The evolution of real-time payments in the Philippines

Contents

Executive summary

The intended audience for this paper is those parties with an interest in the introduction of a national, domestic real-time payments (RTP) service. The paper looks back on the implementation of the RTP service in the Philippines (called InstaPay) by BancNet during the extraordinary circumstances of a global pandemic. The intention is to provide a reference point for stakeholders who are planning for, or are in the process of, introducing an RTP service. The experience of the Philippines is a valuable reference point with its rapid adoption despite a significant unbanked population.

BancNet has over 30 years of payments experience in the Philippines. Initially providing ATM services, they subsequently developed the Interbank Fund Transfer (IBFT) service in the Philippines in 2000. In 2018 they entered into an agreement with Vocalink (a Mastercard Company) to provide an RTP Managed Service based on the Immediate Payments Service (IPS) technology which powers RTP systems in the Kingdom of Saudi Arabia, Peru, Singapore, Thailand, USA and is soon to be introduced in Canada.

The paper finds broad alignment with the key learnings from the application of the 'Fast Payment Framework[1]' identified by the World Bank Group (World Bank, 2021), but offers additional practical considerations from the operator's perspective in:

- the need to mobilize an entire industry for success.
  - A participant-centric planning approach that balances the implementation effort with the priority use-cases that meet market needs and provide a return on the investment for all stakeholders.
- the importance of the underlying governance framework in promoting collaboration and 'co-opetition'.
- building consumer trust and confidence in the service, and the need to develop financial and digital literacy.
- planning for the medium and long-term success of the service. The day it goes live is the start of the journey not the destination.

Ultimately, this last point is brought out through the introduction of an RTP adoption planning framework that promotes market specific consideration of how the service will evolve considering the need to encourage adoption by both payers and payees.

The paper was created with the support of MBA students from the Asian Institute of Management (AIM) in Manila, their Professor Sandeep Puri, Ph. D. and all mention of and about BancNet has been cleared with BancNet Inc, the Clearing Switch Operator (CSO) for the InstaPay real-time payments (RTP) service in the Philippines.

Robert Moore,
vice president strategic development, real-time payments

Susan Hall,
vice president product management, real-time payments

Introduction

The InstaPay service has seen explosive growth in the four years from August 2018 (120 thousand transactions per month) to just over 56 million in December 2022. From a Central Bank's perspective, where one of the benefits of an RTP system is to ensure the frictionless movement of funds, perhaps an even more impressive statistic is the value of transactions flowing across the ecosystem: In December 2022 ₱383,777,480,822, changed hands, every Peso of which was underpinned by the security of a pre-funded, deferred net settlement model.

From the perspective of BancNet (the Clearing Switch Operator or CSO) this is just the tip of the iceberg. Not only has membership of InstaPay increased from 62 to 79 by March this year but there are still more capabilities and features beyond just person to person (P2P) that are in the early days of adoption and expected to grow significantly in the coming years providing more options to enjoy safe and secure payments for Filipinos.

It is no accident that the service is seeing the growth that it is. The wheels were set in motion long before the first transaction traversed the rails. The National Retail Payment System (NRPS), created by the Bangko Sentral ng Pilipinas (BSP) (the Central Bank), set the framework for the InstaPay service and made provision for Electronic Money Issuers (EMIs) or wallets to play a role in the service's adoption and growth. This framework was translated into reality by the Philippines Payments Management Inc (PPMI) as the Payment System Management Body (PSMB) and the InstaPay ACH[2]. It was they who set the membership parameters and the rules of the service whilst fostering industry co-operation through an equitable governance model and an industry working group approach to the roadmap and use-cases. All played a part in the realization of the country's RTP ambitions.

In true 'last but not least' fashion there are the 'participants' without whom the service wouldn't have made it across that critical 'last mile'. The banks and Electronic Money Issuers (EMIs) or wallets who developed the Application Programming Interfaces (APIs), enhanced their mobile applications, industry tested the service and literally put InstaPay into the hands of the consumer.

Have you thought about what goes into launching a national domestic payments system? If you have then you should be very interested in the journey to InstaPay 2.0 achieved against the challenging backdrop of a pandemic. The pages that follow will give you some insights into the factors BancNet believe ensured that the service not only made it off the drawing board but ensured that it will continue to grow from strength to strength.

