8.1 Online & Electronic Payments   مهمة جدا

Q What Is Online Payment And How To Accept Payments Online?

Online payment refers to money that is exchanged electronically. Typically, this involves use of 1- computer networks, 2- the internet and 3- digital stored value systems. When you collect a payment over the internet, you are accepting an online payment. **Online payment is the transaction that results in transfer of monetary funds from the customer bank or credit card account to your bank account.** The online payment can be done from a credit card, checking account or other financial organization like paypal.

Merchants accepting online payments need to comply with a list of security requirements. The online payment specific security is designed to decrease the chance of the billing and personal information being stolen. The transfer needs to occur over secure encrypted connection. In the cases of recurring billing where customer data is stored, the merchant needs to enforce a longer list of security features and protocols that are usually referred to as PCI compliance requirements. **Recurring billing systems انظمة المدفوعات المكررة that employ online payment procedures need to be periodically scanned for security vulnerabilities.**

To accept an online payment the merchant needs to have access to an Online Payment Gateway. The Online Payment Gateway is a service provider that is integrated with the credit card and transfers the online payment information between the merchant and the <u>payment processor</u>.

The typical online payment process has the following stages:

1. Customer submits the payment information to the merchant. For example customer completes the payment form on the merchant website and submits the information.

2. The merchant submits the payment information to the online payment gateway.

3. The online payment gateway submits the payment to the payment processor.

4. The payment processor authorizes the payment and responds to the payment gateway

5. The payment gateway responds back to the merchant

6. The merchant responds back to the customer showing if the online payment was successful or not and taking the appropriate action.

An e-commerce online payment system facilitates the acceptance of electronic payment for online transactions. A payment service provider (PSP) offers merchants online services for accepting electronic online payments by a variety of payment methods including credit card, bank-based payments such as direct debit, bank transfer. Some PSPs provide services to process other methods including cash payments, wallets such as PayPal, prepaid cards or vouchers, and even paper.

An Internet Merchant Account (IMA) allows merchants to accept debit/credit card payments directly to their business bank account, online. Due to the stringent criteria المعايير الصارمة required for an Internet Merchant Account (IMA), many smaller businesses opt تختار for a payment processing company instead.

A payment processor is a company (often a third party) appointed تعين by a merchant to handle transactions from various channels such as credit cards and debit cards for merchant acquiring banks. They are usually broken down into two types: front-end and back-end.

Front-end processors have connections to various card associations and supply authorization and settlement services to the merchant banks' merchants. **Back-end processors accept settlements from front-end processors and, via The Federal Reserve Bank for example, move the money from the issuing bank to the merchant bank.**

In an operation that will usually take a few seconds, the payment processor will both check the details received by forwarding them to the respective card's issuing bank or card association for verification, and also carry out a series of anti-fraud measures against the transaction.

Additional parameters, including the card's country of issue and its previous payment history, are also used to gauge the probability of the transaction being approved.

Once the payment processor has received confirmation that the credit card details have been verified, the information will be relayed back via the payment gateway to the merchant, who will then complete the payment transaction. If verification is denied by the card association, the payment processor will relay the information to the merchant, who will then decline the transaction.

8.2 Payment Processing

As mentioned earlier, there are three different ways to process payments over the internet: Cash Model, Check Model and Credit Model

a) Cash Model

The Cash Model (e-cash) is the creation of electronic money or tokens, usually by a bank, which buyers and sellers can use it for buying and selling goods and services.

b) Check Model

In using the Check Model, the consumer presents a digital version of their check to a web storefront.

c) Credit Model

In the Credit Model the consumer enters their credit card information and the payment is processed by an accredited organization المؤسسة الضامنة , usually a bank, using SET (Secure Electronic Transaction التعامل المالي الآمن).

8.3 SET

SET, which stands for secure electronic transactions, is used with the credit model and is the most common method الطريقة الاكثر شيوعا of payment over the internet since it uses the existing credit card processing system.

SET Overview
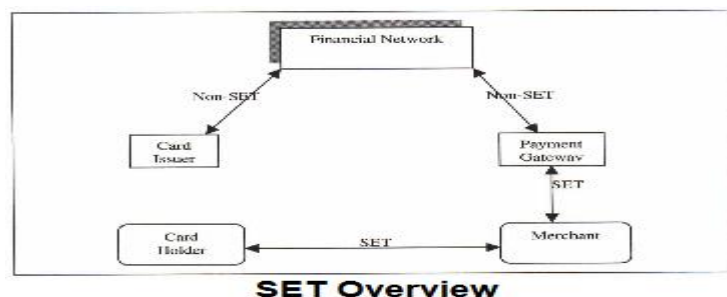
Step One: The consumer enters merchant's website and place order along with their credit card information and sends it to the business.

