



A technology helping India move to a cashless society

Problem:

- India over dependence on cash has prevented effective authorization and formalization of transactions and aggregated corruption and flow of black money impacting economic growth.
- The masses have been in the need of simple to use cashless solutions fueled by technology specially during / post demonetization.

Solution:

- Technology based platforms like **Paytm** helped India move towards a cashless society by formalizing, authenticating and keeping track of all financial transactions.
- Digital transaction of money in India during / post demonetization improved and helped India move towards a cashless society**



Several solutions like cheques, credit/debit cards, online bank transfer and mobile wallets like amazon pay, google pay, Phone Pe, **Paytm** etc. – are now leveraged by the masses.

* **Demonetization** occurs when there is a change of national currency: The current form or forms of money is pulled from circulation and retired, to be replaced with new notes or coins.

** A **cashless society** describes an economic state whereby financial transactions are not conducted with money in the form of physical banknotes or coins, but rather through the transfer of digital information (usually an electronic representation of money) between the transacting parties.

What is **Paytm**?

Paytm is an Indian e-commerce payment system and digital wallet company. **Paytm** was founded in August 2010 and claims to have over 150 million users, making it the biggest online payments platform in the country. It is valued at \$10 billion dollars.



Paytm is available in multiple Indian languages where users use the application for

mobile recharges, utility bill payments, travel, movies / events bookings as well as in-store payments at stores, restaurants, tolls, pharmacies etc. Many education institutions have started to use **Paytm** too.

Over 7 million merchants across India use this QR code to accept payments directly into their bank account. The company also uses advertisements and paid promotional content to generate revenues.

What is **Paytm** Wallet?



Paytm wallet, is the digital account on **Paytm** where you can transfer money from your bank account or credit card to use for transactions on the platform. Once you open a **Paytm** account with just email id and Mobile number You can transfer cash to the wallet up to Rs. 10,000 in a - for non-KYC customers. This limit applies to minimum KYC *** (Rs.20,000) wallet while Full KYC (Rs.1 lakh) wallet users can transfer up to Rs. 25,000 per month.

***KYC = Know your customer, alternatively known as know your client or simply KYC, is the process of a business verifying the identity of its clients and assessing their suitability, along with the potential risks of illegal intentions towards the business relationship.

What is **Paytm** used for?

Some examples of the transactions that one can do using **Paytm** are:

- Recharge prepaid mobile phones, metro cards, DTH cable, data cards,
- Make payments for postpaid mobile phones, landline/ broadband, electricity, water and gas bills, etc.
- Book tickets for buses, trains, flights, movies, hotel rooms, etc.
- Pay for cab services like Uber and Ola.
- Food delivery services like Zomato, Swiggy and Uber Eats.
- You can buy goods on the **Paytm**'s e-commerce platform
- Make offline payments at over 8 lakh merchants
- **Paytm** also allows you to send money to other people's **Paytm** wallets or to bank accounts.



How did **Paytm** became popular ?

Paytm was launched in the year 2010. It started off as a prepaid mobile and DTH recharge platform, and later added data card, postpaid mobile and landline bill payments. Soon **Paytm** launched the “**Paytm** Wallet” and the Indian Railways and Uber added it as a payment option. That helped gain initial popularity.

In 2016, the Government of India announced the demonetization of all ₹500 and ₹1,000 banknotes. During that period paying by cash was a challenge as physical currency was not easily available due to shortage. The citizens of India tried to go cashless and this increased the usage of digital wallets such as **Paytm**. People



have been using **Paytm** ever since because of its many benefits. Now, Paytm is used to pay for almost everything and has been widely accepted by street vendors, small and large businesses.

What are the key features of **Paytm** App?

- Its mobile interface is available in 10 Indian languages, besides English.
- The **Paytm** app can be downloaded on mobile phones and is available in Android, Apple and Windows stores. The interface is very easy, convenient and user-friendly. The icons make the home screen look more attractive and are self-intuitive.
- The **Paytm** website is available to access on any device – including laptops and PC's
- Payments can be done using a QR code. Users can access their personalized QR code in the request money or the profile section. The same can be utilized while you are requesting money to your wallet.
- With the passbook, one can keep a tab on all the payments made or received in your **Paytm** wallet
- The Recent & Offers Tab takes the pain away from repeatedly having to feed in the same details. Make quicker payments with this super-cool feature.
- Using the **Paytm** mall feature, the app helps your make an informed decision about your purchase. When browsing products, simply look for the seller details on the Product description page to know where the seller is located, what his current rating is and how many people have already bought from him.

What are the benefits of using the **Paytm** application?

