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To Study the Security Aspects in the Online Transactions Using PayPal

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ABSTRACT: The rapid growth of internet over the past several years has increased use of online trading dramatically over traditional trading. Online trading includes online transactions like selling, purchasing and payment without face to face interaction. Online payments give birth to security threats, there are new fraudulent and sophisticated techniques being developed by fraudster, for that several online payment methods have been developed. The purpose of this research paper is to study security threats in online payment, it further addresses how PayPal (best recommended online payment method) gives various possible measures for prevention and detection of security threats in order to minimize frauds and make internet a safer, sound and trusted environment to consumers and merchants during online trading. PayPal is the preferred method of payment for almost all online shoppers. It has a reputation for security, protecting the interests of both merchants and consumers.

KEYWORDS: Online Trading, PayPal, Security threats, measures, prevention, detection.

I. INTRODUCTION

Traditional Trading:

Traditional trade includes open markets, corner stores, and street vendors which found in every developing economy. The majority of people buy their goods using traditional trading. The word traditional trade is collective representation of small and simple stores.

Modern/Online Trading:

The big change to retail has come through multi-brand shops in malls and the way businesses are conducted called as online trading (electronically on the net), with far less constraints of space and infrastructure.

Many people value the traditional broker-customer relationship, but changes in the industry have caused more and more customers to shift from traditional trading to online trading. If we compare traditional forms of trade with modern forms of trade, we will find differences between these two. Before making decision one should take careful look at the differences between these two.

Difference between Traditional Trading and Online Trading:

- The cost of a traditional trading is usually significantly higher than the cost of an online trading.
- The hours of traditional trading are typically 9:00 am to 9:00 pm. Online trading takes place 24 hours a day, seven days a week, with no additional fees no matter when the order is placed.
- Online trading can be conducted anywhere in the world when the customer is flying over skies or inside a moving train. On the other hand, traditional trading requires the presence of the customer in the shop and the display of all items on sale.
- Traditional trading includes relationship with owners which can offer guidance and advice to customers. Whereas customers don't develop any kind of a relationship with owner during online trading and may never see the face of owner because there is virtually no owner to be seen by customers.

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- Online trading offers up-to-date charts showing trading information and current trends in big malls or electronic stores and entire market is in front of a customer through mobile.

II. ONLINE TRADING

Why Online Trading?

More and more traders are now moving away from the traditional trading to online trading. The reason for the switch is Cost, efficiency, and transparency of online trading. Online trading is preferable because, it is not only more convenient, but it is also more efficient and, perhaps most importantly, much cheaper. Online trading software is widely available on mobile phones, tablets, and PC's, an online trader can literally trade anywhere, provided he has internet access.

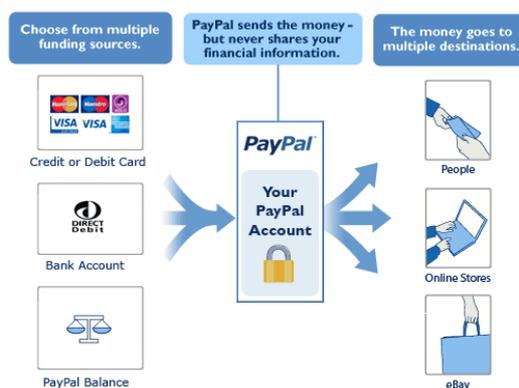
Use of online trading had some important implications:

- Reduced cost of transactions: By automating as much of the process as possible costs are brought down.
- Greater competition: While online trading hasn't necessarily lowered the cost of entry to the financial services industry, it has removed barriers within the industry and had a globalization-style competition effect.
- Increased transparency: Online trading has meant that the markets are less opaque. It's easier to find out the price of securities when that information is flowing around the world electronically.

III. PAYPAL

What is PayPal?

