

Digital Business

Topic : Digital Payments

Learning Objectives

- ▶ Describe the different types of payments in businesses and services.
- ▶ Describe how payments have evolved and how Digital Payments has enabled the transformation of businesses and services.

Learning Objectives

- ▶ Introduction to Payment
- ▶ Traditional Payment Methods
- ▶ Digital Payment Methods
- ▶ Trends in Digital Payments
- ▶ Benefits of Digital Payments in Businesses & Services

What is Payment?

- ▶ A **payment** is the **trade of value** from one party (such as a person or company) to another for goods, or services, or to fulfil a legal obligation.
- ▶ Payment can take a variety of forms - barter, use of money, cheque, debit or credit, bank transfers, stock issues or the **transfer of anything of value or benefit** to the parties.



Types of Payment

Variety of Payments Use Cases

		Payment destination		
		Person (P/C)	Merchant / Business (M/B)	Government (G)
Payment Initiation	Person (P/C)	<ul style="list-style-type: none"> • Remittances <ul style="list-style-type: none"> — Domestic—migrant labor remittances — International • Seamless P2P transfers <ul style="list-style-type: none"> — Friends, family, etc. • Digital micro payments <ul style="list-style-type: none"> — Payments for services 	<p>Digital payment instrument for</p> <ul style="list-style-type: none"> • Online merchant payments <ul style="list-style-type: none"> — E-comm, Utility bills, etc. • Proximity payments <ul style="list-style-type: none"> — In-store payments — Cash on delivery • Travel and transport 	<ul style="list-style-type: none"> • Road toll • Tax • Payments for applications • Payments to semi government organizations such as educational institutions
	Merchant/ Bus (M/B)	<ul style="list-style-type: none"> • Salary payments for daily contract workers • Reimbursements • Refund payments • Dividends 	<ul style="list-style-type: none"> • Digital supply chain payments (Small business to business) <ul style="list-style-type: none"> — Retailer to distributor — Dealer payments etc. • Vendor payments 	<ul style="list-style-type: none"> • Taxes • Excise duty payments • Toll payments
	Govt. (G)	<ul style="list-style-type: none"> • DBT (Subsidy transfers) • Welfare scheme money transfers e.g. NREGA • Government employee salary 	<ul style="list-style-type: none"> • Subsidies • Tax repayments 	<ul style="list-style-type: none"> • Central government to state government transfers • Budget allocation payments to government agencies

Source: BCG, Global Digital Payments 2020, July 2016

Traditional Payment Methods

1. Barter
2. Money
3. Cheque

Barter Trade

- ▶ Exchange of one good or service for another without the use of money/cash
- ▶ Use in situations where money is short in supply or when the value of money devalues quickly (e.g. hyperinflation)
- ▶ Problems:
 - ▶ Lack of double-coincidence of wants
 - ▶ Large number of intermediate transactions
 - ▶ No common measure of value
 - ▶ Indivisibility of commodities
 - ▶ Difficulty as store of value
 - ▶ Problem with differed payment



Barter Trade



LES TITRES

BUSINESS
AFRICA

TOGO: BARTER REMPLACES CASH AT THE MARKET

Source: <https://youtu.be/qoQDVGCikdc>

Problems of Barter & Evolution of Money



Source: <https://youtu.be/82OsCSdOno8>

Money

- ▶ A medium of exchange, store of value & unit of account.
- ▶ **Money is valuable merely because everyone knows everyone else will accept it as a form of payment**
- ▶ Types of Money:
 - I. **Commodity Money** – use of scarce natural resources, e.g. gold, precious stones, shells, spices, etc.
 2. **Fiat Money (Cash)** - the government declares fiat money, e.g. coins & notes, to be legal tender, which requires all people and firms within the country to accept it as a means of payment.



Money

► Types of Money:

3. **Fiduciary Money** – Issuer of fiduciary money, e.g. bank notes, promissory notes, paper certificates, etc. **promises to exchange** it back for a certain amount of commodity/ fiat money if requested by the bearer. Its value depends on the reputation of the issuer.



Trivia: Zimbabwe Dollar

1. How much do you think this is worth?

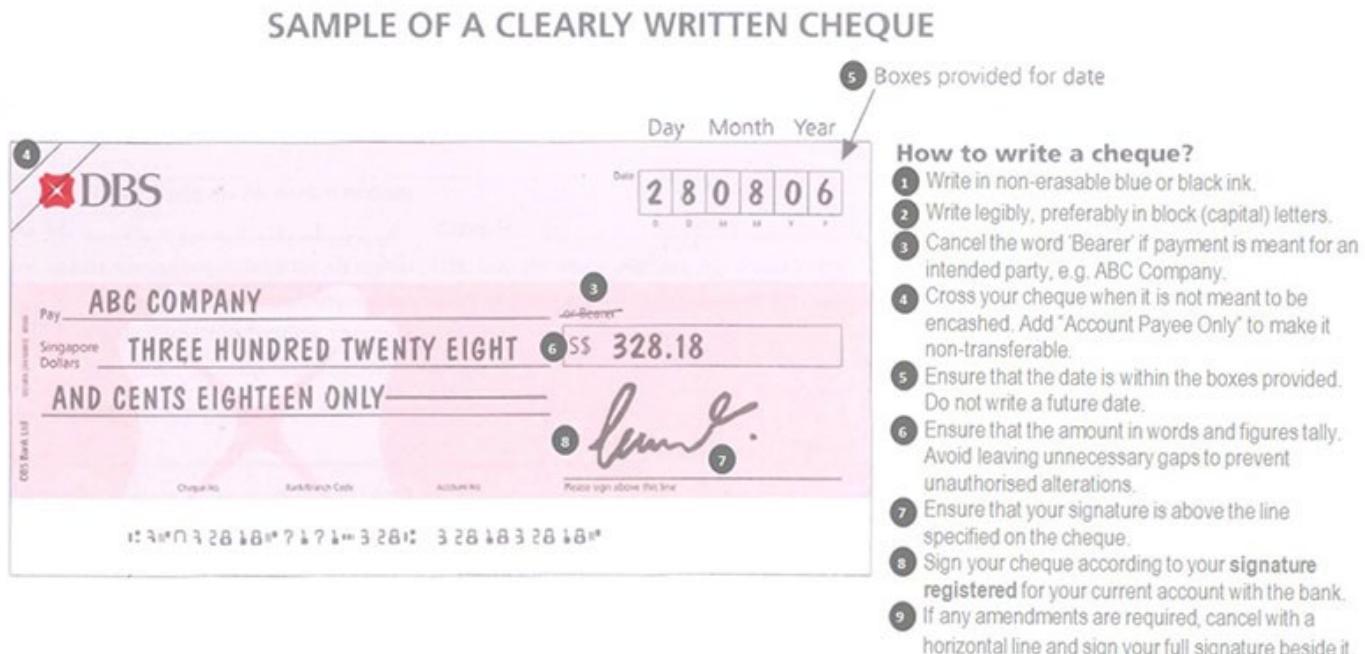


2. How much do you think is needed to buy a loaf of bread in Zimbabwe using Zimbabwe dollars?

Answers: <https://www.wsj.com/video/zimbabwes-100-trillion-dollar-note-gains-in-value/E32B371E-2016-4BAC-9FDA-5CBE5DB7FE7C.html>

Cheque

- ▶ A “document” that orders a bank to pay a specific amount of money from a person's account to the person in whose name the cheque has been issued.