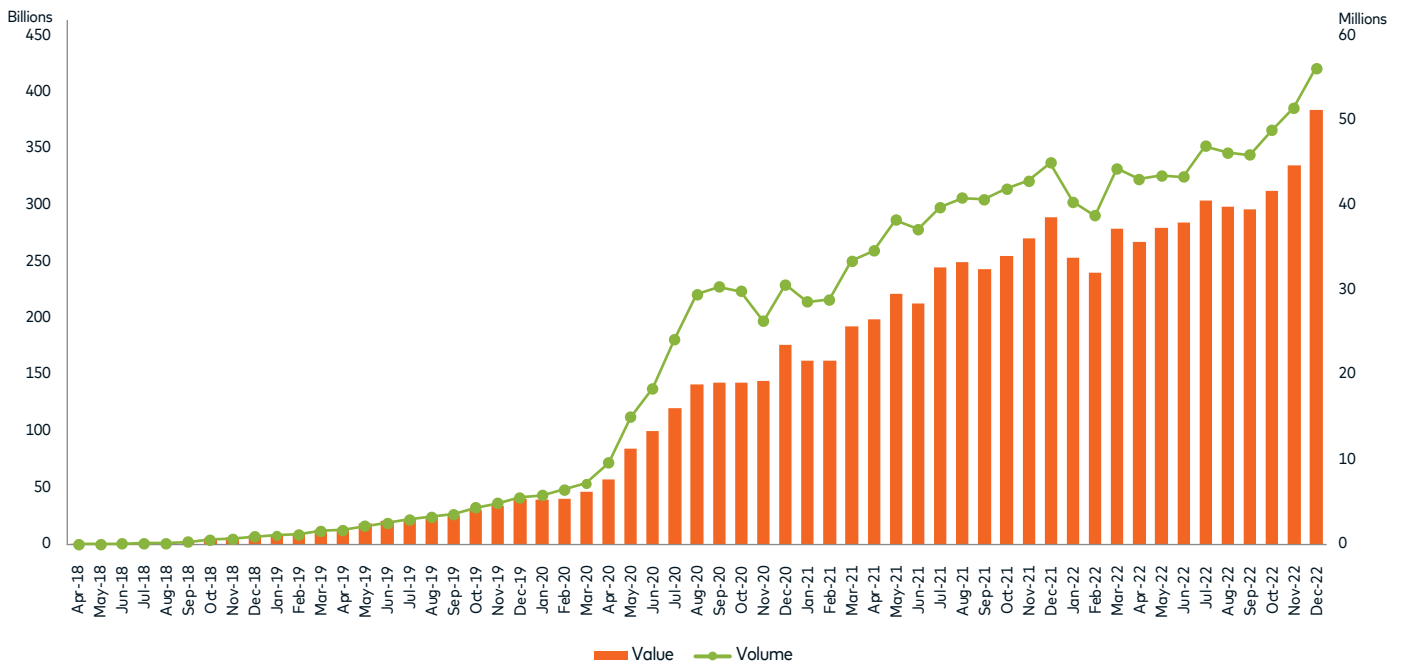## InstaPay volume and value (April 2018–December 2022)

Figure 1: InstaPay Transaction Volumes and Value 2018-2022 (Bangko Sentral ng Pilipinas, 2022)

Background

Real-time payments: Background

The real-time payments market was valued at US$ 13.55 billion in 2021 globally and is expected to grow at a compound annual growth rate (CAGR) of 34.9% from 2022 to 2030, with revenue estimated at US$ 193.07 billion by 2030[3]. The demand for real-time payment solutions increased in the wake of the COVID-19 outbreak. According to ACI Worldwide, more than 70.3 billion real-time payment transactions were processed globally in 2020, and a surge of 41% for real-time payments was observed during the pandemic[4]. The need for payments systems that avoided physical touch prompted merchants and consumers to consider contactless solutions, such as smartphone-based apps designed to make contactless and QR initiated real-time payments. This would have been unimaginable without the growth of smartphones and access to the internet that has occurred in the last decade[5].

Real-time payments offer a more consistent and faster way of making payments with the potential to positively affect consumers, businesses and world governments socially, culturally and economically. The increasing demand from customers (business and consumers) for faster payment clearing and growing investments from financial institutions, clearing houses and governments to boost the adoption of real-time payment solutions are expected to further accelerate market growth. The incorporation of innovative technologies, such as Artificial Intelligence (AI)[6] and the Internet of Things (IoT)[7], in digital payment platforms, is also expected to contribute to increased demand for real-time payment solutions.

Real-time payments: What are they

Real-time payments can be defined as payments:

- cleared to the payee (recipients) account in seconds, rather than minutes, hours or days.
- confirmed with the sender and recipient immediately[8].

