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A Survey on Various Online Payment and Billing Techniques

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A.P.Thangamuthu*Assistant Professor, Department of Computer Technology**Sri Krishna Adithya College of Arts & Science, Coimbatore, Tamil Nadu, India***Abstract**

Over the past few decades, Internet technology has shaped almost everybody's life. Business banks set up internet workstations and provide customer information requirements, internet payment fund diversion financial services, credit, investment, etc. An online payment system is a means for conducting economic transactions based on the Internet. This allows a seller to accept payments over the web or other internet connections, such as direct network connections between retail stores and their suppliers- a common way of keeping inventories just in time. Online payment systems are greatly expanding a company's scope and selling potential. Usually, online payment services are operated by third-party firms like PayPal, Google, or Click2Pay. Such companies make a profit by taking a small portion of each transaction, or by signing contracts with institutions that require a large number of transactions. Without the ability to make online payments, a large Internet retailer, like Amazon.com, could not exist. Online payment systems have expanded the playing field between big and small companies, as each of them can adopt the same payment methods when they sign up with third-party payment processors.

Keywords: Internet, Information, Payment, Online, Transaction, Connections**Introduction**

Payment in a sales contract is an important factor. Ease of payment in shopping is a convenience factor. The service users ' simpler way of paying will be more relaxed in the store. The circumstances will be different if there are many and varied grocery stores and value but the difficulties of payment. Whether the payment model most widely used on the Internet will be investigated in this research.

Systems for e-billing and e-payment are a part of the e-business. Electronic Business (e-business) could be broadly characterized as any business process that depends on a robotic data framework. Electronic business strategies enable companies to integrate their internal and external data, creating systems that are all the more effective and adaptable to work even more closely with suppliers and accomplices and to better meet their customers ' requirements and desires. Today, using web-based technologies and mobile software is largely accomplished.

Organizations have been forced to change their way of directing business to react to the ongoing changes taking place both on a global, territorial, and national scale. This is inevitable as organizations rushing to receive change are well on their way to getting through in the future. As it says, "On the off chance that you don't care for reform, you're going to like superfluity even less" Some of the advances seen in various system institutions, rehabilitation, cost-cutting, extension, and ICT adjustment.

Progressions are rapid in information and communication technology. The rapid changes in payment systems are generating a wide range of new opportunities and challenges for companies. Electronic (e-billing) and electronic payment (e-payment) are one of the open doors. KPLC customers 'business needs are changing as consumers understand new developments.



Figure 1 E-Commerce Process

Review of Literature

a) **QR Code Barcode Scanner** - Because of the widespread use of QR codes in advertisements, magazines, online promotions, and even on event tickets, QR barcode scanners have become very popular. QR codes are a form of a 2D barcode, meaning you'll need a QR barcode scanner, otherwise known as a complete 2D imager, to read QR codes properly. Using the QR barcode scanner can make sure you can read every QR code, whether it is written on a tag or read off a mobile, tablet, or PC monitor. Our handheld QR code scanner, which can include connectivity with iOS / Android devices, is available in corded or cordless fashion. For a free consultation on a QR barcode scanner or a quantity discount, contact one of our experts.



Figure 2 QR Barcode Scanner

b) **OCR (Optical Character Recognition)** - OCR (optical character recognition) is the use of software to identify text characters that are typed or handwritten inside digital images of physical documents, such as a paper document scanned. OCR's basic process includes analyzing a

document's text and converting the characters into code that can be used to process data. OCR is also sometimes referred to as the identification of text.



Figure 3 Optical Code Recognition

c) **RDID** - This is an acronym for "Radio-Frequency Identification" and refers to a technology that captures digital data encoded in RFID tags or smart labels (defined below) via radio waves by a reader. RFID is similar to bar-coding in that a computer that stores the information in a database collects data from a tag or label. Nonetheless, RFID has several advantages over systems that use tracking software for barcode properties. The most notable is that information from the RFID tag can be read outside the line-of-sight, while barcodes must be synchronized with an optical scanner.



