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# China

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# Summary Frame



# Country summary: European Union



Country group

UMIC

% adults with a financial account  
(Findex, 2017)

80%

## ACCOUNT TO ACCOUNT R/T:

STATUS

Name of scheme/s	NetsUnion Clearing Corporation (NUCC)/ Wanglian	Internet Banking Payments System (IBPS)
Date of launch	March 2017, went live June 2018	2010
Scheme manager	Payment and Clearing Association of China (PCAC) and payment companies	Operated by people's Bank of China
Membership	Third-party Internet payment firms, banks and pre-paid card payment companies	Banks
% financial accounts included in scheme	100% of mobile money wallets	Bank accounts and qualified non-bank financial accounts

## Highlights from country:


HIGHLIGHTS

- The policy maker allowed the market to thrive before intervening to allow better tracking and monitoring of digital payments, which make up 83% of all payments in China. The implementation of NetsUnion happened in an already mature market. PBOC owns a minority stake in the scheme management company which was a PPP effort.
- NetsUnion served both the industry's and regulator's needs. The regulator sought better tracking and monitoring of digital payments, which make up 83% of all payments in China, while the industry would benefit from a single point of integration that was cheaper than the available option (QuickPay). The regulator worked with Payment and Clearing Association of China (PCAC) and its members to create and fund NetsUnion and the infrastructure.

## INTEROPERABILITY JOURNEY:



- NUCC was proposed in April 2016 by Payment and Clearing Association of China (PCAC) and approved by the People's Bank of China (PBOC) six months later (CGAP 2018b).
- Through a public private partnership, NetsUnion Clearing Corporation's network (NUCC) was launched in March 2017 as the operator of China's nation wide centralised platform for the processing of transactions undertaken by the country's third party payments providers involving bank accounts.
- Before the establishment of NUCC, UnionPay was the only authorized institution providing bank-to-bank card clearing services.
- A notice was issued on Aug 4th, 2017, mandating that from June 30th, 2018 any payment operations undertaken by third party payments providers involving bank accounts must be processed by NetsUnion, and that providers must connect to the platform by October 15th, 2017.
- (Yicai 2017, China Banking News 2020, CTMfile 2019).

# Calibrating the role of public sector in IO

		Funding & implementation role			
In setup and beyond		0: None	1: Participate/ co-fund	2. Incubate only	3: Sole fund
Policy role	0: Endorse				
	1: Catalyze 1--Encouragea				At this level, regulator applies moral suasion but takes no direct action
	2: Catalyze 2 -Actively convene & participate				Regulator also takes direct steps, such as studies, convening or threats
	3: Mandate		<b>Catalyze 2</b> <ul style="list-style-type: none"><li>Required connection and participation in a central switch and set a cut off date</li></ul> <b>Participate/co-fund</b> <ul style="list-style-type: none"><li>PBOC owns the largest stake (12%) while another 6 government agencies, some of which are direct affiliates of PBOC have 25% shares in total.</li></ul>	Mandate could include 1 or more of: <ul style="list-style-type: none"><li>Required connection to central switch</li><li>Required participation in a scheme</li><li>Method and/or level of interparty fees set</li></ul>	
	Oversee				Typical role may be oversight, but this may not apply to non-prominent non-prominent Retail Payment Systems

# Country Interoperability summary frame

Regulatory input in a mature payments market through public-private partnership arrangement that also intend to serve the industries interest

A2A or CICO		PUBLIC POLICY ROLE IN INCEPTION					PUBLIC ROLE IN IMPLEMENTATION			
		0. Endorse	1. Catalyze 1	2. Catalyze 2	3. Mandate	None	0. None	1. Co-fund	2. Incubate	3. Fund and own
O U T C O M E	0. Uncertain /too early									
	1. Below expectations									
	2. In line with expectations									
	3. Above expectations									





# Setup and Ownership





# Summary frame: A2A interoperability objectives



## Stipulated objectives

### Regulator wanted to:

1

- Strengthen oversight by gaining control of online financial transaction data by mandating that third-party payment transactions involving banks to flow through a centralized clearing platform. Previously third-party payment institutions assumed the liquidation business on their own and followed the direct link mode, which made transactions opaque, bringing about the risks of money laundering and other illegal practices.