People also talk about instant payments and faster payments. These are similar but different. The definition of faster payments is a payment method that posts and settles payments faster than traditional payment rails. They don't necessarily settle in real time. An example of this is the U.K. Faster Payments System (FPS), designed and implemented by VocaLink in 2008. This is a 24 hours a day, seven days a week payments solution, with confirmations being issued within 15 seconds and the transaction reaching the beneficiary within two hours maximum.

An example of instant payments is EPA Instant Credit Transfer (SCT Inst), developed by the European Payment Council (EPC). In this example, both payer and payee receive immediate confirmation and the whole process is completed in under 10 seconds with payments also being processed at any time, all-day every day.

In this paper we use the term real-time payments generically to refer to a payments service where transactions are cleared in seconds 24 hours a day, seven days a week, 365 days a year.

Real-time payments are not just about speed though, they are also addressing the following market pain points:

- **Timing and execution:** Real-time payments can be made exactly when needed, removing uncertainty around settlement. This makes it easier to forecast cash flow and to manage liquidity, reconciliation and record keeping.
- **Accuracy and timeliness:** Real-time payments avoid the errors and manual processes associated with paper cheques as well as the lead time required to schedule legacy payment types.
- **Security:** 'Push' transactions make it easier for companies to monitor their accounts with additional layers of fraud and risk management, information security and operations infrastructure creating further barriers to fraud.
- **Complexity:** API-enabled real-time payments are relatively simpler to integrate and implement, which reduces the main barrier to the adoption of new technology. By consolidating and reducing the number of payment modalities for domestic and cross-border transactions, companies can reduce costs or enable strategic realignment of labor and resources.

Real-time payments benefits:

- Consumers who want speed, convenience and transparency of what is happening with their money.
- Businesses of all sizes who can benefit from improved and more predictable cash flows.
- Financial Institutions and Fintech providers who can develop new revenue streams through open payments and real-time banking, as well as reducing the costs associated with cash handling.
- Payment providers who can generate revenue from the ecosystem in the form of richer data, overlay services and analytics.
- Government entities who disburse critical funds to taxpayer can move away from paper cheques and postage, enabling them to get payments out in a timely and more efficient manner.
- Central banks who see the benefits of reduced systemic risk through collateralized[9] clearing.

Real-time payment options are invaluable in reducing the cash economy, in turn increasing financial inclusion and spurring economic growth. Research shows that economies that transition from cash payments to digital payments can boost annual GDP by as much as three percentage points[10].