Figure 4 Radio Frequency Identification

Types of Online Payments

Electronic payment enhances efficiency drastically by reducing transaction costs and allows very low-value trade in goods and services. These can also enhance the ease of payment by allowing payments from a variety of devices linked to the global network to be made faster and more efficient/practical. There are several types of electronic payments those are, such as e-wallet, e-cash, smart cards, and credit card payments (MOTO).

Everywhere's a different-different type of payment transaction processing. Where electronic payment applies to paperless monetary transactions, e-commerce sites use electronic payment. Through -paperwork, transaction costs, and labor costs, electronic payment has revolutionized business

distribution. Being user-friendly and less time-consuming than manual storage, it lets companies extend their reach/expansion of the market.

a. Credit Card - For e-commerce purchases, the most common form of payment is through credit cards. It is easy to use; in the appropriate area, the customer simply has to enter their credit card number and expiry date on the seller's web page. To improve the security system, electronic credit card transactions have been implemented with increased security measures, such as the use of a card verification number (CVN). By matching the CVN number with the data of the cardholder, the CVN system helps detect fraud.



Figure 5 Credit Card

b. Debit Card - India's second-largest payment medium for e-commerce. Under their monetary constraints, consumers who want to spend online choose to pay using their debit cards. A debit card is a credit card that deducts money to pay for a transaction directly from the checking account of a customer. Debit cards remove the need for buying to carry cash or physical checks. However, when provided by major payment processors such as Visa or MasterCard, debit cards, also called check cards, provide the flexibility of credit cards and many of the same consumer protections.

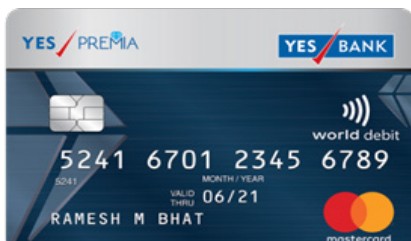


Figure 6 Debit Card

c. Smart Card - The smart card is similar in appearance to a credit card or debit card, but it has a small microprocessor chip in it. It can store job and personal information related to a customer.

Smart cards are also used to store money, and after each payment, the balance is deducted. Only a PIN issued to each customer can be used to unlock smart cards. Smart cards are secure because they store information in an encrypted format and are less expensive to process. Examples of smart cards are Money and Visa Cash cards.



Figure 7 Smart Card

d. E-Wallet - It is a prepaid account that allows the user to store in a secure environment, multiple credit cards, debit cards, and bank account numbers. Each time you make transactions, it removes the need to key in account information. He/she will make payments faster once the customer has registered and developed an E-Wallet profile.

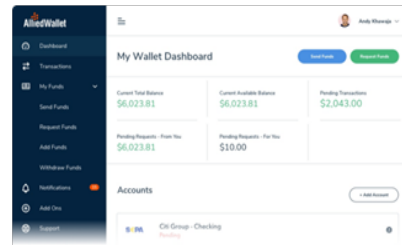


Figure 8 E-Wallet

e. Net banking - It sometimes referred to as online banking or Internet banking, is an electronic payment system. This enables you to make several different types of transactions from the comfort of your home through the internet. Whether you transfer funds to another bank account or check transaction statements, with the help of Internet Banking, you can do them all and much more.



Figure 9 Internet Banking

f. Mobile Payment - One of the latest ways of making online payments is by mobile phones. Instead of using a credit card or cash, all the customer has to do is send a request for payment via text message to their service provider; the order will be charged to the mobile account or credit card of the customer. To set up a mobile payment system, the customer only needs to download the software from the service provider's.

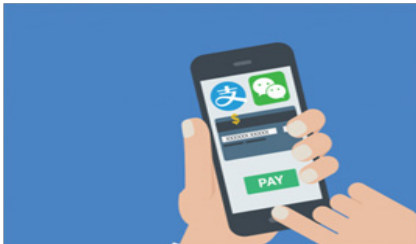


Figure 10 Mobile Payment

g. Amazon Pay - One easy, safe, and fast way is through Amazon Pay to pay for online purchases. Use your data already saved in your Amazon account credentials to sign in and pay for websites and apps from leading merchants. The payment information is stored securely with Amazon and is available via thousands of websites and applications where you enjoy shopping.