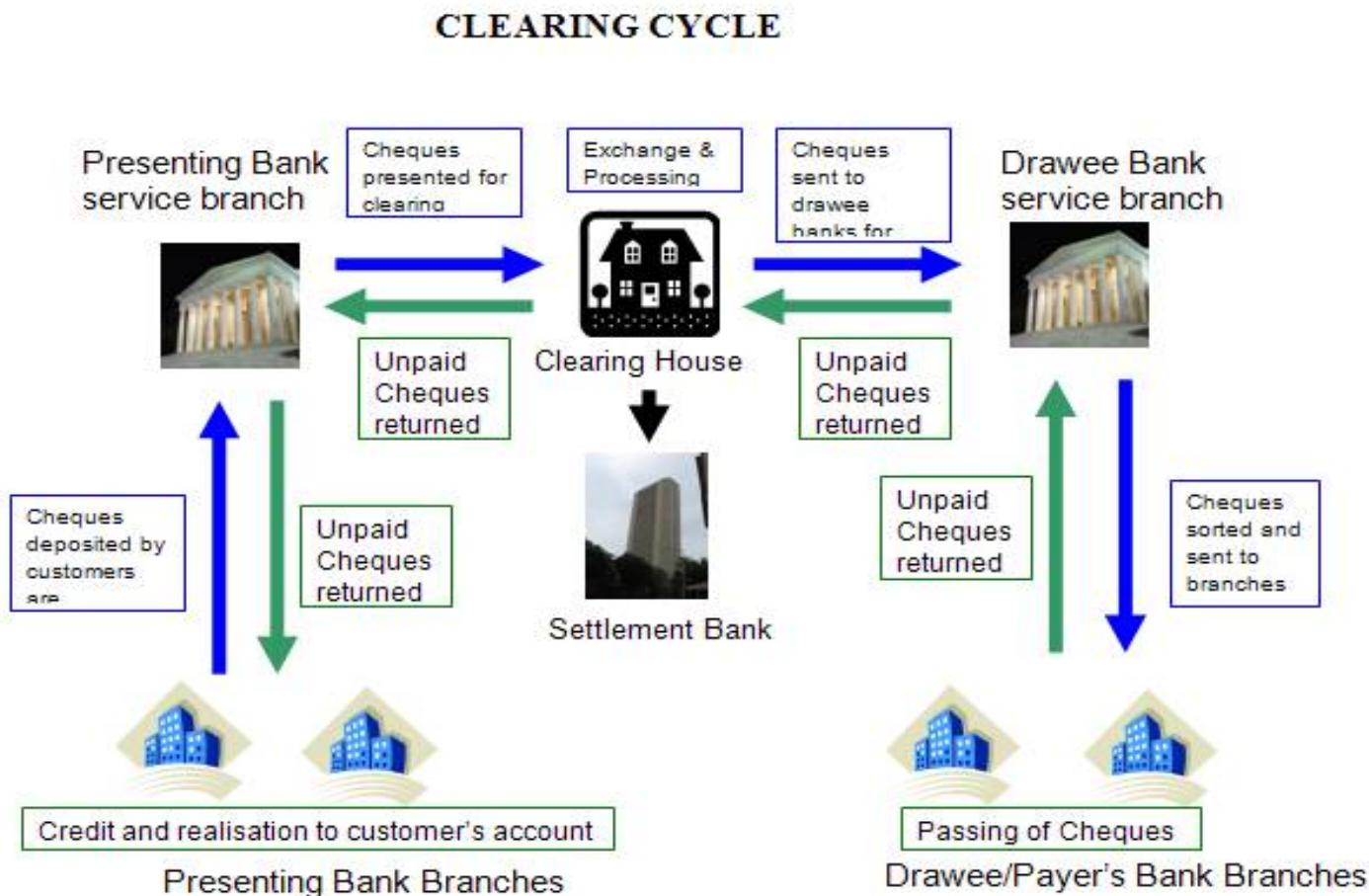
Cheque Clearing Process

Bank B presents the cheque physically to Drawee Bank through a clearing house.



Source: <https://youtu.be/YKMUFLnzgCk>

Cheque Clearing Process



In Singapore, the Singapore Automated Clearing House (ACH) operates the Singapore Dollar Cheque Clearing System (SDCCS).

Rise of Digital Payments

Ongoing technology revolution



The penetration of smartphones in the global population and its evolution is enabling new payment capabilities

Entry of non traditional players



Tech giants, telecom companies, retailers and startups have entered the payment space, and dominated in a few categories.

“Enabling” regulations



Regulatory authorities across the globe are encouraging innovation in the payments space.

Evolving customer expectations



The entry of non traditional players in the payments space has exposed the customers to a superior end-to-end customers experience.

Rise of Digital Payments

Growth of eCommerce



2010 – 2015 CAGR¹:

16%

2016²:

US\$1.9 tn



2020²:

US\$3.9 tn

Increasing Smartphone Adoption



2008 – 2014 CAGR³:

56%

2016³:

3.8 bn (51%)



2020³:

5.7 bn (65%)

Emergence of the API Economy⁴



The growth of APIs in the last 10 years has helped to facilitate and integrate payment processes, allowing online payment providers, like Adyen and Stripe, to disrupt traditional players in the industry and accelerate change.

Notes:

1. Proprietary research

2. eMarketer, Global eCommerce Platforms 2017, June 2017

3. GSMA, Global Mobile Economy Report 2017

4. BNY Mellon, Innovation in Payments

Rise of Digital Payments

2000s



In the absence of key drivers, PayPal is one of the only few payments startups that has survived and thrived since the dot.com bubble days

2017



High Usage of Smartphone



API economy



Digital Payment Methods

1. Electronic Local Funds Transfers (GIRO/ FAST/ PayNow)
2. Stored Value Facilities
3. Debit/ Credit Cards
4. Online Payments
5. Digital Wallets & Mobile Payments
6. Digital Currencies/ Cryptocurrencies
7. Social Media Payments



Electronic Local Funds Transfer: GIRO

- ▶ **General Interbank Recurring Order (GIRO)** is an automated electronic payment service which is especially useful for payments which are **regular/ recurrent** in nature, **low-value** and of a **fixed** quantum.
- ▶ Customers must ensure that the designated bank account has sufficient funds before the deduction due date.
- ▶ Two kinds of fund transfer:
 - I. Credit Transfers
 - ▶ Payers instruct banks to debit their accounts to transfer funds to payees
 - ▶ Could have standing order for transfers on a regular specific date, specific receiver and for a specific amount.
 - ▶ Payroll crediting is the most common transfer
 - ▶ No maximum limit

Electronic Local Funds Transfer: GIRO

2. Direct Debits

- ▶ Arrangement made by bank customers with a billing organization (BO) to debit a designated bank account to pay regular bills
- ▶ Upper limit of SGD 25 million per debit
- ▶ Need a signed direct debit authorization (DDA) form, which authorizes their bank to allow the BO to initiate a regular collection instruction to deduct the required amount from a designated bank account..
- ▶ To facilitate faster processing of DDA forms, some banks tied up with their Bos to offer online DDA applications
- ▶ Other organizations allow DDA applications to be processed via self-service kiosks such as AXS stations.

Electronic Local Funds Transfer: FAST

- ▶ **Fast And Secure Transfers (FAST)** is a new electronic funds transfer service that enables customers of the *participating* banks to transfer Singapore Dollar funds from one bank to another in Singapore almost **instantly, 24/7**

Payment Type	Receipt of Payments
FAST	Almost Immediate, 24x7 basis
Cheque	Up to 2 business days
eGIRO	Up to 3 business days

- ▶ FAST is useful for **one-off / ad-hoc** payments, up to a limit of S\$200K
- ▶ Need to know the recipient's **bank account number**

Electronic Local Funds Transfer: PayNow

- ▶ **PayNow** is a new service that enables customers of *participating* banks to send and receive Singapore Dollar funds from one bank to another, using just their **Mobile Number and/or Singapore NRIC/FIN and/or UEN (for businesses)** almost **instantly, 24/7**
- ▶ PayNow rides on the FAST platform, however, instead of using bank account number, the recipient will have to link his/her mobile number and/or Singapore NRIC/FIN and/or company's UEN to his/her bank account number so that his/her can receive the funds

Electronic Local Funds Transfer: PayNow

► PayNow for Businesses

Then, you're able to...