Real-time payments: Evolution

A few countries were pioneers in implementing real-time payments systems when there were no global analogies and little market demand. This was the case, for example, with Chile, South Africa, South Korea and the United Kingdom. Other jurisdictions, including the Philippines, started considering fast payments late in the first decade of the 2000s after seeing the benefits and new opportunities they brought. While a few arrangements have been present for a decade or more, it is the last five years that has seen the highest proliferation.
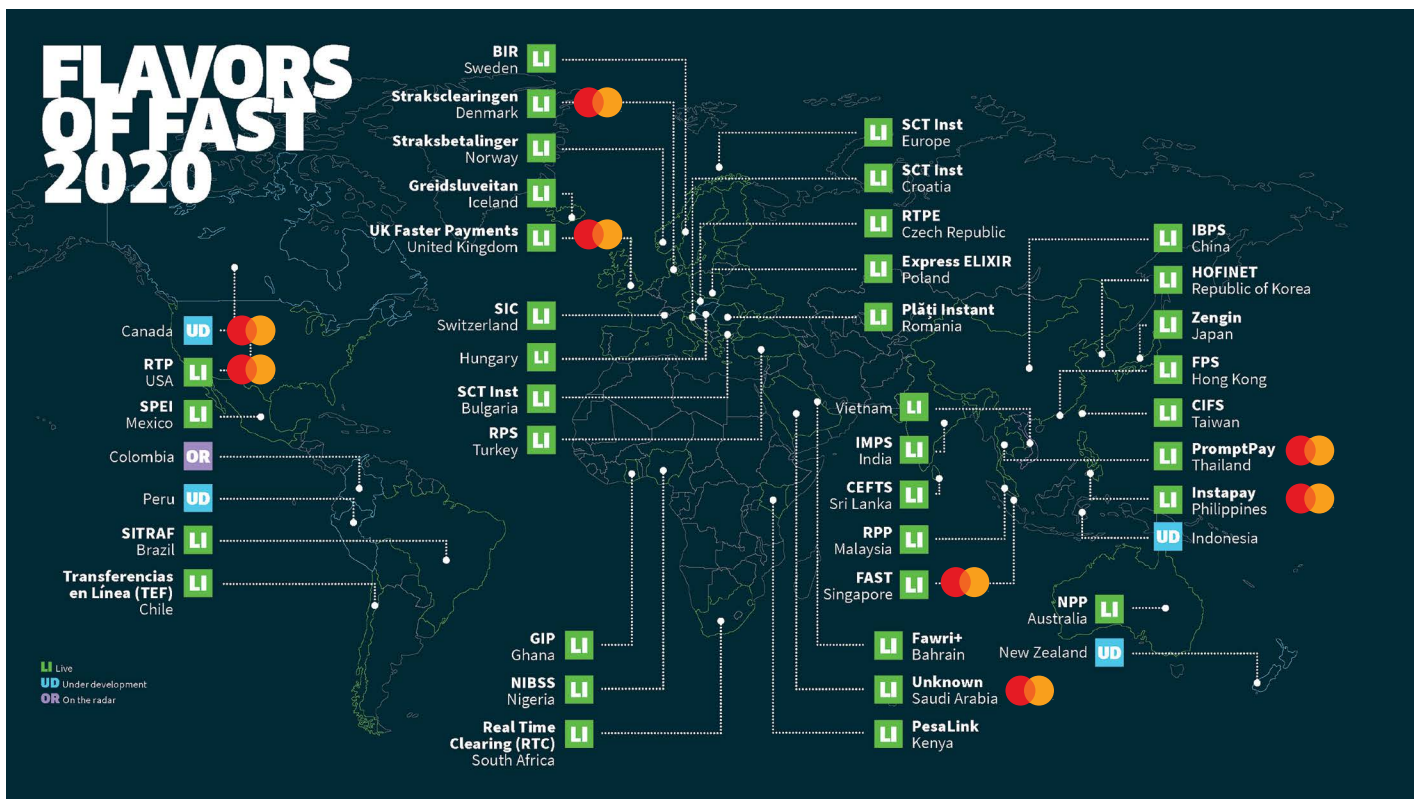

Figure 2: Real-time payments systems around the world in 2020 (FIS flavors of fast[11]) adapted to show markets powered by Mastercard's RTP technology

The wider emergence of fast payments was undoubtedly accompanied by advances in Information Technology (IT), especially with increases in access, adoption and usage of smartphones. Central Banks have also been a major driving force for RTP, either as an operator or as the catalyst for a solution of this kind to be implemented. In select jurisdictions, such as Poland and the United States, we have seen private operators introducing RTP independently of Central Bank initiatives recognizing the increasing demand.

Real-time payments: Some facts and figures

Asia Pacific dominated the real-time payments market with a share of 40% of global revenue in 2021[12]. This is attributed to the increasing usage of smartphones in emerging economies and favorable government initiatives related to digital transactions.

The Person to Business (P2B) segment accounted for the highest revenue share at more than 64% in 2021 as it becomes the preferred way businesses transact.

The Person to Person (P2P)[13] segment is likely to lead the real-time payments market from 2022 to 2023 as several banking organizations and financial service providers are entering into strategic partnerships with third-party payment service solution providers[14].

