

An **e-commerce payment system** facilitates the acceptance of **electronic payment** for **online transactions**. Also known as a sample of **Electronic Data Interchange (EDI)**, e-commerce payment systems have become increasingly popular due to the widespread use of the internet-based shopping and banking.

Over the years, **credit cards** have become one of the most common forms of payment for e-commerce transactions. In North America almost 90% of online retail transactions were made with this payment type

A **smartcard** is similar to a credit card; however it contains an embedded 8-bit microprocessor and uses electronic cash which transfers from the consumers' card to the sellers' device. A popular smartcard initiative is the VISA Smartcard<sup>[4]</sup>. Using the VISA smartcard you can transfer electronic cash to your card from your bank account, and you can then use your card at various retailers and on the internet.

There are companies that enable financial transactions to take place over the internet, such as **PayPal**.

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## Methods of online payment

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### Bank payments

This is a system that does not involve any sort of physical card. It is used by customers who have accounts enabled with **Internet banking**. Instead of entering card details on the purchaser's site, in this system the payment gateway allows one to specify which bank they wish to pay from. Then the user is redirected to the bank's website, where one can authenticate oneself and then approve the payment.

### PayPal<sup>[edit]</sup>

**PayPal** is a global e-commerce business allowing payments and money transfers to be made through the Internet. Online money transfers serve as electronic alternatives to paying with traditional paper methods, such as cheques and money orders.

### Paymentwall<sup>[edit]</sup>

**Paymentwall**, an **e-commerce** solutions providing company launched in 2010, offers a wide range of online payment methods that its clients can integrate on their website.

### Google Wallet<sup>[edit]</sup>

**Google Wallet** was launched in 2011, serving a similar function as PayPal to facilitate payments and transfer money online. It also features a security that has not been cracked to date<sup>[when?]</sup>, and the ability to send payments as attachments via email.

# MOBILE BANKING

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**Mobile banking** is a service provided by a [bank](#) or other [financial institution](#) that allows its customers to conduct [financial transactions](#) remotely using a [mobile device](#) such as a [smartphone](#) or [tablet](#). Unlike the related [internet banking](#) it uses software, usually called an [app](#), provided by the financial institution for the purpose. Mobile banking is usually available on a 24-hour basis. Some financial institutions have restrictions on which accounts may be accessed through mobile banking, as well as a limit on the amount that can be transacted.

## Mobile banking services

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### Account information

1. Mini-statements and checking of account history
2. Alerts on account activity or passing of set thresholds
3. Monitoring of term deposits
4. Access to loan statements
5. Access to card statements
6. [Mutual funds](#) / equity statements
7. Insurance policy management

### Transaction

1. [Funds transfers](#) between the customer's linked accounts
2. Paying third parties, including [bill payments](#) and third party [fund transfers](#) (see, e.g., [FAST](#))
3. [Check Remote Deposit](#)

### Investments

1. Portfolio management services
2. Real-time stock

### Support

1. Status of requests for credit, including mortgage approval, and insurance coverage
2. Check (cheque) book and card requests
3. Exchange of data messages and email, including complaint submission and tracking
4. ATM Location

### Content services

1. General information such as weather updates, news
2. [Loyalty-related](#) offers
3. [Location-based services](#)

## **Challenges for a mobile banking solution**

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### **Handset accessibility**

There are a large number of different mobile phone devices and it is a big challenge for banks to offer a mobile banking solution on any type of device. Some of these devices support [Java ME](#) and others support [SIM Application Toolkit](#), a WAP browser, or only [SMS](#).

### **Security**

As with most internet-connected devices, as well as mobile-telephony devices, [cybercrime](#) rates are escalating year-on-year. The types of cybercrimes which may affect mobile-banking might range from unauthorized use while the owner is using the toilet, to remote-hacking, or even jamming or interference via the internet or telephone network datastreams.

### **Scalability and reliability**

Another challenge for the [CIOs](#) and [CTOs](#) of the banks is to scale-up the mobile banking infrastructure to handle exponential growth of the customer base. With mobile banking, the customer may be sitting in any part of the world (true anytime, anywhere banking) and hence banks need to ensure that the systems are up and running in a true 24 x 7 fashion. As customers will find mobile banking more and more useful, their expectations from the solution will increase. Banks unable to meet the performance and reliability expectations may lose customer confidence.

### **Application distribution**

Due to the nature of the connectivity between bank and its customers, it would be impractical to expect customers to regularly visit banks or connect to a web site for regular upgrade of their mobile banking application. It will be expected that the mobile application itself check the upgrades and updates and download necessary patches (so called "Over The Air" updates). However, there could be many issues to implement this approach such as upgrade / synchronization of other dependent components.

### **User adoption**

It should be noted that studies have shown that a huge concerning factor of having mobil banking more widely used, is a banking customer's unwillingness to adapt. Many consumers, whether they are misinformed or not, do not want to begin using mobile banking for several reasons. These can include the learning curve associated with new technology, having fears about possible security compromises, just simply not wanting to start using technology, etc.