Receive with **PAY NOW**

- 1 Publish your UEN or QR code on your website, other online channels, or your invoices
- 2 Be notified of inward credits – all PayNow transactions will be displayed on IDEAL and your account statements

Useful for

- Merchant Payments
- Bill Payments
- Invoice Payments



Pay with **PAY NOW**

- 1 Pay other businesses or individuals by using PayNow registered proxies, i.e. UEN or NRIC / mobile number
- 2 Receive notifications of successful transactions

Useful for

- Business / Invoice Payments
- Claims / Ad hoc Payments

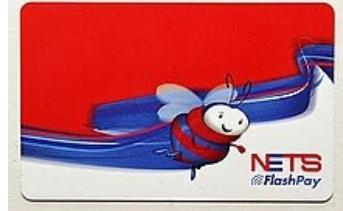


Stored Value Facilities

- ▶ In Singapore, **electronic money** is also commonly known as a **Stored Value Facility (SVF)**.
- ▶ The SVF has to be top-up/ funded using cash or other payment methods. The SVF's value is deducted when used to make payment.
- ▶ SVFs can be classified as:
 - ▶ **Single-Purpose** Stored Value Facilities (SPSVFs) - used to pay for goods and services offered by the issuer only (e.g. prepaid phone cards)
 - ▶ **Multi-Purpose** Stored Value Facilities (MPSVFs) - allow customers to pay for goods and services offered by other merchants or organisations
- ▶ Singapore's three widely accepted MPSVF are:
 1. NETS CashCard
 2. NETS FlashPay
 3. EZ-Link card
- ▶ Any SVF with total outstanding stored values below \$30 million and all SPSVFs do not require MAS' approval. Any entity can issue such SVF.

Stored Value Facilities

- ▶ NETS CashCard/ FlashPay
 - ▶ Issued by NETS (3 domestic banks)
 - ▶ Primarily used to pay ERP toll charges, carpark charges, retail, etc.
 - ▶ Contact-based/ Contactless
 - ▶ FlashPay is CEPAS compliant
- ▶ EZ-Link
 - ▶ Issued by EZ-Link
 - ▶ Primarily used for pay for public transport, etc.
 - ▶ Contactless
 - ▶ CEPAS Compliant
- ▶ Contactless ePurse Application (**CEPAS**) - Singapore's e-money **standards/ specifications**.
 - ▶ CEPAS allows interoperability of MPSVFs from different card issuers
 - ▶ Can use a single card seamlessly for making transit, road toll and retail payments, etc.



Debit/ Credit Cards

- ▶ Banks in Singapore issue Debit Cards & Credit Cards
- ▶ Debit Cards
 - ▶ Directly linked up to the cardholder's bank account
 - ▶ Amount of purchases and cash withdrawal are **deducted** from the cardholder's bank account **immediately**
 - ▶ Mainly used for cashless payments & to withdraw cash at ATMs



- ▶ Credit Cards
 - ▶ Allow customers to pay for the goods and services by **credit** (i.e., need not have the money in the bank)
 - ▶ Cardholders are **billed monthly** for the purchase of goods and services
 - ▶ Incur **interest charges** if the amount is not fully paid and **late fee** if not the amount is not paid on time



Debit/ Credit Cards

- ▶ Debit/ Credit Cards carry the **Mastercard** or **VISA** logo



- ▶ Mastercard/VISA are companies that provides the **technology and the network to process the transactions** when a customer spends using a credit/debit card.
 - ▶ Checks with the card issuer (i.e. issuing bank) if the transaction should be accepted/ declined
 - ▶ Confirms to the retailer/ merchant that the payment can be made (i.e. customer has sufficient funds)
 - ▶ Process the payment between the card issuer (i.e. issuing bank) and the retailer/ merchant
- ▶ Mastercard/VISA charges the merchants a fee for using their payment processing services.

Debit/ Credit Card Payment Processing



Step 1: The customer pays with Card

The customer purchases goods/services from a merchant.

Step 2: The payment is authenticated

The merchant **point-of-sale system** captures the customer's account information and securely sends it to the merchant's acquirer/ bank (e.g. UOB).

Step 3: The transaction is submitted

The merchant acquirer asks Mastercard/VISA to get an authorization from the customer's issuing bank (e.g. DBS).

Step 4: Authorization is requested

Mastercard/VISA submits the transaction to the customer's issuing bank (e.g. DBS) for authorization.

Step 5: Authorization response

The customer's issuing bank (e.g. DBS) authorizes the transaction and routes the response back to the merchant.

Step 6: Merchant payment

The customer's issuing bank (e.g. DBS) routes the payment to the merchant's acquirer/ bank (e.g. UOB) who deposits the payment into the merchant's account.

History of Credit Cards



Source: <https://youtu.be/iR5QYkdiaq4>

Online Payments

- ▶ Refers to payments made via online websites / **e-commerce websites**
- ▶ Singapore's e-commerce sales predicted to reach S\$10b in 2020. The top 5 e-commerce merchants are as follow:

The Map of E-commerce in Singapore

The Map of E-Commerce ranks Singapore's top 50 e-commerce players based on their average quarterly traffic, mobile application ranking, social media followers and number of staff. Data was collected in January 2018

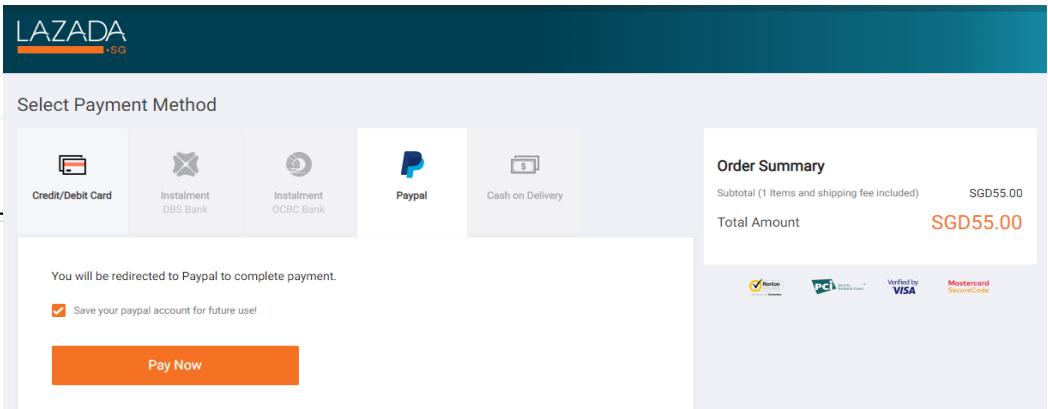


Filter by		Business Model	Store Type	Store Origin	Select Data Per Quarter			
		Verified by Merchant	IEMA Award Winners	Q1-2018				
Merchant	Monthly Visits	AppStore Rank	PlayStore Rank	Twitter	Instagram	Facebook	Number of Employees	
1 Qoo10	13,474,400	#3	#3	3,700	4,900	381,900	145	
2 Lazada	10,006,600	#1	#1	1,800	11,300	22,647,300	580	
3 eBay	2,149,600	#7	#7	100	71	21,800	80	
4 EZBuy	1,826,400	#4	#4	1,200	24,800	258,900	53	
5 Zalora	1,558,800	#5	#5	7,000	51,500	7,187,900	394	

More on e-commerce in Singapore: <https://www.eshopworld.com/blog/singapore-e-commerce-insights/>

Online Payments

- ▶ Most e-commerce websites in Singapore offer **Credit/Debit Cards (Mastercard & Visa), PayPal, bank transfer, cash-on-delivery, etc.** payment methods



Select your payment mode and click on 'Order Now' to place an order completely.

Payment Information *If you have some problem, please contact [SOS center](#)

- MasterCard and VISA 
- JCB Card 
- PayPal
- PayLah! 
- E-Nets (Real time Bank Transfer) * Please Turn Off Pop-up Blocker 
- AXS
- Cash payment at Convenience Store (7-Eleven only) 
- Bill Payment
- Direct cash deposit
- Qmoney [Net amount: \$S0.62] 

< Note >
- The net amount in Money(S\$) should be more than payable amount.
- It may take up to 10 minutes to confirm your payment.

Currently, There is 10 types of payment methods in SG Qoo10.

