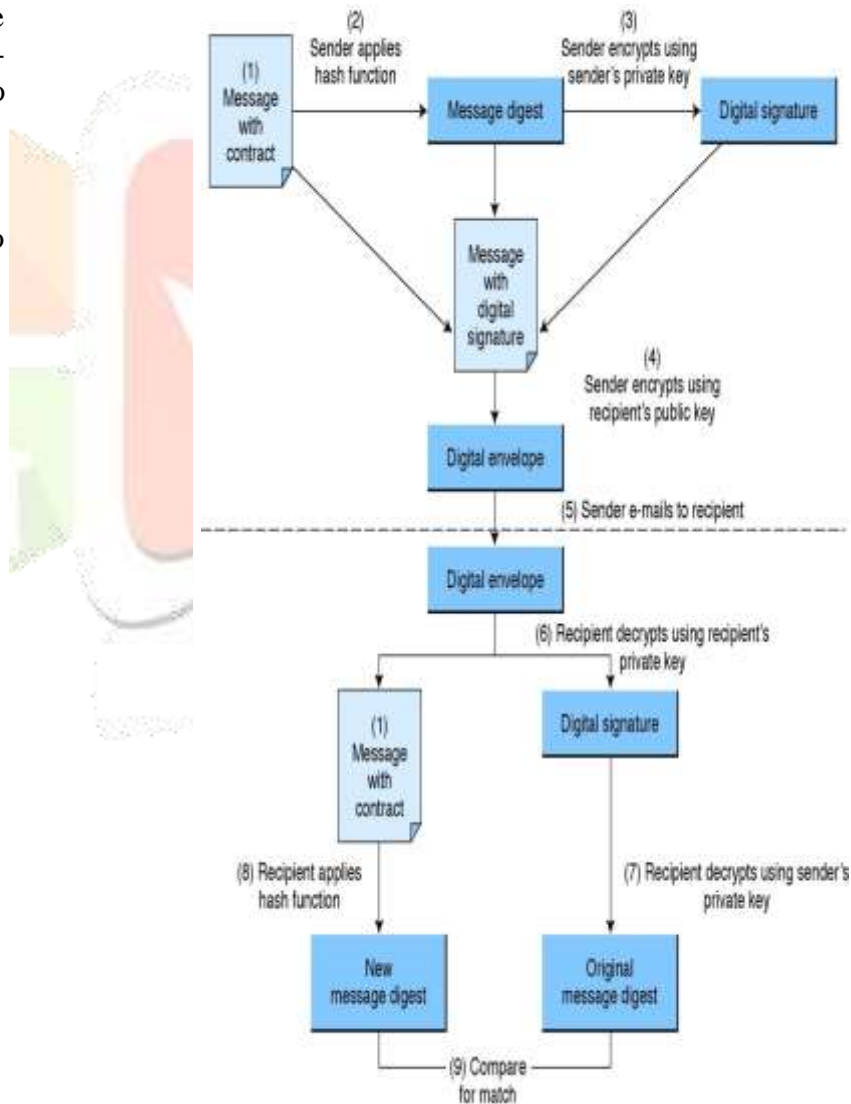


Fig: 3 Digital Signature

viii. Digital Signatures

ix. Certificate authorities (CAs)

Third parties that issues digital certificates.

6. Conclusion

In this paper the review of E-Commerce, EDI, Security Issues and Security solutions is done. E-Commerce is growing very fast now a days and used in every organization. In e-commerce the data is send electronically which is called Electronic Data Interchange (EDI). There are many security issues in EDI which affects the data by hack it modify it and delete it. The secure the data from these issues security solutions are provided which secure the data by encryption method and apply many encryption techniques.

7. References

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