### **Personalization**

It would be expected from the mobile application to support personalization such as :

1. Preferred Language
2. Date / Time format
3. Amount format
4. Default transactions
5. Standard Beneficiary list
6. Alerts

## PAYMENT APPS IN INDIA

### 1) *Airtel Money:*

With the Airtel Money app, users can easily recharge prepaid accounts or pay postpaid bills. You can also shop online if your digital wallet has cash loaded in it. It's also extremely safe as every transaction or payment you make requires a secret 4-digit mPin.

### 2) *Citi MasterPass:*

Citi MasterPass, a free digital wallet, helps make checking out while online shopping a speedier process. Once you've stored all your payment and shipping details in your Citi Wallet, simply click on the MasterPass button and it will take care of the rest.

### 3) *Citrus Pay:*

Citrus Pay, one of the top e-wallets in India, it offers a Citrus wallet for customers as well as payment solutions to businesses. With a strong base of 800 million customers, it has definitely earned its spot as one of the best mobile wallets in India.

### 4) *Ezetap:*

Ezetap, a Bangalore based digital payment solution founded in 2011, offers business owners solutions to accept card payments via electronic devices. It also send customers e-receipts through an SMS or email.

### 5) *Freecharge:*

Freecharge, one of the most famous names right now when it comes to digital payment in India, has been known to target the youth in all their promotions. With equivalent amount of coupons given for every recharge you make, it's a great option to save while paying your bills online.

### 6) *HDFC PayZapp:*

HDFC PayZapp, making digital payment in India simplified with one click payments, is one of the top online wallets in India. Users can easily compare flight and hotel tickets and even buy music or pay bills with the app. Simple connect your debit/credit card once and **forget to worry** about making payments.

### 7) *ICICI Pockets:*

While you might find a Pocket card redundant, considering you're opting for an e-wallet app to avoid using a card, they do have a pretty neat wallet app. It's VISA powered and can be used on any Indian website, or to transfer money to email ids, WhatsApp contacts, and also just tap and pay your friends easily.

**8) JioMoney:**

JioMoney, launched recently in 2016 by Jio, is a digital payment app. With JioMoney, one can receive great discounts and offers. Users can also bookmark their frequently visited retailers so shopping can be made quicker than usual.

**9) Juspay:**

JusPay Safe is a payment browser with over 650+ transactions in a day. They offer a browser with which users can make payments quickly via cards with 2 clicks.

**10) LIME:**

LIME, launched by AXIS in 2015, was the first mobile app in India to integrate wallets, shopping, payments, and banking. Apart from the usual features like making payments, they also let you analyze what you spend. With a cool feature that rounds up all your change and invest in a deposit and a shared wallet tool, they've definitely earned their spot in the top list of mobile wallets in India.

**11) Mobikwik:**

Mobikwik is a Gurgaon based e-wallet payment system in India that helps its users store their money. Founded in 2009 by Bipin Singh and Upasana Taku, this digital wallet enables users to recharge, pay bills, and make third-party purchases with one tap.

**12) MomoeXpress:**

MomoeXpress, a Bangalore based digital wallet in India, claims to have the fastest checkout system. Though they're only available in Bangalore, they have a wide range of solutions they offer to residents on the city. From paying for your rickshaw ride to salons & spas, there are over 3000 outlets available at your disposal.

**13) MoneyonMobile:**

MoneyOnMobile, authorized by the Reserve Bank of India, enables users to buy goods, products, and services from registered merchants. It's a multilingual app that reaches remote areas of the country to millions of users making online payments available to a wide population.

**14) Mswipe:**

Mswipe, the first mobile point-of-sales solution in India was founded in 2012. They don't exactly offer an app, but they do provide a machine that can be attached to your mobile device to accept card payments. This may not be a digital wallet app but it does support going cashless.

**15) Ola Money:**

Ola Money, launched in 2015, is a digital wallet in India offered by Ola. While it's majorly being used to make payments for Ola cab rides, making cashless traveling a dream come true, it can also be used to buy groceries or flight tickets and much more.

*16) Oxigen:*

Oxigen, a FinTech company founded in July 2004, is one of the major providers of digital payment in India. Along with making online purchases and paying bills, you can also send gift cards to your dear ones.

*17) PayMate:*

PayMate, founded in 2006 by Ajay Adishesann, launched PayPOS in 2012, an app for **small business** owners to receive payments conveniently via debit cards and credit cards and also process electronic transactions.

*18) Paytm:*

Paytm, launched in 2010, is currently the largest mobile wallet app in India. With payments via Paytm being accepted almost everywhere, it's hard not to simply switch to it completely. From paying mobile bills to buying movie tickets, there's almost nothing you can't do with Paytm.

*19) PayUmoney:*

PayUmoney, a part of PayU India, is a free payment gateway solution for merchants to collect payments from customers via debit/credit cards or net banking, and more. They also offer SMS and email invoicing for merchants that do not have a website.

*20) State Bank Buddy:*

State Bank Buddy, a product of State Bank of India, is an online wallet in India that's available in 13 languages. Users (non SBI account holders too) can send money via Facebook, or to other bank accounts, book hotels or movie tickets and much more!