In 2014, only 17 countries were live with real-time payments, but now up to 72% of the world has a live real-time payments infrastructure or is planning to launch one soon[15]. There is an expectation that almost three-quarters of world population will have access to real-time payments by the end of 2022 and indications are that some countries in Asia Pacific will soon reach 70% digital payments[16].
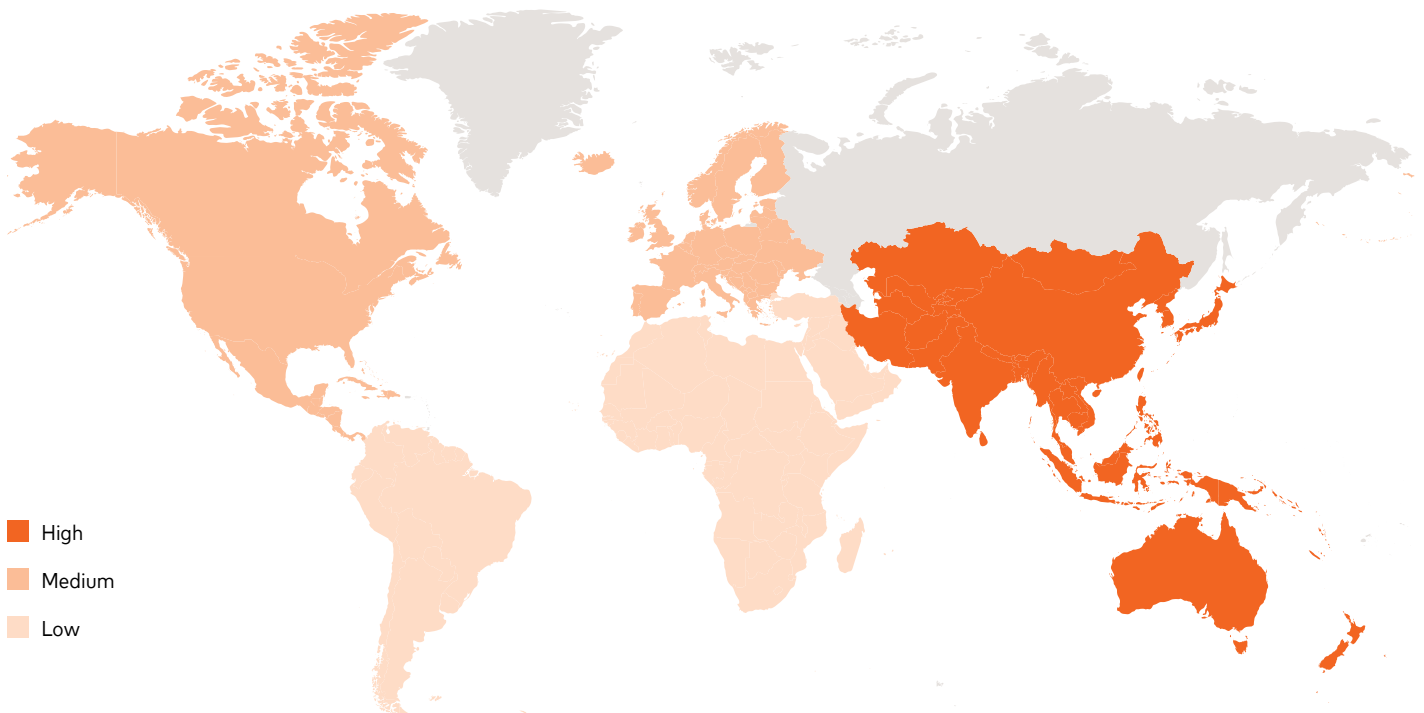

High

Medium

Low

Figure 3: Global real-time payments market: Growth rate by region (2022-2027)[17]

Sources: Mordor intelligence

Context

The Philippines payments ecosystem

BancNet is the Philippines' single ATM switch operator. It is a multi-bank, multi-channel electronic payments network that enables its members' customers to transact not only at Automated Teller Machines (ATM) but also at point-of-sale (P.O.S.) terminals, the internet and using mobile phones. It started operations on July 17, 1990 and is the Clearing Switch Operator (CSO) in the Philippines for InstaPay, which was launched in 2018[18].

InstaPay was designed to be the fastest way to move money in the Philippines that is convenient and reliable as it interconnects banks and non-bank electronic money issuers (EMI) nationwide. Anyone with a bank account or e-wallet can send funds using their smartphone, tablet or laptop to access their bank's or EMI's mobile app or internet banking site anytime of the day or night wherever they may be. The recipient will receive the money as soon as it is sent.

InstaPay processed an all-time high single-day volume of 2.82 million transactions on February 28, 2023. In April 2023 BancNet processed 58 million InstaPay transfers, 41% higher than in April 2022. These transactions were worth ₱377.2 billion, which was 46% higher than the value of transactions the year before. The average daily volume for 2022 was 1.48 million transactions. A total of 538 million transactions were processed, with a value of ₱3.46 trillion.[19]

As of March 2023, InstaPay had 79 member participants (banks and EMIs), two of which have joined in the first quarter of 2023.

InstaPay can be used to send funds instantly to a local bank account or e-wallet using an account number, a quick response (QR) code or a registered local mobile phone number. It can also now be used to pay at local stores and other businesses using the national interoperable QR standard (QRPh). The maximum amount per transaction for person-to-person payments is ₱50,000.00. Interoperable bill payments have been launched and are starting to scale, with request-to-pay[20] and cross-border payments on the horizon.