PayPal is an eBay (E-Commerce) company, the trusted leading company in online payments, enables buyers and businesses to send and receive money online. PayPal is one of the largest online payment processors in the world which has more than 153 million account members in 190 countries and regions. PayPal is used by eBay buyers and sellers, online retailers and other businesses and is available in over 190 markets around the world and in more than 26 currencies.



Why to use PayPal?

Fast: Receive instant payments for eBay items in multiple currencies no waiting for money orders.

Secure: Get paid securely, protects against fraud with industry-leading technology and expert fraud teams.

Easy: Offer buyers more ways to pay like credit cards and bank accounts.

Cost effective: Use free tools to effortlessly integrate PayPal into your eBay auctions.

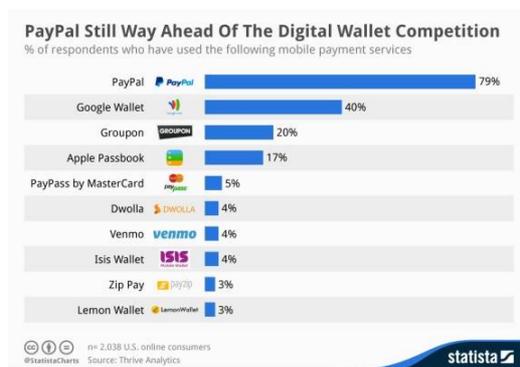
Global: Trusted by millions, accepted by many businesses across the globe to make payments locally or internationally.

Solution: PayPal is a solution for secure payment which enables any individual or business with an email address to send and receive money online. PayPal lets eBay sellers offer buyers multiple ways to pay, including all major credit cards, debit cards, bank transfers, and more.

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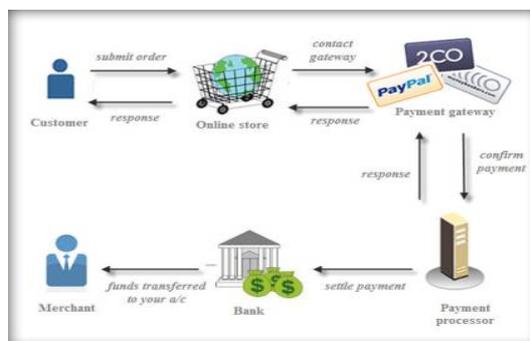
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IV. WORKING OF PAYPAL

Transaction is no longer limited to real world today. Most of the companies having their own e-commerce sites with many payment options offered for secure online transaction. Transaction security issue like phishing scam still happening all over the world. Online transactions can be safer if you are using third party system. These are external websites which connect into your bank account and performs transactions without sharing your confidential data to another website. The process requires a redirect to the service website where you'll enter user ID and password.

It is very difficult to keep our confidential information hidden if we are doing online transaction, but consider you are doing online transaction through third party system then you are over secure line. PayPal is the most trusted purchasing system on the Internet for the same. Reason for using PayPal is most e-commerce websites will accept PayPal payments. Online purchasing and fund transfer through PayPal is safer than ever before.



How PayPal Works?

The idea behind PayPal is simple: Use encryption software to allow people to make financial transfers between computers. PayPal is an online payment service that allows individuals and businesses to transfer funds electronically.





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PayPal Account Types:

PayPal has three account types: Personal, Premier and Business. If you just plan to use PayPal for the occasional eBay auction or online purchase, a personal account is the right choice. If you intend to use PayPal to accept payments for a business, then a business or premier account would be more suitable. If you select a personal account, you can upgrade in the future.

Sign-up for PayPal:

Signing up for PayPal is quick, and doesn't even require you to enter any bank account information. However, if you want to use many of PayPal's features, you'll need to add and verify account or credit card.

PayPal functions:

All these account types can use PayPal core functions like sending money, receiving money, requesting money, using auction tools, making payments from a Web site, debit card services and customer service.

Sending Money:

Through PayPal sending money is very simple: Provide an e-mail address or mobile number plus the amount and purpose for sending.

