



THE RISING POPULARITY OF DIGITAL TRANSACTION PLATFORMS

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ABSTRACT

Using of electronic transaction platforms has increased as our economies had become more and more connected to the internet. The platforms presently middle an enormous number of exchanges between end-clients and autonomous merchants and specialist organizations in numerous pieces of the economy. The worldwide rising popularity of digital transaction platforms has huge ramifications for retail, advertising, and circulation as the current connection designs in the worth chain are progressively supplanted by new computerized systems.

The Internet progression and the appearance of online business encouraged digitalization in the installment measures by giving a variety of electronic installment choices including computerized and versatile wallets, digital money, contactless installment strategies, and so on. In the paper, we will investigate the eventual fate of this industry and assess the present status, also development of digital installment in different business sectors. This research investigates different frameworks of electronic transactions, security issues identified with them, and the fate of the portable money installment mode. Later on, we can expect the development of portable money installments worldwide made via cards on the POS terminals by virtue of all the security and convenience provided by versatile electronic installment strategies.

Key words: words: electronic transaction platforms, online business, digital installment strategies, digital money, digital wallets

INTRODUCTION

As the world advances more with innovation improvement, we can see the ascent of electronic installment frameworks and installment handling gadgets. The e-payment system has grown increasingly over the last decades because of the developing spread of web-based banking and shopping. As these increments, improve and give always secure online installment exchanges the level of check and money exchanges will

diminish. It's additionally called an electronic payment system, an electronic installment framework, or an online payment system. This system made it advantageous for the client to pay for anything whenever. This accommodation has set out arising open doors for organizations to broaden their activities in distant regions with no geological limits. (1) Numerous organizations have begun buying goods via e-commerce sites. To offer good service, online companies need to deal with their own e-payment systems.

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PAYMENT GATEWAY

The payment gateway serves to expedite transactions between merchants and customers, using protocols for the secure transmission of transactions through encryption and security.

Cardholder banks accept data sent from applications, websites and mobile devices through payment processes. (2) Gateways perform different types of transactions:

- *Authorization* - used to check available funds before making an actual payment. This type of transaction is used for time-consuming orders, ensuring during authorization that the cardholder is able to pay for his order.
- *Capture* - pre-approved payment with automatic sending of funds to the merchant's account.
- *Sale* - is a subscription or immediate payment for purchases. The cardholder is first authorized following a combination of transactions between him and the recipient of the funds.
- *Refund* - the process of returning money from a merchant to a customer.
- *Void* - again a refund process that is done before the transfer is mastered.

ELECTRONIC PAYMENT SYSTEM SECURE

Security of money transaction is the first rate need for each business. Yet, transaction security turns out to be more significant when you are utilizing an electronic payment preparing framework into your business. There are numerous safety efforts and conventions for getting your money transaction system. (3) The ways for securing transaction:

- *Secure Electronic Transaction (SET) system* - It is an assortment of safety conventions that are utilized to work with electronic money transaction. With SET, computerized wallets, dealer installment arrangements and electronic installment handling programming can be incorporated to validate and guarantee the secrecy of payments.
- *PCI consistent* - The Standard of Industry with payment cards is a money transaction system necessities for safely accepting, putting away and preparing the transaction.
- *Digital signatures* - The computerized marks interface an owner of a card with the e-payment. These marks are the key for guaranteeing the exchange.
- *SSL encryption* - This protocol guarantees security that meets various security conventions like verification, start to finish

encryption, and trustworthiness. SSL encryption guarantees that the exchanges made are free from any danger. (4)

ELECTRONIC MONEY TRANSACTION METHODS

Perhaps the most famous transaction structures online are credit and charge cards. Other than them, there are additional elective installment strategies, for example, bank moves, electronic wallets, smart cards, or bitcoin wallets. The methods could be arranged into two areas, credit and cash transaction systems (5).

Credit transaction system

- *Visa* - A type of the online system which requires the utilization of the card given by a monetary foundation to the cardholder for making installments on the web or through an electronic gadget, without the utilization of money.
- *E-wallet* - A type of prepaid record that stores a client's monetary information, similar to charge and Mastercard data to make an online exchange simpler.
- *Smart card* - A plastic card with a microchip that can be stacked with assets to make exchanges, otherwise called a chip card.

Cash transaction system

- *Debit* - A monetary exchange in which the record holder trains the bank to gather a particular measure of cash from his record electronically to pay for products or administrations.
- *E-check* - A computerized rendition of an old paper check. It's an electronic exchange of cash from a financial balance, generally financial records, without the utilization of the paper check.
- *E-cash* - It is a type of an electronic money transactions, where a specific measure of cash is put away on a customer's gadget and made available for online exchanges.
- *Stored-value card* - A card with a specific measure of cash that can be utilized to play out the exchange in the guarantor store. An ordinary illustration of put away worth cards are gift vouchers.