### Although not explicitly spelled out by the industry stakeholders, it is expected that the industry will benefit because central clearing will:

2

- standardize the clearing of Internet payments,
- lower the operating costs
- increase the clearing efficiency,
- promote the resource sharing among the industry,
- maintain the sustainable development

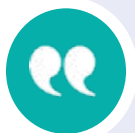


# A2A interoperability: NetsUnion Clearing Corporation (NUCC)/ Wanglian



**BACKGROUND:** The establishment of NUCC is not as innovative as people thought.

- Interoperability of mobile money payments was not the goal of NUCC when designed. NUCC doesn't support A2A interoperability in mobile payments. i.e A's Alipay account cannot transfer money to B's Wechat account.
- The purpose of NUCC was to reign in the mobile payment industry by improving oversight of flow of funds and related data. The regulator mandated that any payment operations undertaken by third party payments providers involving bank accounts must be processed by NetsUnion.
- However, even with NUCC, the regulator still does not have full visibility of flows and data because not all mobile money payment flows go through NUCC, but only flows involving banks. Flows across same network wallets do not flow through NUCC.
- NUCC is owned by the regulator (PBOC) and banks, however, the regulator controls the board and rule making, with some influence from major PSPs.



*"Regulator holds the opinion that PSPs were too big and undertook duties belonging to the regulator. For example, previously without NUCC, PSPs did all the clearing and settlement by themselves via commercial banks, and the initial payment rules were set by the PSPs. Also, PSPs held a vast amount of transaction data which remained opaque and not public even to the regulator. NUCC was thus established, and regulator requested 100% of reserves to be held in PBOC." - leading expert 1*



*"The establishment of NUCC is to cut the direct links between PSPs and banks, and centralize the transaction data. Interoperability is not one of its mandates." - leading expert 2*

# A2A interoperability: NetsUnion Clearing Corporation (NUCC)/ Wanglian



**BACKGROUND:** The regulator does not focus on front-end I/O apart from the QR code interoperability because:

- There was no need, almost all users have both Wechat Pay and Alipay account, the need to transfer from A's Alipay to B's Wechat is less and so It may be too late for the regulator to step at this point, stepping in will not be effective.
- All the wallets should be linked to bank accounts. So it is possible to transfer money between different PSPs via bank account. Theoretically, there is interoperability.
- Besides, users hardly store their value in the payment account but rather in the investment account to earn something (e.g Bao) and the platforms allow for customers to pay merchants directly from the investment account - Alipay mutual fund investment account - 3% p.a return. These transactions flow through NetsUnion.
- Linking mobile money payments to credit cards is also becoming popular. Some of these transactions also flow through UnionPay.



# A2A interoperability: NetsUnion Clearing Corporation (NUCC)/ Wanglian



**BACKGROUND:** QR code interoperability, which is a market born solution delivered by aggregators and not the regulator, is viewed to have impact to users compared to NUCC

- **Aggregators intervene in the following ways:**
  - Provide hardware and software that enables the barcode scanner can scan whichever barcode the customer displays.
  - Provide QR codes - customers can scan it no matter what wallet they use or can even make payment from a linked credit card. Displayed QR codes cannot accept payments linked to credit cards only debit cards and accounts because of fraud and risk.
  - Perform merchant reconciliation as they have two accounts - onerous. Aggregate amounts to get to your account in one lump-sum and provide reports.
- **The regulator set out to provide a solution for QR code interoperability, but this has been a discussion for years because the interests between the regulator and major PSPs do not align:**
  - UnionPay has been lobbying the regulator to lead the development of the official standardized QR code but major PSPs prefer that a third-party without conflict interest should lead the development. So far there has been no agreement.