In order to send money using your PayPal account, you'll need one of the two things:

- Amount already transferred to your PayPal account before the transaction
- An instant transfer account, usually a checking or savings account, from which PayPal will withdraw the necessary amount to cover the transaction

To send money to a recipient person, all you need is the e-mail address associated with that person's PayPal account. For an organization or business, you can usually send money from a PayPal link at its Web site.

Receiving Money:

If you want to use PayPal to receive money, you have so many options available. Give the e-mail address associated with your PayPal account, that person can send you money from their own PayPal account. If you're selling items on eBay, you can select PayPal as an option for accepting payment through eBay. If you're selling from your own store or Web site, there are a number of options available for completing sales transactions with PayPal, including the following:

- Adding a PayPal "buy now" button for each item you want to sell
- Integrating a PayPal shopping cart with your Web site using the PayPal application programming interface (API)
- Accepting payments offline or off-site to process later using PayPal's Virtual Terminal

Payment methods supported by PayPal:

- **Instant transfer:** Sending money this way means the money is immediately credited to the recipient's account. That person can then immediately transfer the money in their personal bank account. If you want to transfer, you must have a credit or debit card registered with PayPal as a backup for your funds.
- **Credit card:** Putting your PayPal purchases on a credit card is a good idea. You are not only protected by PayPal, but your credit card company also backs you up in case of fraud.
- **eCheck:** Sending an eCheck is just like writing a check from your checking account; it takes from three to five days for an eCheck to clear. You don't need a backup source of funds when you use eCheck.
- **PayPal balance:** If someone sent you money through PayPal or you've sold something on eBay, you have a balance in your PayPal account. This balance is first applied to any purchases you've made. Then, when your account has no balance, you can choose to pay by credit card.

Advantages of using PayPal:

- **Mobile Application:** The PayPal iPhone application makes it easy to shop online and transfer money wherever you are. Using this app you will be able to transfer, send money, pay bills, review your transaction history, and make purchasing on a click.



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- **Assurance:** PayPal will always ask you to confirm transactions with a PIN, so you can rest assured that your money is safe even though your iPhone be lost or stolen.
- **Free Service:** Best reasons for using PayPal is its cost: free. That is no annual membership fees, no processing fees, and no service charges by PayPal.
- **Sponsors discounts:** PayPal sponsors special discounts for customers that shop with PayPal at selected retailers.
- **Expand Business:** Offering PayPal helps you to quickly expand your reach and access to millions of active buyers worldwide, increase your sales, and meet your payment needs quickly, securely, and flexibly.
- **Notification:** PayPal offers automated email notifications to keep you updated on your account transaction. You can choose to receive these emails automatically when you receive money.

	 PayPal Working Capital	 Credit Card	 Traditional Bank Loan
Application time	5 minutes	20 minutes	Hours
Total funding time	< 1 minute	1 week	1 week
Flexible payments that change with your sales *	✓	✗ Monthly billing	✗ Monthly billing
Single, fixed fee	✓	✗ Financing fees Annual fees Late fees	✗ Utilization fees Late fees
Periodic interest	None	Yes	Yes
Credit check	No	Yes	Yes
Personal Guarantee (PG)	No	Yes	Yes
Pre-payment penalty	No	No	Yes

V. SECURITY THREATS IN ONLINE PAYMENT

Online shopping, online money transfers and online banking make our life easier and also make life easier for cyber criminals by offering them easy ways to steal users' money. This has given birth to electronic frauds and it has become a major problem in the online payment system. Technology also presents some security threats like Fake Websites, virus, malware, Phishing, Adware and Spam.

For e-business several electronic payments systems have been developed. PayPal is the most popular online payment service on the World Wide Web.

Safer from security threats Using PayPal:

Online payment method PayPal is highly secure because it uses industry leading technology such as Secure Sockets Layer protocol (SSL) to keep customer's information safe and secure.