PAYMENT PROCESSING

At first glance, this is an easy and relatively quick procedure that the customer goes through to pay for the purchased product. It is usually located on a separate window or web page where the required payment card details need to be filled in, but behind this is complex payment processing, which consists of an infrastructure including tools and financial institutions that verify the money transfer data before be approved and completed. (6) All this takes only a few seconds for the client. The steps that a customer needs to go through to make a payment are the following (Figure 1):

- ✓ *Purchase button* - after pressing it by the customer, a new page appears with the fields that need to be filled in and then passed on in order to make the money transfer. To protect this personal data, it is first encrypted and then sent via SSL connection to the seller's server.
- ✓ *Payment gateway* - after the ones submitted by the buyer enter the merchant's server, they are sent on a new encrypted SSL channel through a payment gateway. There are options for some of the customer data to be stored in the system as this is done through a specific secure repository. Usually in these gateway repositories the real data from the buyers' cards are not stored, this is done by preserving a unique token.
- ✓ *Payment server* - payment information goes to a processor of a company that is a third party in the transaction process. Its role is to check the data received from the merchant from the customer in his bank and to return information to the merchant whether the payment is regular and can be completed. Typically, these programs work with the gateways of merchants and all banking and card institutions to be able to verify payments from all possible payment cards.

- ✓ *Transfer* - After the previous processing, the transaction data are transferred to the banks of the cardholders, regardless of their type of credit, debit or virtual card.
- ✓ *Banking institution* - the cardholder's bank after receiving the data has the opportunity to accept or reject the request for a transaction depending on the possibility of its execution. Accordingly, after obtaining permission or refusal, it sends back the data via a code to the packet processing processor, which contains information about the possibility of the transaction.
- ✓ *Payment Gateway* - Data from the payment processor (server) is sent back to the payment gateway and returned to the merchant's website.
- ✓ *Informing the client* - the client's bank automatically sends a message through its interface, containing information about the status of the completed or incomplete transaction.
- ✓ *Banking operations* - the client's bank within days manages to complete the transaction by sending the money to the merchant's account. (7)

E-payment integration

Electronic payments differ in two factors and are divided into four different types of integration. The two main differences are whether PCI DSS is followed or only a transaction gateway is needed, where the user only has to make a payment. PCI DSS is a standard for security of data retrieved when paying by card, it was created by the four major associations - MasterCard, American Express, Visa and Discover. It is used to process and store sensitive information from financial data when paying for a particular service. In order to set up the gateway to accept this type of payment you need to (8):

- ✓ *Level of compliance* - there are four different types of matches, determined by the number of secured transactions, the

number of successfully completed ones is counted.

- ✓ SAQ - is a questionnaire containing the various requirements that must be met by the payment gateway system and serves for self-assessment through twelve questions.
- ✓ AOC - is a type of exam, it is taken after getting acquainted with the requirements of SAQ. There are several types of exams, the difference between which depends on the specifics of the business.

- ✓ ASV - is a list of verified participants after an external scan of the system vulnerability.

The last step - the documents for SAQ, AOC and ASV are sent to the association of payment cards and a selected bank, and a positive response is expected from them. After receiving it, we move on to determine the most appropriate method of integration for business and its implementation in the electronic payment system.