# A2A interoperability: Competition & Innovation



**BACKGROUND:** The setup appears not to optimize competition and innovation, however, the regulator is intervening

## Current competition issues:

- For new entrants: there is almost no room for new players in the customer facing end since Alipay or Wechat Pay are dominant (JD and UnionPay made significant attempts but failed to make sizable gains). As a result, innovation has slow down/ no recent innovation.
- The PBOC recently referred the internet payment market to the competition authority because of competition concerns. However, neither industry nor academia agree that Alipay and Wechat are monopolies. Main reasons:
  - The market share data (Alipay +Wechat Pay=90%) is questionable since the denominator is not clear;
  - Alipay or Wechat Pay dominante the customer facing end, but not the vertical value chain since there are so many players in the field of payment. Alipay and Wechat Pay cannot operate without depending on the other in the back end where there is room for new entrants.

## PBOC is beginning to intervene:

- PBOC has no right to investigate antitrust cases so it advises the antitrust authority to start the investigation.
- The regulation on SuperPlatform, of which the 'duopolistic' payment arms are just a component, is about to start and it is good timing since the competition is slowing down.





# Answers to Research Questions



**The China case provides evidence that interoperability results in deepening usage of DFS, but provides fails to draw a linkage to inclusion of the excluded populations.**

- Financial inclusion in China took place before the PSPs, driven by policy intervention.
  - Based on the Findex number, the bank account ownership in China has reached more than 80%.
- The Alipay and Wechat Pay has combined 90%+ market share. The two wallets provide different value propositions beyond payments - social media for Wechat Pay vs ecommerce for Alipay, hence almost all the mobile wallet users have accounts with both. The demand for making transfers from A's Alipay account to B's Wechat account is therefore weak.
- Since all the wallets were linked to bank accounts, theoretically it is possible to make the above transfer via a bank account if the mobile money interoperability piggybacks on the banks instant payment interoperability.
- However, despite there not being an interoperability scheme, the mobile PSPs have definitely increased/ deepened the usage of bank accounts since all the mobile wallets need to link to bank accounts.
- China's interoperability experience gives a weak linkage between mobile PSPs' interoperability and inclusion of the excluded.







## Research question 2:

## What are the effective policy levers for achieving interoperability success?

- The regulation on Internet Payment in China is relatively successful as the regulator took an inclusive approach which is very important.
- Regulator cannot keep up with innovation and they often have less capacity to make effective policy on digital finance in the beginning.

Therefore, policy makers should:

- Maintain the bottom line: consumer protection and antitrust and only intervene when the market fails by:
  - Instituting heavy penalties for violation of consumer protection
  - Introduce regulation when it is timely e.g The regulation on SuperPlatform is about to start since competition is slowing down.
- Have an inclusive attitude since the market itself is efficient to solve the other (demanding) issues.
  - the market has achieved some of the financial inclusion goal through its own levers (in China's case, aggregation PSPs).

### Research question 3:

**When should the foundation advocate for interoperability - from the beginning or let it evolve over time?**

**Advocate from the beginning. However, give the market room to solve for pressing needs, but monitor closely where regulatory intervention is required so that the intervention is achieved before players are too big to reign in..**

- It is important to advocate for interoperability from the beginning in order to set the vision and expectation. This role can be played by development agencies or the regulator.
- When PSPs are already mature, they may have less incentive to build interoperable systems and the regulators may have less capability to influence market players.
  - The NUCC was a step towards, but it is not expected to achieve full transparency in the foreseeable future. It is a challenging path to ask monopoly (or duopoly) PSPs to hand over data and control to regulators.



“The foundation and other international agencies should advocate the principle as early as possible, showcasing international practises and providing comparisons so as to guide the development in other markets and reduce the the cost of error.”

# CICO interoperability: Interview Highlights



## How does agent interoperability work in practice

- Agents are both interoperable and exclusive.
- Agents can offer transfers, bill payments and withdrawals but not deposits or account opening. Only banks can take deposits.
- A typical agent will have a special machine provided by the local bank and an account in the bank.
- The transaction an agent will perform when customers come to get CICO will be transfer between customers' accounts and his account.
- Since the essential transaction performed by the agent is transfer, the interoperability is not an issue since the payment system (IBPS) supports that.
- Most of the agents get commission from the local PBOC and Banks as an incentive to run the operations since there is no fee charged to customers.
- This practice is not applied nationally since the local PBOC has different support to local agents.