Step Two: The business sends the consumer an invoice قائمة الحساب, their certificate and their bank's certificate.

Step Three: The consumer acknowledges يقبل او يعترف and approves يؤكد this information and returns يعيدها it to the business.

Step Four: The business then generates an authorization request طلب تخويل for your credit card and sends it to their bank.

Step Five: The business's bank then sends the credit authorization request to the Acquirer.

Step Six: The Acquirer sends an acknowledgement back to the business's bank after receiving بعد استلامه an acknowledgement from the consumer's bank.

Step Seven: Once the consumer's bank authorizes payment يؤذن بالصرف, the business's bank sends an acknowledgement back to the business with the authorization number.

SET in action
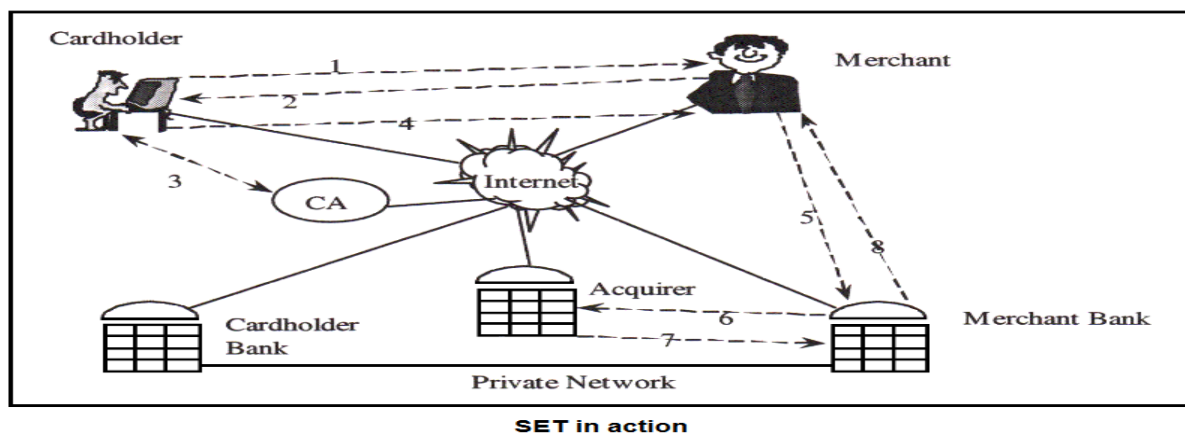
Steps 1 to 3 happen while you are placing your order on the business's web site. Steps 4 through 7 are the same steps taken when you purchase something at a store. These steps are just taking place over the internet instead of at a cash register or machine card reader for busnisses.

8.4- INTERNET MERCHANT ACCOUNT

After selecting the type of payment processing to use, the next step is to setup an Internet Merchant Account. **The Internet Merchant Account needs to be setup يتم تنصيبه with a financial institution مؤسسة مالية that enables business's owner to accept credit cards; debit card cards for payments over the internet.**

8.5 Difference between a debit and credit card?مهم جدا

Debit cards are used to pay for goods in shops and to withdraw money at cash machines. The money is automatically taken from your current account when you spend it, so you must have enough money in your account or an agreed overdraft to cover the transaction. Some of debit cards are now contactless, which means consumer don't need to enter your PIN if the purchase is for less than small ampunt of money, let say £30.

A credit card, isn't linked to your current account and is a credit facility that enables you to buy things immediately, up to a pre-arranged limit, and pay for them at a later date. The cost of the purchase is added to your credit card account and you get a statement every month.

You then have a choice of paying off دفع المبلغ بصورة كاملة مرة واحدة the bill in full by a set date with no interest or paying at least a minimum amount and spreading the

repayments over a period of time. You'll have to pay interest on the balance if you do this, therefore, the quicker you pay off your balance, the less interest you'll pay.

https://www.barclays.co.uk/help/cards/debit-card/difference-debit-credit/

8.6 Digital Wallet Technology مهمة جدا جدا

A digital wallet has both a software and information component. The software provides security and encryption for the personal information and for the actual transaction.

Typically, digital wallets are stored on the client side and are easily self-maintained and fully compatible with most e-commerce Web sites. The information component is basically a database of user-input information. This information consists of your shipping address, billing address, payment methods (including credit card numbers, expiry dates, and security numbers), and other information.