Section	Payment methods
Credit Card	MasterCard and VISA
	JCB Credit Card
Paypal	Paypal payment
PayLah!	DBS PayLah payment
Cash transfer Through PG	E-nets, AXS, 7-Eleven, Bill Payment
Cash Direct Into Qoo10 Account	Via ATM or ibanking, transfer into Qoo10 bank account
Pay with Qmoney	Using Qaccount money to pay

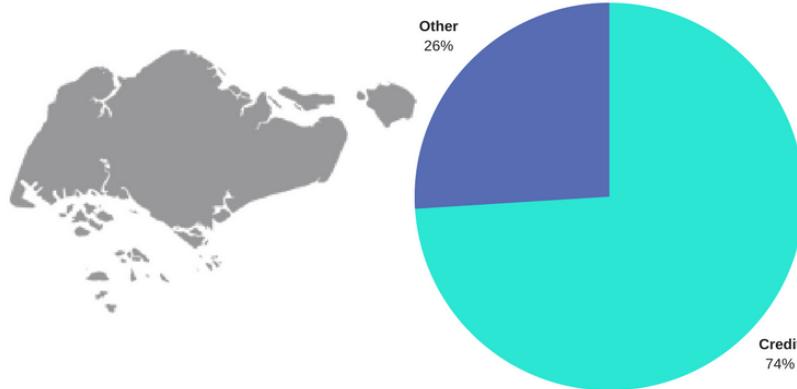
Online Payments

- In Singapore, **Credit Cards** are the preferred method of online payment at 74%

PREFERRED ONLINE PAYMENT METHODS IN SINGAPORE

Others:

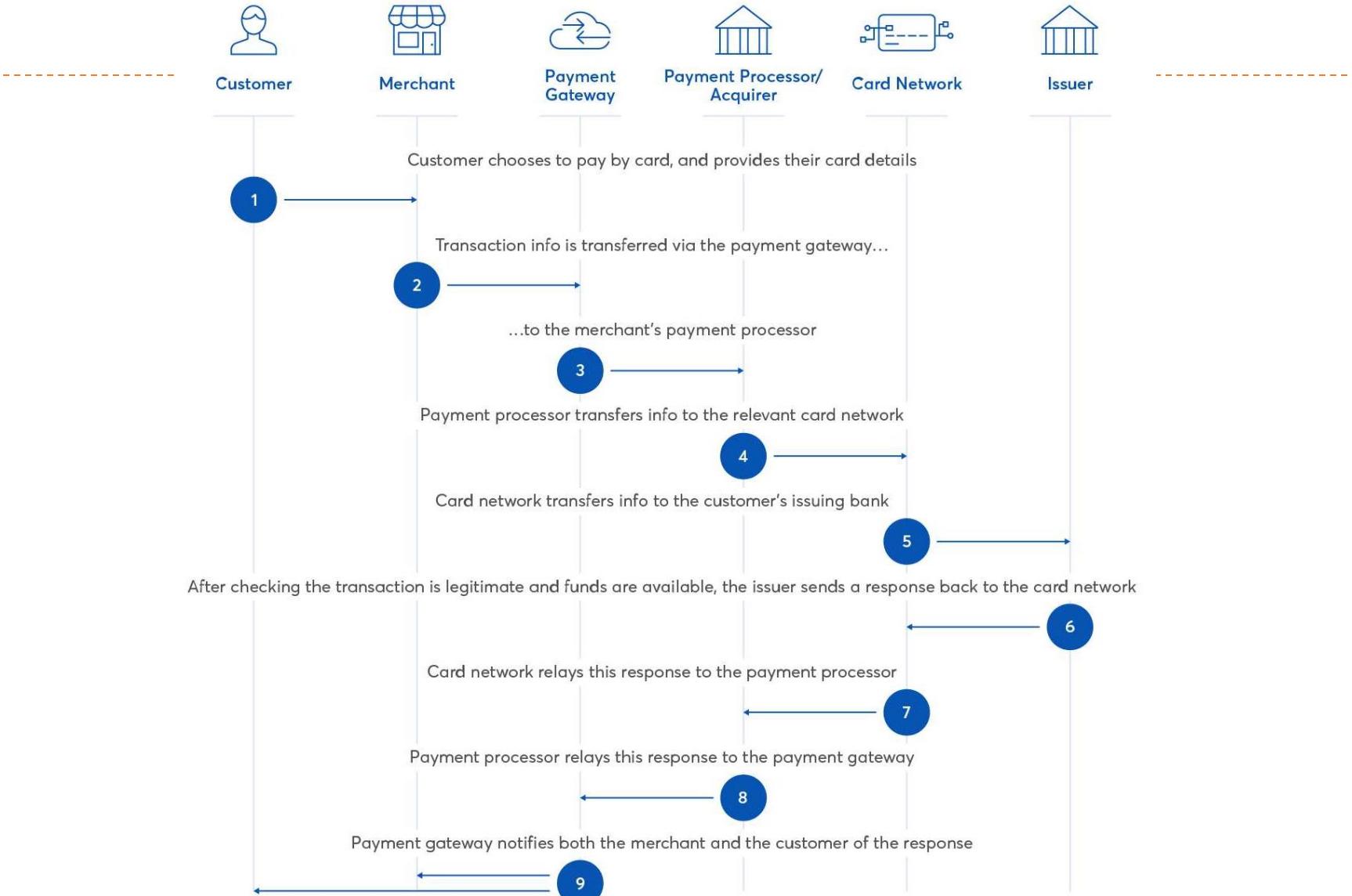
- PayPal
- eNETS
- Direct Debit
- Bank Transfer
- Cash-on-Delivery



Source: The Paypers, Preferred Payment Methods - Singapore

eshopworld

Online Credit/ Debit Card Payment Processing



Online Payment Gateways

- ▶ Primarily used for e-commerce or card not present transactions. In other words, it is essentially a point-of-sale (POS) terminal for online transactions.
- ▶ There are 100+ Payment Gateway Service Providers (PSP). They may operate in different countries, integrate with different e-commerce websites, have different charges/cost models & provide different value-added services (e.g. fraud detection, wealth management, etc.)
- ▶ Types of PSPs:
 - I. Self-hosted/ API-hosted/ Integrated Payment Gateways
 - ▶ Customer enters his/her card details **within** the e-commerce site's checkout page. The card data is then encrypted and sent to the PSP, or processed using the API (Application Programming Interface) that the PSP provides.
 - ▶ Better customer experience as the entire transaction takes place in one place (i.e. the merchant's e-commerce site). However, the merchant has to be responsible in meeting the security compliance of capturing & storing the customer's card details.
 - ▶ E.g. Stripe, MasterCard Internet Gateway Service (MiGS), Cybersource (by VISA)

Online Payment Gateways

▶ Types of PSPs:

2. Hosted Payment Gateways

- ▶ **Redirects** customers away from the e-commerce site's checkout page to the PSP page. Customer fills in his/her card details in the PSP page, and after paying, is redirected back to the e-commerce site to complete the checkout process
- ▶ Easy to set up and the payment gateway will be responsible in meeting all compliance methods and data security required. However, the merchant won't be able to control the whole user experience.
- ▶ E.g. PayPal, eNETS, SmoovPay

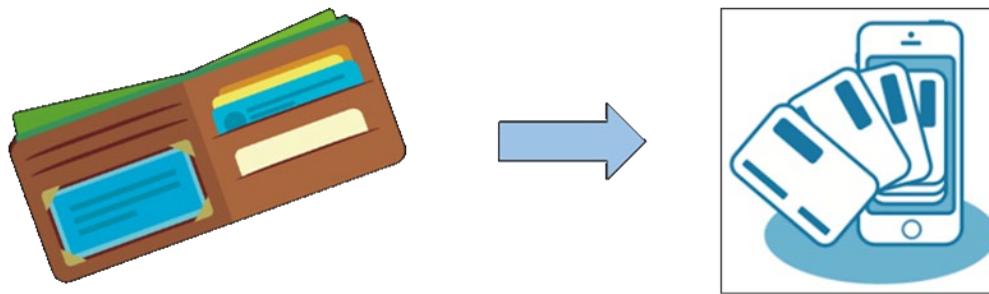


PayPal

- ▶ Refer to next Topic 10.1 Payments 101 and 10.2 PayPal Solution

Digital Wallets & Mobile Payments

- ▶ A **Digital Wallet** is an **application** that enables customers to store their identity details, electronic money, credit/debit/ATM cards details, loyalty reward cards details, merchants' coupons, etc. **on a mobile phone** or other device



- ▶ Digital Wallet allows customers to make payment using their mobile phones (i.e. Mobile Payments) via NFC or by scanning a QR code.