## What does this all mean for third party internet payments

- With regards to digital wallets, only banks and not agents would handle CICO for digital wallets. Users cash in to bank account first, then transfer to digital wallets using the NUCC scheme.
- Moreover, cash in and out is not an issue in China nowadays due to the ubiquitous nature of digital payments / cashless payments. The agent network is more symbolic than functional.



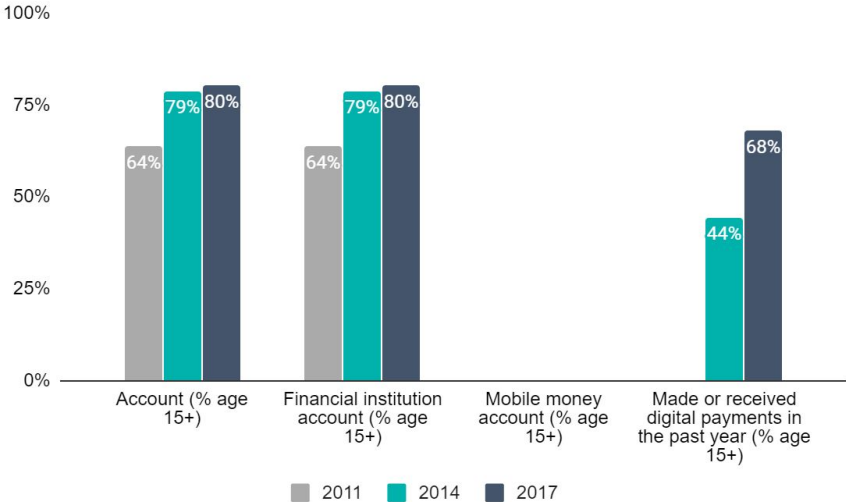


# Additional Context

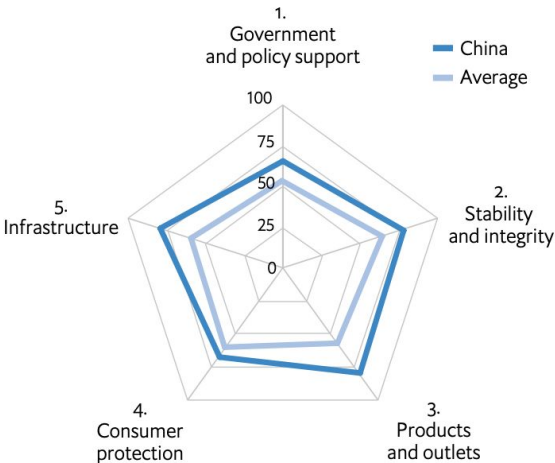




# China context: Financial inclusion, mobile payments market share & regulatory environment



Source: FINDEX 2017

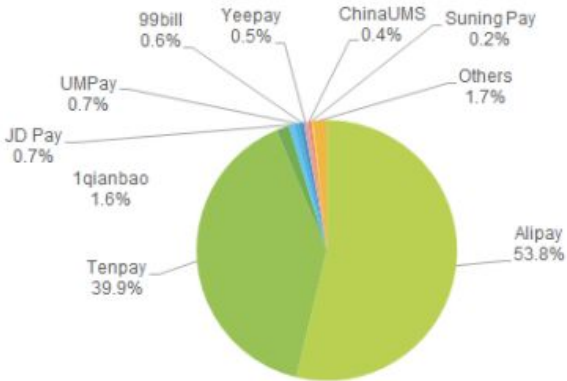


Rank	65
Score	11
Average score	52

Source: EIU Microscope 2019,



Share of Transactions of Main Players in China's Third-Party Mobile Payment Market Q1 2019



Source: iResearch 2019

**NetsUnion processes 5 times the transactions processed by IBPS:**

– average daily volumes equate to 33.4M (FIS 2019) compared to about 165M transactions processed via mobile payments platforms on NetsUnion (Ciaxin 2019)