- It is fast for payment and transferring money
- No need to carry debit or credit card means fewer chances for being fraud
- Easily return money to the same bank
- Get Cashback on most of the store using **Paytm** wallet
- Less documentation to Upgrade **Paytm** wallet limit
- Good wallet limit for KYC customer (25k) & Non-customer (20k) both.
- Easy & automatic refund to **Paytm** wallet in case of product cancellation at partners store.
- Transfer money to the bank at any time at nominal charges (currently 2.04%)
- Good range of Offers and discounts from hundreds of merchant partners
- Users can track their spending
- Smarter than your regular wallet - Apart from organizing your finances, digital wallets enable keeping of coupons without bulking your physical wallet. And it enables many online functions you would otherwise not be able to perform, such as online purchases and currency trading.
- Easily manageable - Allows easy management of notes and coins and forms of identification by centralizing them into one place.
- No fees - Electronic payments eliminate the need to carry out banking activities through a branch. Therefore, you can save on fees such as service charges, overdraft fees and pay minimum prepaid card fees.



What are the drawbacks of using the **Paytm** application?

- High risk of Identity theft
- In case someone loses their unlocked phone, one can simply use the app and transfer the available balance to their account
- Overdependence - you will be dependent on your phone for all your transactions on the move, so you could be rendered helpless in situations where physical cash or any other payment option is necessary.
- Some people may not like the idea of typing their credit card information and passwords on the app.
- Some people may find the application and web site hard to use if they are not “tech-savvy”
- May overspend - According to behavioral finance theorists, the pain of parting with money is felt more acutely if you use physical cash instead of a your phone or any other device.
- New technology - Since digital technologies have not reached critical mass among customers, thus, digital wallets can’t yet be used everywhere for everything.
- International Restriction - It can be a great challenge for those who travel to different countries regularly, since different countries have different services and

thus different digital wallets. This of course applies to wallets with limits available assets.

- Dependent on the Devices - Digital wallets can only be used online via devices such as laptops which can be lost, become unreachable, or suffer battery related problems. Consequently, digital wallets cannot out do debit and credit cards.

What platform is most popular with **Paytm** users?

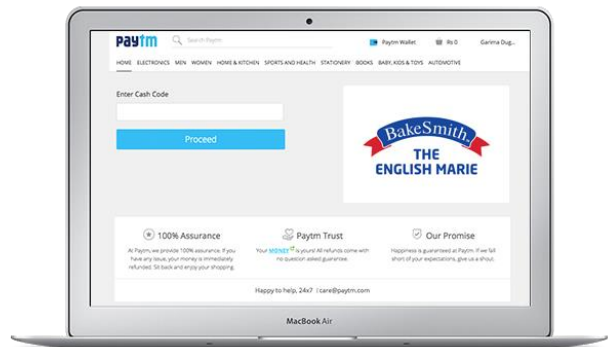
Android is the most popular with 70% user-base followed by the mobile web at 14%. 4% of users access the application by Apple devices (iOS) – a mere 1% are windows users.

What technologies were used to develop **Paytm**?

Web site development

The Web Technologies used to develop the web site include

- Server-Side Programming – Javascript
- Client-Side Programming-Javascript
- HTML5
- Character encoding-UTF 8
- Image Format-JPEG format
- Site Elements
- Embedded and Inline CSS
- Cookies expiring in hours
- Gzip Compression
- HTTP Strict Transport Security
- SSL Certificate Authority-Geo Trust
- Web Servers- Nginx , Node.js
- Web hosting Provider - Amazon

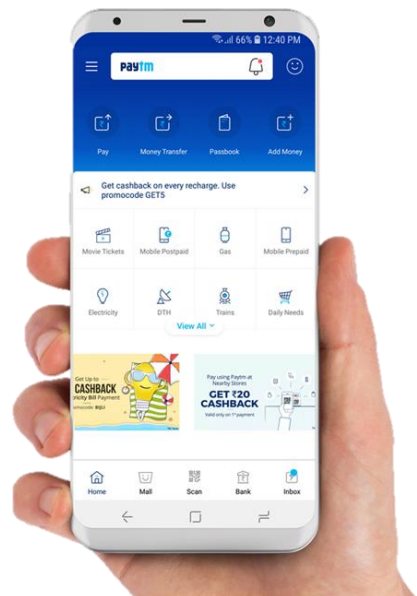


App development

Products in **Paytm**'s tech stack include - Amazon (Elastic Load Balancing, EC2, Route 53), Atlassian JIRA, GitHub, Google (Cloud Messaging, Maps), HTML5, Materialize, OpenResty, OpenSearch, Rollbar and WordPress.