In addition to InstaPay, the Philippines also has a second electronic fund transfer service known as PESONet (run by the Philippine Clearing House Corporation (PCHC)). PESONet transactions are processed in bulk and cleared at intervals with multiple settlement and clearing cycles within the day. The payee or beneficiary will receive the full amount within the same banking day if the transfer was conducted before the cut-off time. Fund transfers made after cut-off or during non-banking days (i.e., weekends and holidays) will be completed on the next banking day.

Both InstaPay and PESONet are overseen by the Philippine Payments Management Inc .[21](PPMI), a self-governing body established in 2017 by payment industry participants and recognized by the Bangko Sentral ng Pilipinas (BSP) as the country's Payment System Management Body (PSMB). PPMI is responsible for formulating, issuing and enforcing the National Retail Payment System (NRPS) governance framework, in close coordination with the BSP. We will look further at this framework and governance structure in the Design and Implementation section.

In fact, the genesis of InstaPay can be traced back to 2018 following the foundation of the NRPS with the BSP's desire to introduce the key principle of separation between governance (rule making and setting standards) and operations. In hindsight the timing was significant given the increased demand for electronic payments driven by necessity due to consumers' restricted mobility during the pandemic-affected years. InstaPay's growth continued on an uptrend even once restrictions were relaxed late in 2021 including during a period when consumer fees, which had been suspended at the instigation of the BSP, were re-introduced.

The approach for this white paper

Given the unique characteristics of the Philippines market we decided to work with BancNet and select MBA students from the Asian Institute of Management in Manila to review the InstaPay journey. The intent being to share the lessons learned and guidance for other countries looking to introduce their own RTP infrastructure. The starting point was a World Bank report on Fast Payments[22] , from which we derived a questionnaire that was followed by a focus group discussion.

The World Bank fast payments report

The World Bank has been monitoring developments in fast payments and has undertaken a detailed study of fast payment implementations across the world. They created a policy toolkit[23] which provides guidance on the aspects that authorities need to consider when developing a Fast Payment System (FPS). The toolkit is based on the analysis of multiple FPS implementations across the world.

The Fast Payments Toolkit consists of the following three components:

- Considerations and lessons for the development and implementation of Fast Payment Systems
- Detailed analysis of FPS in a set of representative jurisdictions
- Focus notes on specific technical topics deemed highly relevant for fast payments

The key objective of using this report as the starting point was that the report had drawn several conclusions, based on their research in 16 jurisdictions, which were quite diverse in terms of their models/approaches to implementing and operating their fast payment arrangements. The jurisdictions were chosen to have a diverse mix of countries across various geographic regions and adequate coverage across matured or developed and emerging economies. Therefore, the proposed framework was considered broad enough to be applicable to different country archetypes.

For ease of reference just the table of 30 key learnings from the World Bank report will be used as the point of comparison throughout. These learnings were categorized by the World Bank according to the generic phases of an RTP implementation project; concept, design and implementation, and go-live and post implementation. We've reflected this project phasing structure and key learnings numbering in the main body of the paper. (Please see Appendix A for the table.)
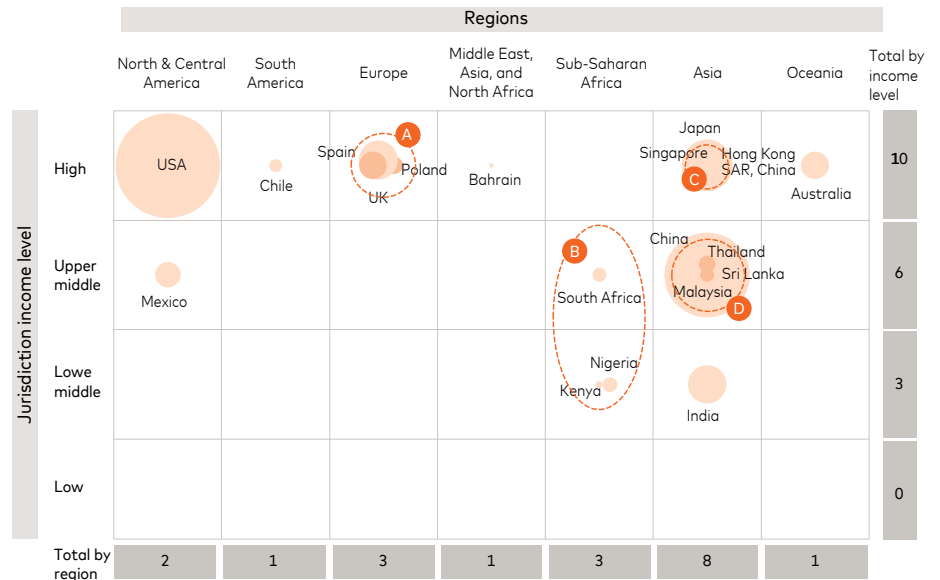
		North & Central America	South America	Europe	Middle East, Asia, and North Africa	Sub-Saharan Africa	Asia	Oceania	Total by income level
Regions									
Jurisdiction income level	High	USA	Chile	Spain Poland UK (A)	Bahrain		Japan Singapore Hong Kong SAR, China (C) Australia		10
	Upper middle	Mexico				South Africa (B)	China Thailand Sri Lanka Malaysia (D)		6
	Lowe middle					Nigeria Kenya	India		3
	Low								0
Total by region		2	1	3	1	3	8	1	