**Faster Payments Innovation Index (FPII) - 2019**

Score: 4 Meets some features maximizing customer value

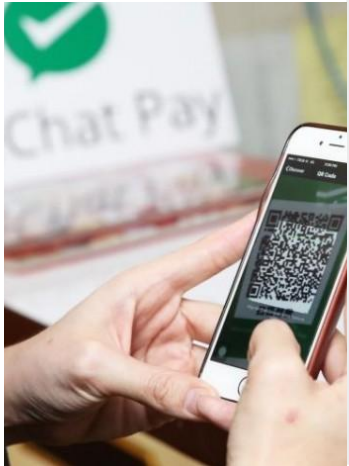
# A2A interoperability timeline

Industry and regulator led scheme formed 10 years down the line



WeChat Pay

**2013:** Tencent integrated Tenpay into WeChat, creating WeChat Pay—a payments product embedded in WeChat that enables users to send each other money directly through the messaging platform (CGAP 2019).



**2016:** In 2016, The Payment and Clearing Association of China, an industry self-regulatory body of China's payment and clearing service industry, whose members include banks and PSPs, that is PBOC-backed and State Council-approved, had a member congress to approve a proposal to build an internet payment clearing platform for non-bank payment institutions – “WangLian”. Each of the members would not have to maintain multiple relationships with banks, which was expensive for small PSPs all the banks (Kapronasia 2016). At the time, more than 500 million Chinese used mobile payments and transacted 97 billion times on non-bank mobile apps (CGAP 2018).

**March 2017:** Officially known as 'Online Payment Clearing Platform for Non-Banking Payment Institutions,' NetsUnion was jointly founded by PCAC and other organizations following the principle of 'joint establishment, joint ownership and sharing,' under the leadership of the central bank and officially launched in March 2017. A notice was issued on Aug 4th, 2017, mandating that from June 30th, 2018, any online payment operations undertaken by third party payments providers involving bank accounts must be processed by NetsUnion, and that providers must connect to the platform by October 15th, 2017. (Yicai 2017, China Banking News 2020, CTMfile 2019). PBOC also severed the relationship between banks and payment groups. NetsUnion and rival China UnionPay — the state-owned clearing network for bank card payments — replaced commercial banks as designated custodians for funds. The clearing houses, in turn, placed the funds with the PBOC

**2008:** Alipay officially introduced its mobile e-wallet, launching Alipay's meteoric growth. While it took Alipay five years to reach 100 million customers prior to 2008, it added 20 million new users in the first two months of 2009 (CGAP 2019).



**2011:** Alipay introduced proprietary versions of QR codes in China in late 2011. It took time to be widely accepted and in 2014 were banned due to fraudulent versions. WeChat and Alipay strengthened their controls and QR code payments continued to gain traction (the Asian Banker 2014).

**January 2017:** The People's Bank of China announced that it was requiring third-party payment groups to keep 20% of customer deposits in a single, dedicated custodial account at a commercial bank and specified that this account would pay no interest. In April, the reserve requirement ratio was increased to 50%, and 100% in January 2018. **Start on January 14, 2019, the reserve of PSPs were 100% deposit in the designated account.** (Financial Times 2018).

**2018:** In 2018 83% of all payments in China were made via mobile payment modes. 92% of people in China's largest cities use Wechat Pay or Alipay as their main means of payment, while 47% of the rural population reported regular use (Daxue consulting 2020).