E-Payment Requirements

Electronic transactions are known as electronic funds transfer (EFT), and to be charged electronically, vendors must provide their bank information. Electronic transactions are known as electronic funds transfer (EFT), and to be charged electronically, vendors must provide their bank information.

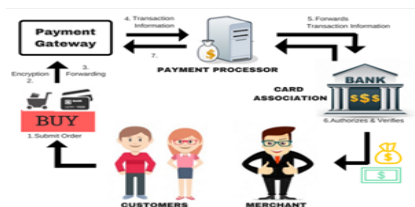


Figure 11 E-Payment Requirements

a. Integrity and authorization: The Unified Payment System does not allow you to take money from the user without that user's explicit authorization. It does not allow the receiving of money without express permission to prevent things like unsolicited bribery. Recognition is the

most important relationship in the payment system. Payment can be authenticated in three ways: throughout-band authentication, passwords, and signature.

b. Out-band authorization: In this method, payment is reported by the verifying party (usually a bank) to the approving party (the payer). The authorizing party must approve or deny the payment using a secure out-band channel (e.g., via surface mail or telephone). This is the current approach to credit cards involving mail orders and telephone orders: anyone who knows the credit card data of a client can initiate payments, and the legitimate user will review the report and complain vigorously about unauthorized transactions. The payment is deemed "legal" by definition if the client does not complain within a certain period (usually 90 days).

c. Password authorization: A password-protected payment requires a cryptographic check value for each message from the authorizing party. This secret may be a personal ID number, a password, or any sort of shared information. They cannot provide a high degree of safety on their own. These should only be used to control access to a physical token such as a smart card (or wallet) that uses secure cryptographic methods, such as digital signatures, to perform the actual authorization.

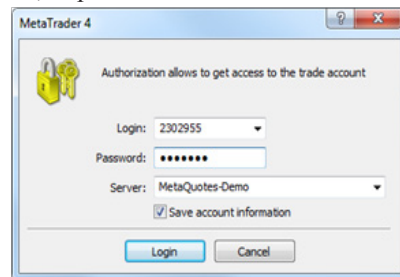


Figure 12 Password Authorization

d. Signature authorization: The verifying party needs a digital signature from the approving party in this type of transaction. Digital signatures include non-repudiation of origin: messages can only be "signed" by the holder of the secret signing key (whereas anyone who knows the correct public authentication key can verify the authenticity of signatures).

e. Confidentiality: Most parties may want transactions to be confidential. In this context, confidentiality means restricting knowledge about

different pieces of transaction-related information: payer/payee identity, purchase material, date, etc. Usually, the privacy provision dictates that only the participants concerned are restricted to this knowledge. Where anonymity or non-traceability is needed, as mentioned below, the requirement may be to limit this awareness to only certain subsets of the participants.

f. Availability and reliability: Both parties need, where appropriate, the ability to make or receive payments. Payment payments must be atomic: they may or may not occur entirely, but they never hang in an uncertain or contradictory situation. No payer would accept a loss of money due to a network or system crash (not a significant amount, in any case). Accessibility and consistency presume that the underlying networking infrastructure and all elements of software and hardware are sufficiently stable. Crash recovery requires some sort of secure storage on all sides and unique protocols for resynchronization. These problems of fault tolerance are not discussed here because they are not mentioned directly by most payment systems.

Conclusions

Safety and versatility were the main success factors for ePayment systems. There is no ePayment system that is “best” or “most safe.” The suitability of these systems depends on the context of the program. Evaluation of use-value is an effective and simple form of analysis, as it allows for the consideration of different perspectives of use. Even though many ePayment systems are available, as is the case with online gaming, there are situations that need personalized solutions.

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