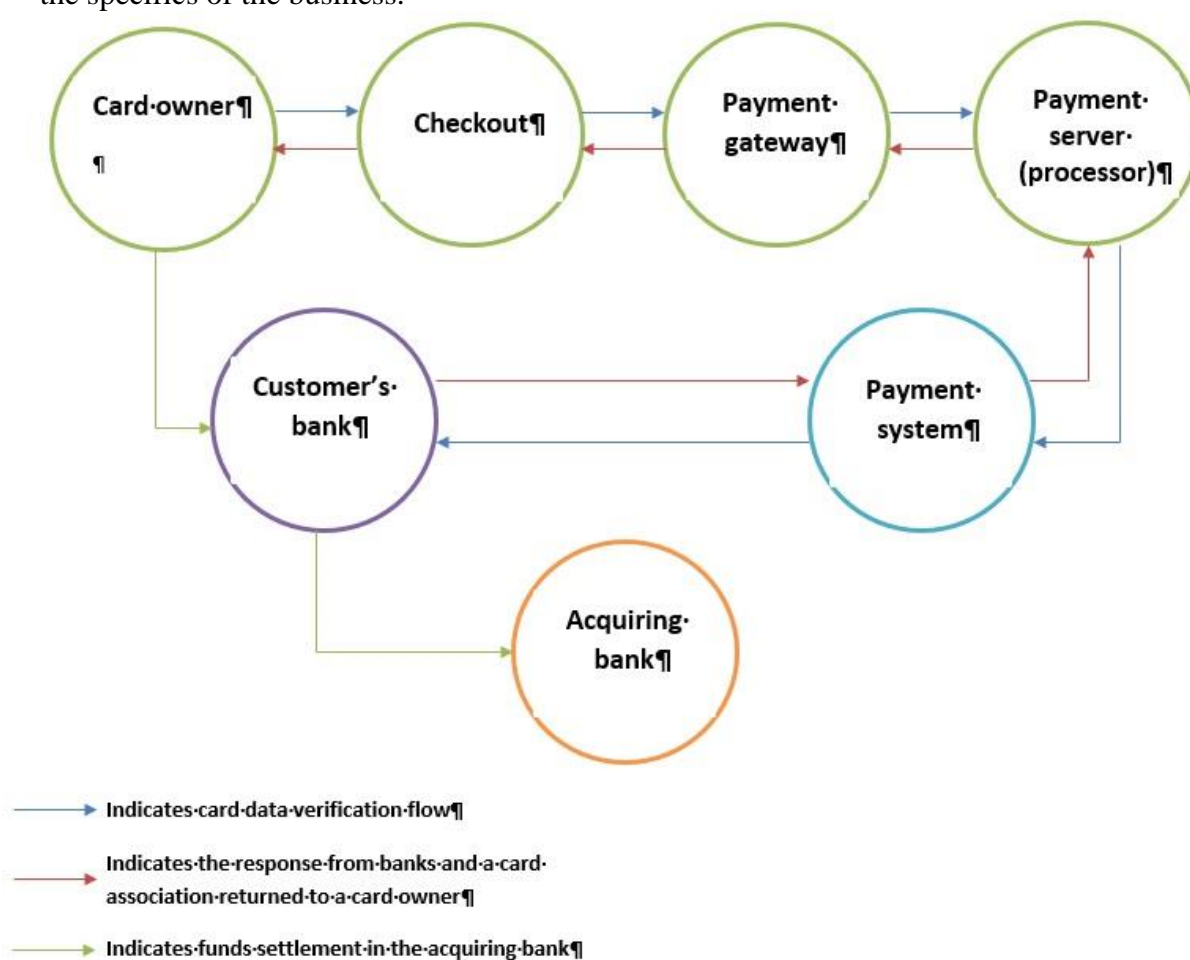


Figure 1. Payment Processing

Host gateway

This is a slightly more complex system for making payments. When the customer tries to complete his payment, he is redirected to a third site, where the payment gateway is located and there he can enter his payment card details. After sending the data, the customer is automatically

returned to the merchant's page to finalize the transaction after receiving approval for it. The integration of such a gateway with the website is most often done through an API, which offers the placement of a button to pay for the site, as this is an extremely convenient way for small companies with small budgets.

On the plus side, all payment processing is done to the service provider, it also stores customer data and payment card and is not required to use and protect PCI requirements. Among the disadvantages is the very long time to complete an order and transfer from site to site, this greatly harms the future conversion of the merchant and creates mistrust on the part of customers why they have to be transferred to a third site to complete the order. (9)

Direct post

This is a common method that also does not require PCI DSS, because it allows payment to be made, and the transaction data after publication in the purchase gateway are sent in accordance with the bank holder's bank and are not stored on a server, but after completion payment they are automatically deleted. This payment method is convenient and recognizable, and mostly helps to establish the brand by making it easier for the consumer to buy, on the other hand, the disadvantage is that it is not secure enough due to API settings and the connection between it and the shopping cart where payment details are published.

Non-hosted method

This is an integrated payment gateway that has a PCI DSS, which means that transaction data can be stored with the necessary security. Among the positive aspects are the control over the transactions on the merchant's site and the customization of the system according to the needs of the site. The downsides are in terms of system maintenance and costs. An infrastructure on the merchant's site must be provided compatible with PCI and all possible client cards. (10)

E-PAYMENT SYSTEM

The universe of online money transaction is advancing every day. E-payment system will be the eventual future of digital money transaction. Every online business need to have legitimate data about current payment patterns to remain in front of rivals. (11) Among the latest trends in electronic payments are:

➤ **Mobile wallet-** This is a mobile device application that can store card data to serve as a portable wallet. Any buyer can easily pay for

goods or services using a mobile wallet instead of physically exchanging money. Virtual wallets limit the need for physical cash to make payments. They have solid security systems that manage to reduce money laundering fraud. For this reason, many of the so-called FinTech companies have focused on creating a variety of payment methods through well-protected virtual wallets.