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# References

- Caixin, 2019, Chart of the Day: China's Mobile Payment Transaction Volume Hits \$41.51 Trillion in 2018, viewed on 8 September 2020, from <https://www.caixinglobal.com/2019-03-22/chart-of-the-day-chinas-mobile-payment-transaction-volume-hits-4151-trillion-in-2018-101395789.html>
- CGAP, 2014, China: A New Paradigm in Branchless Banking?, viewed on 8 September 2020, from [https://www.cgap.org/sites/default/files/Working-Paper-China-A-New-Paradigm-in-Branchless-Banking-March-2014\\_0.pdf](https://www.cgap.org/sites/default/files/Working-Paper-China-A-New-Paradigm-in-Branchless-Banking-March-2014_0.pdf)
- CGAP, 2018, What Can Mobile Money Make Possible? China Has Many Answers, viewed on 8 September 2020, from <https://www.cgap.org/blog/what-can-mobile-money-make-possible-china-has-many-answers>
- CGAP, 2018b, Public Clearinghouse Could Shake Up China's Mobile Payment Market, viewed on 8 September 2020, from <https://www.cgap.org/blog/public-clearinghouse-could-shake-chinas-mobile-payment-market>
- CGAP, 2019, China: A Digital Payments Revolution, viewed on 8 September 2020, from <https://www.cgap.org/research/publication/china-digital-payments-revolution#:~:text=In%202013%2C%20it%20integrated%20Tenpay,rapidly%20reshaped%20China's%20payment%20landscape.>
- China Banking News, 2018, NetsUnion Clearing Corporation, viewed on 8 September 2020, from <http://www.chinabankingnews.com/wiki/netsunion-clearing-corporation/>
- CTMfile, 2019, Deutsche Bank joins China's NetsUnion network, viewed on 8 September 2020, from <https://ctmfile.com/story/deutsche-bank-joins-chinas-netsunion-network#:~:text=NetsUnion%20was%20established%20by%20the,of%20China's%20financial%20infrastructure%20system>
- Daxue Consulting, 2010, Payment Methods in China: How China Became a Mobile-first Nation, viewed on 8 September 2020, from <https://daxueconsulting.com/payment-methods-in-china/>
- Financial times, 2018, Tencent and Alipay set to lose \$1bn in revenue from payment rules, viewed on 8 September 2020, from <https://www.ft.com/content/b472f73c-859e-11e8-96dd-fa565ec55929>
- FIS, 2019, Flavors of Fast 2019 Report, viewed on 8 September 2020, from <https://www.fisglobal.com/en/flavors-of-fast>
- Forbes, 2017, How China's Central Bank Is Clamping Down On The Mobile Payment Industry, viewed on 8 September 2020, from <https://www.forbes.com/sites/jinshanhong/2017/08/18/how-chinas-central-bank-is-clamping-down-on-the-mobile-payment-industry/#672450c350be>
- Forbes, 2020, China's Central Bank Digital Currency Will Strengthen Alipay And WeChat Pay, Not Replace Them, viewed on 8 September 2020, from <https://www.forbes.com/sites/zennonkapron/2020/05/24/chinas-central-bank-digital-currency-will-strengthen-alipay-and-wechat-pay-not-replace-them/#20a0aadb6b69>
- Kapronasia, 2016, Is Payments Association launching a clearing platform to streamline the payments industry or to compete with Alipay?, viewed on 8 September 2020, from <https://www.kapronasia.com/china-payments-research-category/is-payments-association-launching-a-clearing-platform-to-streamline-payments-industry-or-to-compete-with-alipay.html>

# References

Kapronasia, 2016, Is Payments Association launching a clearing platform to streamline the payments industry or to compete with Alipay?, viewed on 8 September 2020, from <https://www.kapronasia.com/china-payments-research-category/is-payments-association-launching-a-clearing-platform-to-streamline-payments-industry-or-to-compete-with-alipay.html>

The Asdian Banker, 2020, QR code payment system, a game changer?, viewed on 8 September 2020, from <https://www.theasianbanker.com/updates-and-articles/qrcode-payment-system-a-game-changer>

Yicai global, 2017, China Unveils National Online Payment Clearing Platform, viewed on 8 September 2020, from <https://www.yicai global.com/news/china-unveils-national-online-payment-clearing-platform>

World Bank, 2018, Toward Universal Financial Inclusion in China Models, Challenges, and Global Lessons, viewed on 8 September 2020, from <https://responsiblefinanceforum.org/wp-content/uploads/2018/04/FinancialInclusionChinaP158554.pdf>



# Acknowledgement to Interviewed Country Stakeholders

# Acknowledgements to China Stakeholders:

Name	Position	Organisation
Payment Experts / Other Ecosystem Players		
Yi He	Former Vice President	Yeepay
Cheng Hua	Professor, Digital Payments	Renmin University of China
Tim LIU	General Secretary	China Academy of Financial Inclusion (CAFI)
Confidential	Director	An International Agency in China