Figure 4: Jurisdictions with Live Fast Payment implementations mapped by region, country income level, and gross domestic product (World Bank[24])

Note: The size of the bubble is a representation of a jurisdiction's gross domestic product (the chart is for representation purpose only and is indicative)

Survey

A survey was derived from the World Bank report to determine whether the same learnings from the World Bank report were recognized by BancNet. The answers were assessed in relation to the World Bank report findings with a view to identifying communalities, as well as identifying other areas that were valuable to call out from the Philippine experience.

Focus group

Based on the answers to the survey, a focus group was subsequently held to discuss the results in more detail. This session was recorded and transcribed. The insights from this session and the survey are incorporated throughout the remainder of the paper.

Key findings and recommendations

As outlined in the approach, the data for this survey were collected based on the framework defined in the World Bank report. The key findings and recommendations are shown here using the same structure of lessons learned based on generic implementation project phases of concept, design and implementation and go-live/post implementation.

The summary table of key learnings in the World Bank report was numbered 1 through 30 so this numbering is retained here for ease of reference. The convention used in this paper is that the World Bank key learnings number will be showing in closed brackets (n) to ensure the focus of the paper is maintained on only the areas that showed strong representation in the survey and focus group discussion data are called out – that is not to say that the other lessons learned are not recognized or important, just that they did not evoke a strong response.

One last point to note before turning to the key areas is that the World Bank report covers the viewpoints of the central bank, operator, and participants. Here our lens is that of the operator, so some variances in perspective are to be expected.

Concept

World Bank key learnings references covered in this section

1. Have clarity on the objective, including motivations/drivers for developing fast payment services in their jurisdiction.

2. Obtain knowledge of fast payment arrangements in other jurisdictions, including the key features of their operating models and service offerings.

3. As part of the design, focus on establishing a core platform and associated services on top of which other stakeholders can innovate and build further services.

4. Underpin the business case with a clear vision of the role for the fast payment arrangement in terms of use cases and services it can offer to Payment Service Providers (PSPs) and the market in general. This is critical for developing a credible business plan and garnering industry support.

7. Give due regard to the existing payments infrastructure setup, including such aspects as current familiarity with real-time payments, instruments available (for example, push and pull), National Payment System (NPS) integration, support of use cases, settlement models, the accounting practices applicable to payments and other banking activities operating 24 hours a day, seven days a week, among others.

8. Study the existing internal infrastructure of banks and other potential PSPs and assess their ability to achieve immediate fund transfers with certainty. Jurisdictions could consider agreeing on minimum criteria for participation up front, in a way that ensures that at least the major banks and some other smaller banks and non-bank PSPs can be ready to join by the predecided "go-live" date.

The key lessons that were recognized as important to apply during the concept phase of a real-time payments' implementation were (1) to have clearly understood motivations for its introduction, (2) to learn lessons from the approaches of other jurisdictions and (3) to give due regard to the existing payments infrastructure.

Against (1) clearly understanding motivations for its introduction, the survey recognized two related areas: the drivers for real-time payments more generally and the motivations of the operator for replacing the initial service with a new one powered by Mastercard technology.