Types of Digital Wallets

Closed Loop

One that a company issues to its consumers for **in-house goods and services only**.

Benefits:

- Allow merchants to capture **big data**
- **Lower merchant payment processing cost**
- Increase in **customer loyalty**

Disadvantage:

- **Difficulty in scaling**
- **Inconvenience** of having multiple wallet apps
- **Systems integration** required



Semi-closed Loop

Used for goods and services, including financial services, at **select merchant locations**.

Benefits:

- Users without a bank account or credit card are able to sign up for an account
- Accepted at a **wider range of merchants** compared to closed loop wallets

Disadvantage:

- **Threatens** merchants' loyalty programs
- Merchants would have a **lack of control over customer data**



Open Loop

Allow users to **pay at different locations** from one centralized digital wallet.

Benefits:

- Opportunity to **scale rapidly** as it brings convenience to customers
- **Accepted** at virtually **any merchant** that accepts NFC payments etc.

Disadvantage:

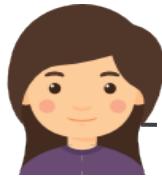
- **Threatens** merchants' loyalty programs
- Merchants would have a **lack of control over customer data**



Note: Examples apply to Singapore only

Types of Digital Wallets: Semi-Closed Loop vs Open Loop

Semi-closed loop payment



Jane uses Alipay to pay for her goods.



Shop A



Alipay is accepted at Shop A

Shop B



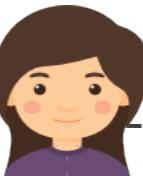
Alipay is accepted at Shop B

Shop C

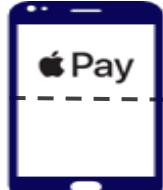


Alipay is not accepted at Shop C

Open loop payment



Jane uses Applepay to pay for her goods.



Shop A



Paywave is accepted at Shop A; hence Applepay is accepted.

Shop B



Paywave is accepted at Shop B; hence Applepay is accepted.

Shop C



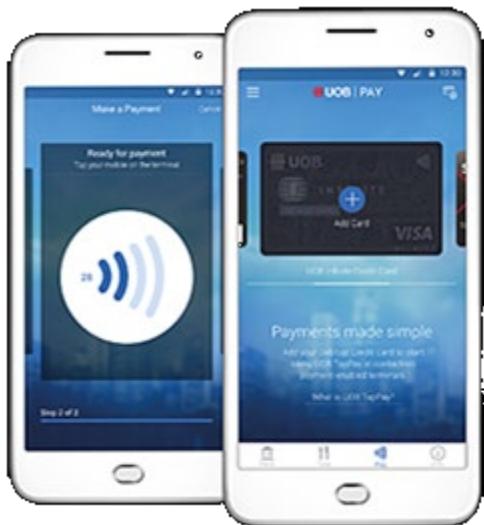
Paywave is accepted at Shop C; hence Applepay is accepted.

Types of Digital Wallets

- ▶ **Digital Wallets generally work in these 4 ways:**
 1. Digital Wallets linked to Credit/Debit Card
 2. Digital Wallets linked to ATM Card/ Bank Account
 3. Digital Wallets with Stored Value
 4. Others

Digital Wallets linked to Credit/Debit Card

- ▶ The credit/debit card details are stored in the mobile app
- ▶ **Replaces the physical credit/debit card.** The mobile phone now serves as the credit/debit card.

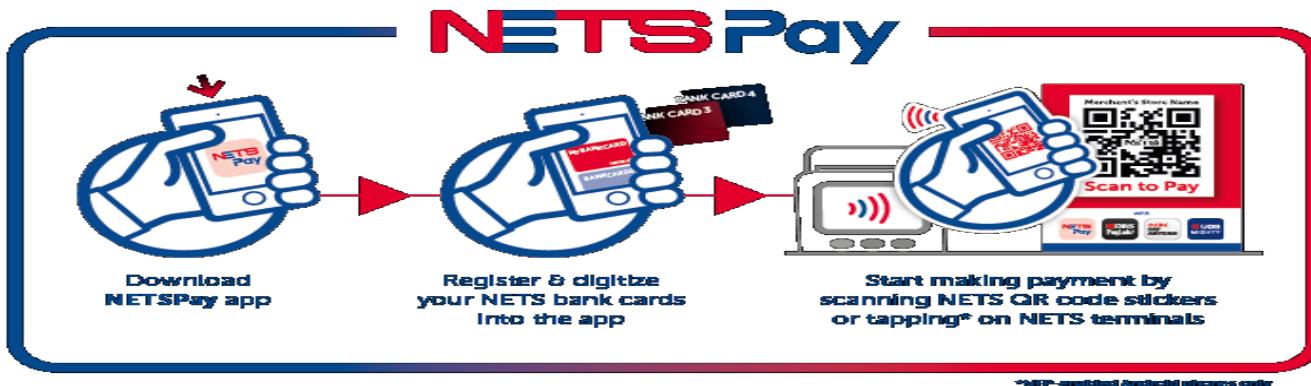


Digital Wallets linked to Credit/Debit Card

	Apple Pay	Google Pay	Samsung Pay	UOB Mighty
Who Can Use It	Anyone with MasterCard/VISA credit/debit card from participating banks such as DBS/POSB,/Standard Chartered/ Citi/ etc & American Express	Anyone with MasterCard/VISA credit/debit card from participating banks such as DBS/POSB,/Standard Chartered/ Citi/ etc & American Express	Anyone with MasterCard/VISA credit/debit card from participating banks such as DBS/POSB,/Standard Chartered/ Citi/ etc & American Express	UOB customers with UOB credit cards
What You Need	<ul style="list-style-type: none">• Apple devices• Apple Pay App	<ul style="list-style-type: none">• Android devices• Google Pay App	<ul style="list-style-type: none">• Samsung devices• Samsung Pay App	<ul style="list-style-type: none">• Android/Apple devices• UOB Mighty App
Where Can You Use It	<ul style="list-style-type: none">• Stores with NFC terminals & MasterCard/VISA/ American Express logo• Apps/website running on Apple devices	Stores with NFC terminals & MasterCard/VISA/ American Express logo	Stores with NFC terminals & MasterCard/VISA/ American Express logo	Stores with NFC terminals & MasterCard/VISA/ American Express logo

Digital Wallets linked to ATM Card/ Bank Account

- ▶ The ATM card details or bank account number is stored in the mobile app
- ▶ **Replaces the physical ATM card.** The mobile phone now serves as the ATM card
- ▶ Payment is immediately debited from the customer's bank account

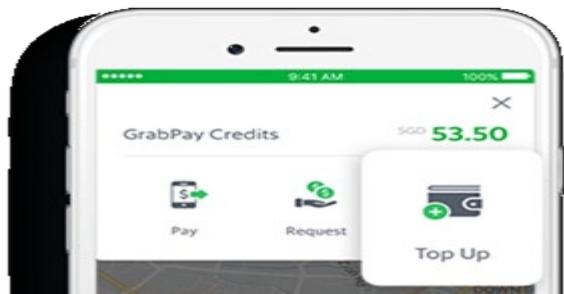


Digital Wallets linked to ATM Card/ Bank Account

	NETSPay	UOB Mighty	OCBC Pay Anyone
Who Can Use It	All NETS cardholders with ATM cards linked to their savings/current accounts	UOB customers with UOB savings/current accounts	OCBC customers with OCBC savings/current accounts
What You Need	<ul style="list-style-type: none">• Android/Apple devices• NETSPay App	<ul style="list-style-type: none">• Android/Apple devices• UOB Mighty App	<ul style="list-style-type: none">• Android/Apple devices• OCBC Pay Anyone App
Where Can You Use It	<ul style="list-style-type: none">• All NETS acceptance points with NFC terminals or NETS QR code	Stores with UOB Mighty logo or NETS QR code	Stores with OCBC Pay Anyone logo or NETS QR code