PayPal is dedicated to fighting fraud and scams. PayPal automatically encrypts user's confidential information in transit from their computer to PayPal's site using the SSL protocol with an encryption key length of 128-bits. Before user even registers or log in to the PayPal site, PayPal's server checks that whether user is using an approved browser which uses SSL 3.0 or higher protocol.

Once user's confidential information reaches to the PayPal site, it resides on a server that is heavily guarded both physically and electronically. PayPal servers present behind an electronic firewall and are not directly connected to the internet, so user's confidential information is available only to authorized computers.



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VI. MEASURES FOR SECURITY THREATS DETECTION AND PREVENTION IN PAYPAL

In PayPal, standard is set for fraud prevention by delivering holistic security solutions to minimize fraud across major payment types including online, offline or mobile payments.

There are some things user should know and do, to help to keep information and money safer.

- **Spoof websites:**

Spoof websites often look like the real websites. When logging into online banking, shopping or email sites always look for “https” at the beginning of the URL – the “s” stands for secure. Also check for the padlock symbol in browser’s address bar. Phishers often create fake websites with URLs similar to the real one.

- **Log in safely:**

To log in to PayPal account or access the PayPal website, open a new web browser (e.g., Internet Explorer or Firefox or Chrome) and type in the following: <https://www.paypal.com/>

- **Phishing emails:**

The people behind phishing emails are experts in manipulation. Look out for things Generic greetings, like “Dear user”, Wrong, out of date or out of place logos or design, Urgent statements demanding user react immediately, Requests for financial or personal information. Emails from PayPal will always address to user by first and last name or the business name associated with user’s PayPal account.

- **Need look out for attachments:**

PayPal emails will never request user to download an attachment or a software program. An attachment found in a PayPal scam email will often contain a virus that can harm your computer or compromise your PayPal account.

- **Information guarded:**

PayPal combines world-class anti-fraud detection with 24 hours a day, seven days a week for account monitoring to keep their users safer. User’s personal and financial information are securely encrypted to ensure money and information stays safer when user pay with PayPal.

- **Fraud prevention:**

Every transaction is monitored and analyzed within milliseconds to identify and prevent fraud before it occurs. Complicated fraud risk models and analysis tools can be customized to identify user’s unique business needs.

- **Account protection:**

Users credit or debit card details should be linked to PayPal account only once. Login and financial information kept secure so that user can shop without exposing their card details.

- **System security tips by PayPal:**

- i. Keep your software up to date.
- ii. Install anti-virus software.
- iii. Be careful what you click.

- **Mobile security tips by PayPal:**

- i. Always activate a PIN or lock function for mobile device.
- ii. Automate software updates.
- iii. When downloading applications be careful.

VII. CONCLUSION

Competition between businesses is very harsh in today’s world, and it is even more for those who work in online environment. In such environment, if customers are not satisfied with the provided services, they will change the merchant easily. In order to remain where the business stands today, and to establish its position even further, businesses will have to stay up-to-date with recent changes and developments in technologies, security, and marketing. Out of these security is more essential part in online transaction for customers as well as for merchants. PayPal is one of the worlds largest and trusted online payment transfer method which is faster, secure way to send money, make an online payment, receive money.



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As the financial data is digitized, the opportunities for online payment frauds also continue to rise. The merchants and the consumers have to be cautious and take preventive measure to minimize the fraud in online payment. With PayPal, industry's most experienced fraud team is associated which detects fraud transactions instantly. PayPal processes billions of dollars in payments each year, allowing us to continually perfect our anti-fraud protections. As a result, PayPal's loss rate is considerably lower than the industry average. It has progressive system upgrades which keep customers ahead of fraudsters. It uses extensive data encryption technique for strict confidentiality and security of customer's data. PayPal monitors and analyze incoming transactions towards PayPal site 24 hours a day, seven days a week. Thus in regards to using a reliable money transfer service for payment '**PayPal**' comes out top of the list in terms of security, flexibility, ease of use and reliability.

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5. <https://www.paypal.com/in/webapps/mpp/pay-online>

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