The other software that **Paytm** is using internally include:

- Customer Support: ForeSee, Google Forms, Zendesk



- Marketing: AppsFlyer, Google Tag Manager, SendGrid
- Product & Design: Balsamiq, Google Fonts
- Analytics: Google Analytics, Heatmap, VWO
- HR: Lever
- Productivity: Betaout, Dropbox, Evernote, G Suite, Slack

Use of Cameras and QR codes

Cell phones have become a necessity for many people throughout the world. The ability to keep in touch with family, business associates, and access to email are only a few of the reasons for the increasing importance of cell phones. Since 2010, most mobile phones, even cheapest ones, are being sold with a camera. With the availability of cameras in portable phones, **Paytm** adds an option of the transaction of money through QR codes.



QR code (abbreviated from Quick Response Code) is the trademark for a type of matrix barcode (or two-dimensional barcode). A barcode is a machine-readable optical label that contains information about the item to which it is attached. In practice, QR codes often contain data for a locator, identifier, or tracker that points to a

website or application. A QR code uses four standardized encoding modes (numeric, alphanumeric, byte/binary, and kanji) to store data efficiently; extensions may also be used. A QR code consists of black squares arranged in a square grid on a white background, which can be read by an imaging device such as a camera and processed using Reed–Solomon error correction until the image can be appropriately interpreted. The required data is then extracted from patterns that are present in both horizontal and vertical components of the image. Use **Paytm** to scan all kinds of QR codes. Scan **Paytm** or UPI QR codes to make hassle-free cashless payments. Scan QR codes in newspapers, advertisements, brochures or retail products among others, to visit the linked website, view product information, participate in competitions and much more.

Paytm QR Code Scanner is one of the fastest and easiest QR code scanners.

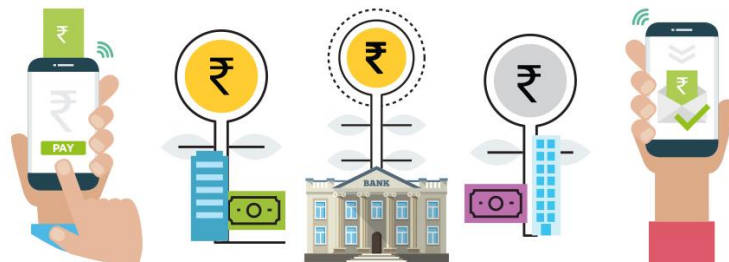
- Step 1 Open **Paytm** app
- Step 2 Tap on 'scan' to open the QR code scanner
- Step 3 Hold your phone over a QR code so that it is clearly visible within the scan area

The Benefits of **Paytm** QR Code Scanner

- No need to install different QR code scanner App
- It is reliable, lightning fast & secure

- Ubiquitous - millions of users already using **Paytm** QR code scanner successfully

Use of IMPS technology

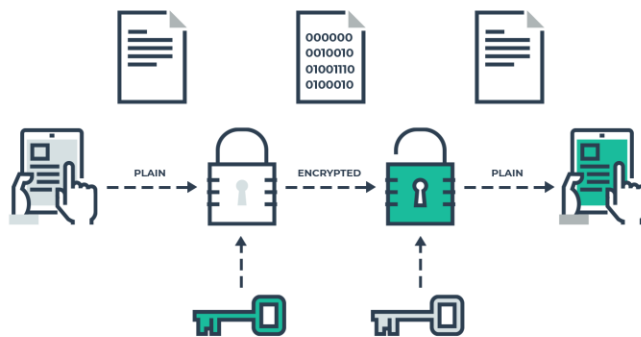


IMPS (Immediate Mobile Payment Service), which is an instant, 24x7, electronic fund transfer service through mobile phones. This is a relatively new and easy payment option started by banks that allows users to send money to another bank account or

merchant using their mobile number. To make payments using IMPS, users will need an MMID, which is issued by the bank.

Using IMPS, you can make payments for all services on **Paytm** — recharges, bill payments and tickets. For merchant payments, 23 banks are live on IMPS including ICICI, Kotak, HSBC, SBI, Yes, Axis, PNB and many more.

Use of Encryption



Encryption is the process of encoding a message or information in such a way that only authorized parties can access it and those who are not authorized cannot. Encryption does not itself prevent interference but denies the intelligible content to a would-be interceptor. In an encryption scheme, the intended information or message, referred to as plaintext, is encrypted

using an encryption algorithm – a cipher – generating cipher text that can be read only if decrypted. For technical reasons, an encryption scheme usually uses a pseudo-random encryption key generated by an algorithm. It is in principle possible to decrypt the message without possessing the key, but, for a well-designed encryption scheme, considerable computational resources and skills are required. An authorized recipient can easily decrypt the message with the key provided by the originator to recipients but not to unauthorized users. Digital wallets authenticate your transactions with encryption, making the payment process safe and secure.