Digital Wallets with Stored Value

- ▶ **Replaces the physical Stored Value Facility (SVF) cards.**
Works the same as a SVF. However, instead of using a physical card to store the electronic money, the electronic money is stored in an application on the customer's mobile phone
- ▶ The Digital Wallet has to be **top-up/ funded** using **cash, credit/debit card, bank transfer**, etc. The Digital Wallet's value is then deducted when used to make payment



Digital Wallets with Stored Value

	DBS PayLah!	Singtel Dash	GrabPay	Starbucks
Who Can Use It	<ul style="list-style-type: none"> Anyone, including non-DBS/POSB customers Has SG registered mobile number 	<ul style="list-style-type: none"> Anyone > 16 yrs old Has SG registered mobile number 	Anyone	Anyone
What You Need	<ul style="list-style-type: none"> Android/Apple devices DBS PayLah! App 	<ul style="list-style-type: none"> Android/Apple devices Singtel Dash App 	<ul style="list-style-type: none"> Android/Apple devices GrabPay App 	<ul style="list-style-type: none"> Android/Apple devices Starbucks App
Top-up Methods	Bank Transfer	Singtel Bill (for Singtel postpaid mobile subscribers), Cash, Bank Transfer, Credit/Debit card	Cash, Bank Transfer, Credit/Debit card, PayPal	Starbucks outlets
Where Can You Use It	Stores with PayLah! logo or NETS QR code	Stores with Singtel Dash logo	Stores with GrabPay logo	Starbucks outlets
Rewards	Discounts, Cashback	Discounts, Cashback	GrabRewards points, Discounts, Cashback	Starbucks points

The future of mobile wallets lies beyond payments



Other Digital Wallets

- ▶ Primarily used to **generate new/ return customers for merchants by providing rewards, discounts, cashback, etc.**
- ▶ Support various payment options

Introducing *fave* PAY

MYFAVE.COM/PAY

MOBILE PAYMENT

No more swiping cards or counting cash
Quick and easy way to pay with your smartphone at your favourite restaurants and cafés

CASHBACK REWARD

Get rewarded every time you frequent your favourite place
Get up to 20% instant cashback to use on your next visit to your favourite places

Other Digital Wallets

		GrabPay	FavePay
Who Can Use It	Anyone	Anyone	Anyone
What You Need	<ul style="list-style-type: none">• Android/Apple devices• GrabPay App	<ul style="list-style-type: none">• Android/Apple devices• FavePay App	
Payment Methods	Cash, Bank Transfer, Credit/Debit card, PayPal		Credit/Debit card, GrabPay, Alipay
Where Can You Use It	Stores with GrabPay logo		Stores with Favepay logo
Rewards	GrabRewards points, Discounts, Cashback		Discounts, Cashback

SGQR code

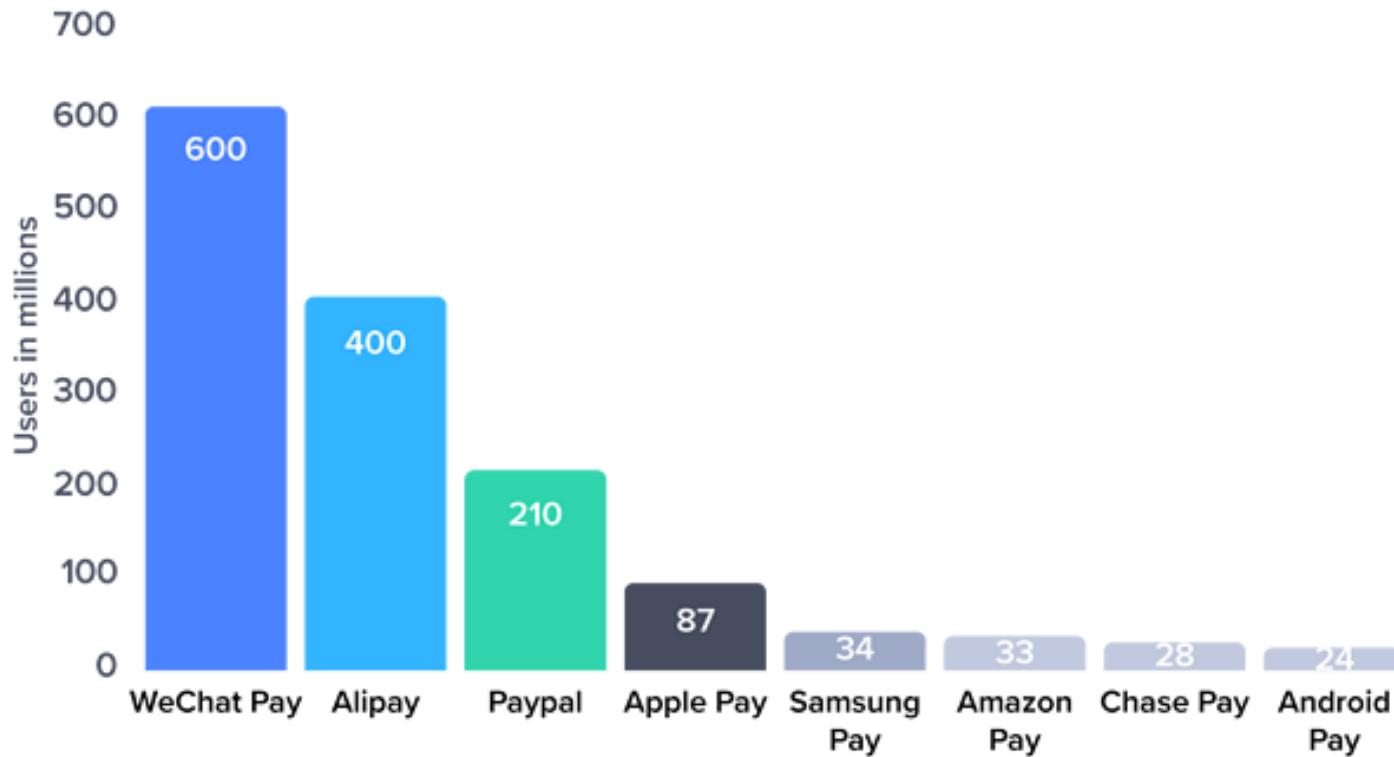
- ▶ SGQR is a single QR code that is compatible with various digital wallets.
- ▶ Merchants only need to **display one single QR code** as opposed to having a dozen individualized QR codes at their payment counter
- ▶ Customers can scan the SGQR code using any of their preferred digital wallet app listed below the QR code



Read More: <https://www.channelnewsasia.com/news/singapore/sgqr-qr-code-cashless-payment-singapore-rolls-out-unified-10727568>

Leading Mobile Payment Platform Worldwide

Number of users of leading mobile payment platforms worldwide (as of August 2017):



Cryptocurrencies

- ▶ Digital Money that is created & stored electronically in the **blockchain**
- ▶ Not owned by any government or central bank – no foreign currencies exchange

What is Cryptocurrency?

 Blockgeeks



Cryptocurrency is a digital money, created from code.



Free of all governmental oversight, The cryptocurrency economy is monitored by a peer-to-peer internet protocol .