The key point to take from digital wallets is that they're composed of both digital wallet devices and digital wallet systems. There are dedicated digital wallet devices such as the biometric wallet by Dunhill, where it's a physical device holding someone's cash and cards along with a Bluetooth mobile connection.

[http://www.pcmag.com/article2/0,2817,2378775,00.asp]

Digital wallet systems enable the widespread use of digital wallet transactions among various retail vendors in the form of mobile payments systems and digital wallet applications.

8.7. Payments for goods and services purchased online

A client-side digital wallet requires minimal setup and is relatively easy to use. Once the software is installed, the user begins by entering all the pertinent information معلومات وثيقة الصلة. The digital wallet is now set up. At the purchase or check-out page of an e-commerce site, the digital wallet software has the ability to automatically enter the user information in the online form. By default, most digital wallets prompt when the software recognizes a form in which it can fill out; if one chooses to fill out the form automatically, the user will be prompted for a password. This keeps unauthorized users away from viewing personal information stored on a particular computer.

Digital wallets are available to consumers free of charge, and they're fairly easy to obtain. For example, when a consumer makes a purchase at a merchant site that's set up to handle server-side digital wallets, he types his name and payment and shipping information into the merchant's own form. At the end of the purchase, the consumer is asked to sign up for a wallet of his choice by entering a user name and password for future purchases. Users can also acquire wallets at a wallet vendor's site.

8.8. Advantages for e-commerce sites

Upwards of 25% of online shoppers does not complet يتخلون their order due to frustration الاحباط والفشل in filling in forms. The digital wallet solved this problem by giving users the option to transfer their information securely and accurately. This simplified approach to completing transactions results in better usability and ultimately more utility for the customer.

Consumers are not required to fill out order forms on each site when they purchase an item because the information has already been stored and is automatically updated and entered into the order fields across merchant sites

when using a digital wallet. Consumers also benefit when using digital wallets because their information is encrypted or protected by a private software code; merchants benefit by receiving protection against fraud.

Although a wallet is free for consumers, vendors charge merchants for wallets. Some wallet vendors make arrangements for merchants to pay them a percentage of every successful purchase directed through their wallets. In other cases, digital wallet vendors process the transactions between cardholders and participating merchants and charge merchants a flat fee.

Digital Wallets can also increase the security of the transaction since the wallet typically does not pass payment card details to the website (a unique transaction identifier or token is shared instead). Increasingly this approach is a feature of online payment gateways, especially if the payment gateway offers a "hosted payment page" integration approach.

8.9 Near Field Communication

Near-field communication (NFC) is a set of communication protocols that enable two electronic devices, one of which is usually a portable device such as a smartphone, to establish communication by bringing them within 4 cm (1.6 in) of each other. NFC technology provides data connection over the air, without the need of any cables or ports.

NFC devices are used in contactless payment systems, similar to those used in credit cards and electronic ticket smartcards and allow mobile payment to replace or supplement these systems. This is sometimes referred to as NFC/CTLS (Contactless) or CTLS NFC.

Also, NFC is used for social networking, for sharing contacts, photos, videos or files. The technology also used to securely store sensitive data offline..NFC offers a low-speed connection with simple setup that can be used to bootstrap more capable wireless connections. Fast and convenient, NFC technology is popular in parts of Europe and Asia, and is quickly spreading throughout the United States.

The technology behind NFC allows a device, known as a reader, or active device, to create a radio frequency current that communicates with another NFC compatible device or a small NFC tag holding the information the reader wants. Passive devices, such as the NFC tag in smart posters, store information and communicate with the reader but do not actively read other devices. Peer-to-peer communication through two active devices is also a possibility with NFC. This allows both devices to send and receive information.

Both businesses and individuals benefit from near field communication technology. By integrating credit cards, subway tickets, and paper coupons all into one device, a customer can board a train, pay for groceries, redeem coupons or store loyalty points, and even exchange contact information all with the wave of a smartphone. Faster transaction times mean less waiting in line and happier customers. Fewer physical cards to carry around means the customer is less likely to lose one or have it stolen.

Who's currently in on the action with NFC technology and mobile payments? Google has launched Google Wallet that supports MasterCard PayPass, PayPal offers money transfers between smartphones, and other companies are expected to

follow suit. As the technology grows, more NFC compatible smartphones will be available and more stores will offer NFC card readers for customer convenience.