- **International Remittance** - In many countries around the world, international remittances are essential for their national GDP. This is due to remittances from relatives working abroad to their families in their home country. Today, virtual wallets facilitate international money transfers by offering a variety of features to facilitate fast and secure money transfers. They offer the possibility to set fixed exchange rates when sending money from one country to another.
- **P2P payment** - Peer-to-peer payments use applications such as a virtual wallet for payments or money transfers between two parties through the use of debit or credit cards. To set up this type of payment you need to register a bank account associated with a debit or credit card. Once the account is activated, money can be transferred to different accounts as fees and transfer times vary from provider to provider.
- **Wearables** – Portable devices are gaining more and more popularity using various online payment platforms such as Samsung Pay, Apple Watch, Fitbit and others. These are devices that are used daily by humans. An example of this is smart watches with which payments can be made.
- **Biometric Payments** - This is a method of payment by face scanning, eye recognition, fingerprint, or others. The ease and speed of making money transactions are among the main advantages of this method. Instead of entering a security code (PIN), it is only necessary to use a camera to recognize the user's face and compare it with the one stored in the system. Eye recognition payment works in the same way, while the fingerprint needs to be scanned by a sensor that is touched by the user.

- Quick Response (QR) Codes - This is a method of electronic payment through a terminal, and in order to be exhausted it is necessary to scan a QR code through the virtual wallet application and it automatically downloads the data for execution.
- Contactless payments - This payment method only requires that a payment card or payment device be carefully placed on a POS terminal. Using RFID and modern NFC technology it is unnecessary to scan the magnetic stripe of the payment card and enter a PIN code while allegedly using a contactless electronic payment device. In case of a signal from the system of the POS terminal of the merchant, it is only necessary to approach the card to the device to submit information from the card chip to the owner's bank and the payment to be made.
- AI payments - This type of electronic payment technology makes it easier for companies to adhere to transparency with their customers. It has a variety of features such as speakers, chat bots, machine learning tools, and deep learning software. Through the created revolutions in the segment of electronic payments with their microphone, users can start their payments, and through chat bots, users can make inquiries and place their orders.

ONLINE PAYMENT STATISTIC

The global epidemic of COVID-19 and the resulting public health crisis have had different consequences for the global monetary sector in 2020. Restrictive measures taken by governments to preserve human health have led to changes in consumer behavior, which have affected the most already medium and small businesses around the world. For the first six months of 2020, global revenues fell by more than 20% compared to 2019. Expectations are related to a slow recovery in the second half of the year and reaching growth levels in the last few years on a year-on-year basis of 7%.

In 2019, global payments reached nearly 2 trillion dollars, which is an annual increase of 5% compared to 2018. Cash payments also increased to nearly 40% of all payments, an increase of approximately 10% compared to 5 years earlier.

Stability was shattered in early 2020, with the global epidemic causing a change in geopolitics, such as measures for physical distance and the cessation of various businesses. As a result, global payment revenues shrank by approximately 200 billion dollars in the first six months of the year from a year earlier. Forecasts for the end of 2020 indicate that the contraction on an annual basis will be about 140 billion dollars or about 7% on an annual basis.

The restrictions imposed by the various governments as a result of COVID-19 on its transition from a local contagion to a global pandemic have had unexpected consequences. Reduced the use of money to incur expenditures in various areas of the economy. This limitation was most noticeable in the tourism and travel sector, where a contraction of almost 80% on an annual basis was reported. Reduced use of physical money has increased the costs incurred in the digital commerce sector. In retail trade in general, there is no decline, but rather a shift to contactless payments. In the United States, there is a 30% increase in online payments compared to a year earlier, reaching 340 billion dollars.

In Europe, there are differences in shopping behavior depending on geographical areas. The transition to contactless payments by the elderly population can be considered positive for online trade, turning largely to online shopping for the first time. In most cases, debit cards are mostly used as a logical substitute for physical money, while credit card payments show a contraction, which largely indicates the payment of obligations by consumers in order to prepare for more unpredictable times. (12)

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The challenges posed by the deteriorating health situation around the world over the past year have shown that businesses need to take action to digitize much of their business processes, as well as communication, trade and payments by customers. The choice of payment solution should meet both the needs of the business and make it easier for customers to make a purchase. It must have all the current protections so that users are protected from fraud. Sophisticated payment systems are denied by 11% of users, and

too much information required when making an online payment is denied by 12%.

The payment gateway used must accept electronic payments from both debit and credit cards in different currencies so that payments can be accepted from anywhere in the world.

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