Cryptocurrency is an encrypted string of data or a hash, encoded to signify one unit of currency

Examples of Cryptocurrency



Bitcoin Market Cap
\$11,322,347,786



Ethereum Market Cap
\$928,068,434



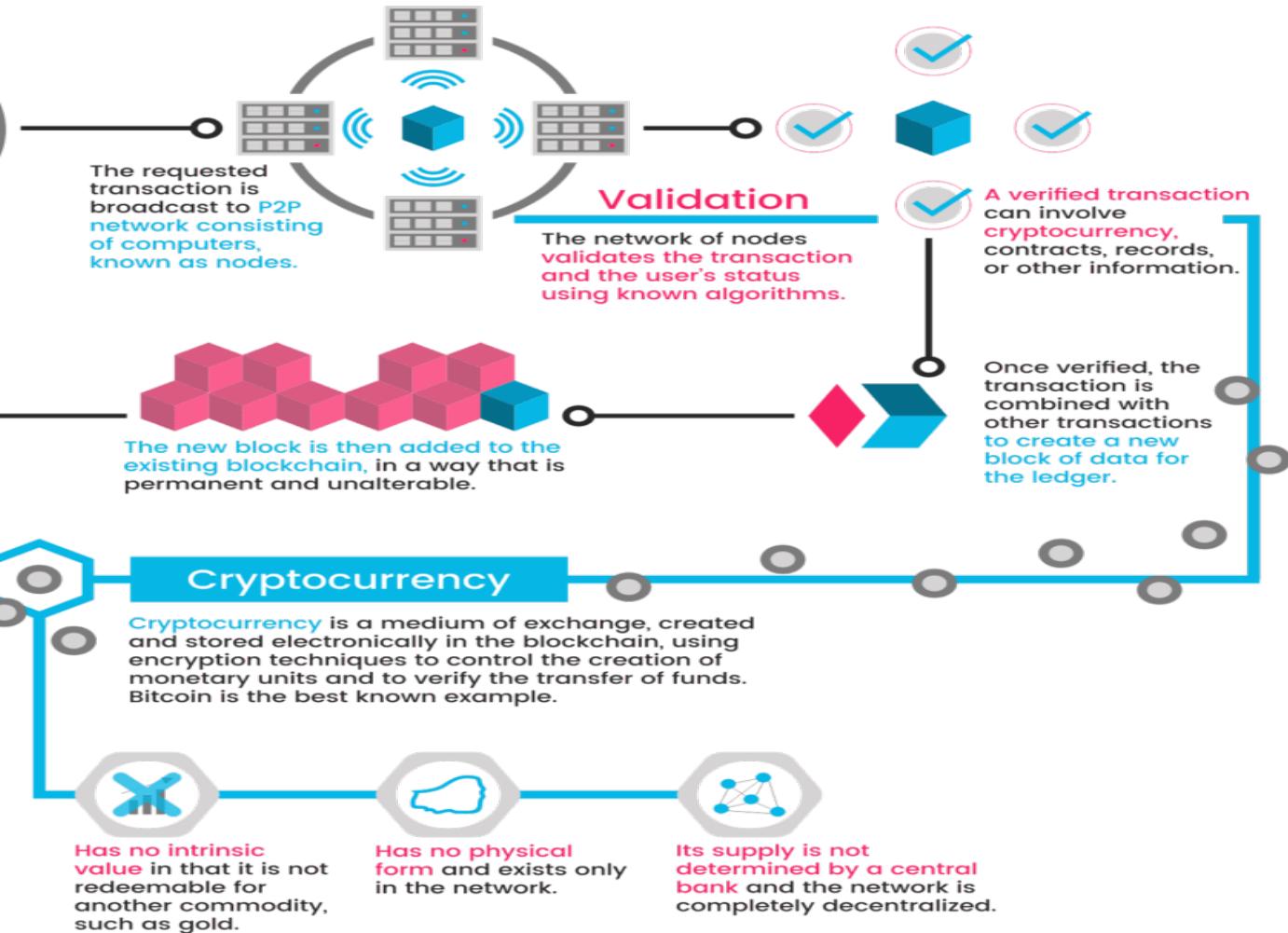
Ripple Market Cap
\$293,888,278

How does Cryptocurrency work?

How it works:



Someone requests a transaction.



How does Cryptocurrency work?



Source: <https://www.youtube.com/watch?v=0B3sccDYwul>

Top Cryptocurrencies

▲ #	Name	Market Cap	Price	Available Supply	Volume (24h)	% Change (24h)	Price Graph (7d)
1	Bitcoin	\$11,382,240,050	\$712.76	15,969,336 BTC	\$67,288,200	-1.60%	
2	Ethereum	\$904,848,975	\$10.54	85,831,133 ETH	\$4,069,260	-1.21%	
3	Ripple	\$290,446,848	\$0.008121	35,765,131,899 XRP *	\$2,386,420	0.26%	
4	Litecoin	\$184,904,214	\$3.82	48,378,029 LTC	\$2,258,970	-1.05%	
5	Monero	\$83,466,495	\$6.27	13,311,446 XMR	\$3,134,490	5.38%	
6	Ethereum Classic	\$80,817,441	\$0.942637	85,735,486 ETC	\$603,573	2.21%	
7	Dash	\$66,519,213	\$9.68	6,874,532 DASH	\$596,632	-0.77%	
8	Augur	\$52,038,360	\$4.73	11,000,000 REP *	\$396,072	6.38%	
9	NEM	\$37,322,550	\$0.004147	8,999,999,999 XEM *	\$86,817	4.40%	
10	Waves	\$35,727,500	\$0.357275	100,000,000 WAVES *	\$133,650	-3.94%	

Payment using Cryptocurrencies

- ▶ Front-end:
 - ▶ Uses a **Cryptocurrency Wallet** (similar to Digital Wallet) on the smartphone to store bitcoins or other cryptocurrencies, e.g. BitPay, Coinbase, etc.
 - ▶ The Cryptocurrency Wallet allows customers to pay (using bitcoins or other cryptocurrencies) via a contactless NFC signal or by scanning a QR code
- ▶ Back-end:
 - ▶ Similar to Online Credit/ Debit Card Payment Processing, but uses a **Payment Gateway that accepts bitcoins or other cryptocurrencies** instead, e.g. BitPay, Coinbase, CoinGate, CoinPayments, etc.

Example: Payment using Bitcoin

Two screenshots of the BitPay mobile payment interface. The left screenshot shows a QR code for 0.001771 BTC. The right screenshot shows the payment address: bitcoin:?r=https://bitpay.com/i/J99wWf...

bitpay X

Awaiting Payment... 13:54

BitPay Merchant Christmas cookies 0.001771 BTC 1 BTC = \$15,954.26

Scan Copy

How do I pay this?

Open in wallet ↗

bitpay X

Awaiting Payment... 13:26

BitPay Merchant Christmas cookies 0.001771 BTC 1 BTC = \$15,954.26

Scan Copy

To complete your payment, please send 0.001771 BTC to the address below.

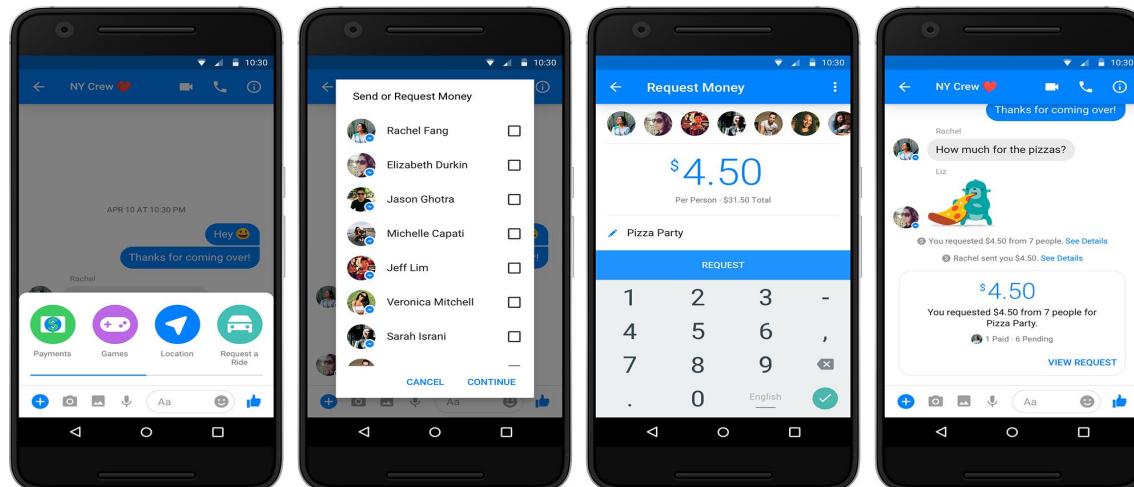
AMOUNT
0.001771 BTC

ADDRESS
`bitcoin:?r=https://bitpay.com/i/J99wWf...`

How do I pay this?

Social Media Payment

- ▶ Ride on **social media platforms** such as Facebook Messenger, WhatsApp, etc. to transfer payments
- ▶ Useful for low-value peer-to-peer & international (e.g. remittance) payments
- ▶ Chat commerce – also known as e-commerce using chat or messaging platforms – allows businesses to transact within platforms that already have a large and captive pool of users.

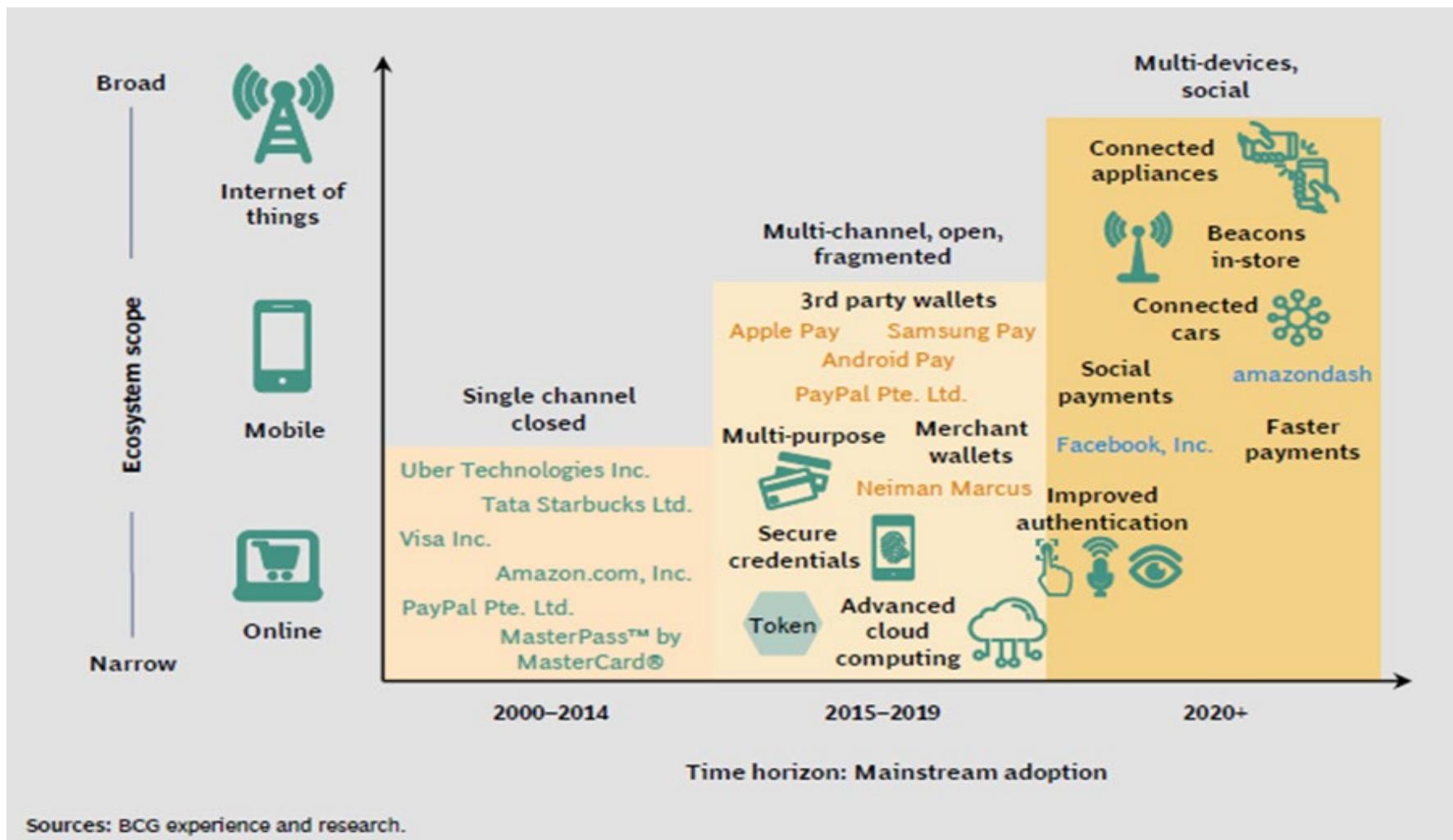


Example: Social Media Payment via Facebook Messenger

- ▶ DBS Foodster – allows customers to place order & make payment using Facebook Messenger



Trends in Digital Payments



Benefits of Digital Payments in Business & Services

1. Speed

- ▶ Reduction in cycle time from processing an invoice and making the payment is dramatic: from weeks or months to days.

2. Accuracy

- ▶ According to SAP survey results, e-Payments improve accuracy on amounts being paid

3. Visibility

- ▶ Improve cash flow forecasting, while eliminating the need to call their customers about payment status.

4. Efficiency

- ▶ Efficiency gains from PO and invoice automation to the last step in the procure to pay process.
- ▶ Faster payment reconciliation

Benefits of Digital Payments in Business & Services

5. Network

- ▶ Helps organization enforce compliance and supports in managing cash better.

6. Order to Pay

- ▶ Possibility to merge electronic payments with pre-Payment transaction documents such as purchase orders, contracts, and invoices.

7. Working capital impact

- ▶ Electronic payments support early payment discount programs that maintain or extend Days Payable Outstanding (DPO), while offering suppliers a valuable source of liquidity as needed.

Benefits of Digital Payments in Business & Services

8. Security

- ▶ Cash is more liable to theft, loss and fraud.

9. Distribution & Marketing

- ▶ Enhanced infrastructure to manage marketing promotions, loyalty schemes and sales incentives.

10. Monitoring

- ▶ Enhanced ability to monitor performance.
- ▶ Monitor trends in consumer spending.

Summary

▶ Payment

- ▶ **Trade of value** from one party (such as a person or company) to another for goods, or services

Variety of Payments Use Cases			
		Payment destination	
		Person (P/C)	Merchant / Business (M/B)
Payment Initiation	Person (P/C)	<ul style="list-style-type: none">• Remittances<ul style="list-style-type: none">– Domestic—migrant labor remittances– International• Seamless P2P transfers<ul style="list-style-type: none">– Friends, family, etc.• Digital micro payments<ul style="list-style-type: none">– Payments for services	<ul style="list-style-type: none">• Digital payment instrument for<ul style="list-style-type: none">– Online merchant payments<ul style="list-style-type: none">– E-comm, Utility bills, etc.• Proximity payments<ul style="list-style-type: none">– In-store payments– Cash on delivery• Travel and transport
	Merchant/ Bus (M/B)	<ul style="list-style-type: none">• Salary payments for daily contract workers• Reimbursements• Refund payments• Dividends	<ul style="list-style-type: none">• Digital supply chain payments (Small business to business)<ul style="list-style-type: none">– Retailer to distributor– Dealer payments etc.• Vendor payments
	Govt. (G)	<ul style="list-style-type: none">• DBT (Subsidy transfers)• Welfare scheme money transfers e.g. NREGA• Government employee salary	<ul style="list-style-type: none">• Subsidies• Tax repayments
			<ul style="list-style-type: none">• Road toll• Tax• Payments for applications• Payments to semi government organizations such as educational institutions
			<ul style="list-style-type: none">• Taxes• Excise duty payments• Toll payments
			<ul style="list-style-type: none">• Central government to state government transfers• Budget allocation payments to government agencies

▶ Traditional Payment Methods

1. Barter
2. Money/ Cash
3. Cheque

Summary

▶ Digital Payment Methods

1. Electronic Local Funds Transfers (GIRO/ FAST/ PayNow)
2. Stored Value Facilities
3. Debit/ Credit Cards
4. Online Payments
5. Digital Wallets & Mobile Payments
6. Digital Currencies/ Cryptocurrencies
7. Social Media Payments

Summary

- ▶ Trends in Digital Payments
 - ▶ Digital Wallets, Social Media Payment, etc.
 - ▶ Multipurpose, Open – small number of ways to pay that everybody accepts
- ▶ Benefits of Digital Payments in Businesses & Services
 1. Speed
 2. Accuracy
 3. Visibility
 4. Efficiency
 5. Network
 6. Order to Pay
 7. Working capital impact
 8. Security
 9. Distribution & Marketing
 10. Monitoring