The drivers identified by the world bank were ranked by importance in the survey responses with the results shown below.
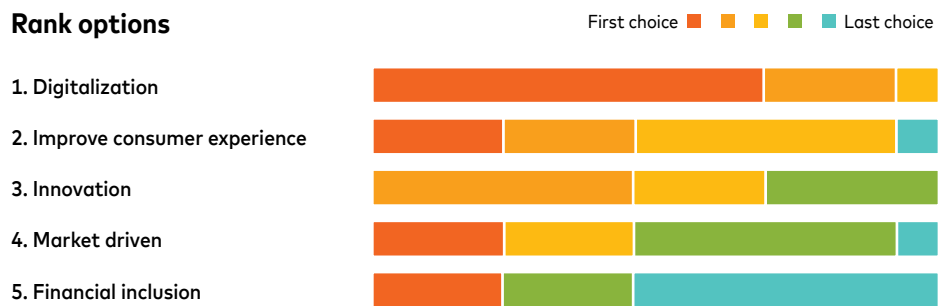
Rank options
First choice ■ ■ ■ ■ ■ Last choice

1. Digitalization
2. Improve consumer experience
3. Innovation
4. Market driven
5. Financial inclusion

Figure 5: Ranked distribution of motivations for introducing the new RTP system

The order represented here may be influenced by the work of the Central Bank that has clearly stated digitalization targets for retail payments (50% by 2023[25]) including the reports published by the Better Than Cash Alliance[26].

So, it was not that Financial Inclusion was considered less important, but rather that introducing RTP in isolation cannot solve the underlying economic and social conditions that cause financial exclusion.

It was noted that the construct of the National Retail Payments System framework or governance model introduced by the BSP has encouraged participation by wallets which are seen as generally more accessible to the underbanked. We will look more at the construct of the NRPS in the following section on design and implementation.

When looking at the objectives of the operator in relation to the introduction of the new InstaPay service some of the more operational considerations came to the fore:

- The need for scalability and the ability to launch new use-cases
- Capability and futureproofing
- Desire for a world-class infrastructure
- The need to perform and deliver to continue to be the preferred CSO

For (2) learning lessons from other jurisdictions, there were a couple of points that came out. The first is linked to (4) which encourages the development of a business case with a clearly articulated roadmap to secure participant buy-in. Thailand has seen phenomenal growth in the volume of transactions of their RTP service (PromptPay), but their approach was not one that translated directly to the Philippines. In Thailand initial adoption was based on registration of national identity and mobile phone numbers as an alias (or proxy) to be able to receive government disbursements (G2P). The Philippines national ID programme was still in the early stages as the InstaPay service was going live, and government disbursements are largely distributed either by large government banks (like Landbank) primarily as 'on-us[27]' transactions or through PESONet. As such and based on the large, geographically disbursed, tech-savvy Filipino population it was Person to Person (P2P) payments that were introduced first.

Rank options

First choice ■ ■ Last choice

1. Individual payments
2. Business payments
3. Goverment payments

Figure 6: Payment flows ranked in order of importance for RTP adoption in the Philippines

"It was the combination of global experience and the local market knowledge, experience and relationships of BancNet that ensured the project was able to navigate the various challenges and pitfalls that can be expected during an RTP implementation."

The second area in relation to lessons learned from other jurisdictions was the recognition that working with a global partner with previous experience of RTP implementations in different markets can be helpful in the exchange of experience and perspectives. Most importantly though it was the combination of global experience and the local market knowledge, experience and relationships of BancNet that ensured the project was able to navigate the various challenges and pitfalls that can be expected during an RTP implementation.

There were multiple areas where this glocal (global and local) partnership came into its own related to lessons in (7) giving due consideration to existing payments infrastructure and (8) recognizing the capability of participants to achieve immediate fund transfers. When planning an RTP implementation the two areas of integration that typically see the highest degree of customization are the participant connections and interaction with the Central Bank', typically through the Real-Time Gross Settlement (RTGS) system.

The availability of the ISO20022 messaging standard was rated 'moderately to very important' by the operator in the selection of the new RTP system, particularly when looking ahead to cross-border interoperability. When it came to the participant's connections into the service however it was necessary to balance the desire to move to the new ISO20022 standard with the reality of the effort required of participants[28] and the associated timeline to achieve it (8).

Because BancNet had already developed a first generation RTP service one of the key features of the implementation approach was to go live with a 'like for like' service. That meant that the initial go-live would support the existing Person to Person (P2P) use-case and that an adaptor would be built to 'translate' between the interface specifications of the legacy and new system. Ensuring 'backwards compatibility' will always involve some level of compromise to support the lowest common denominator. If by doing so it means that all participants can switchover to (or launch with) the new service at the same time with no loss of service for the consumer (as in the Philippines) then it could be a compromise worth making. The capability for ISO2002 credit transfers would follow in the first year of operations, and interoperability between the two formats will remain a feature of the service for at least the medium-term (three to five years).

As well as maintaining compatibility from a messaging standards perspective consideration was also given to the physical network connectivity of participants. Although participants were required to procure new cryptographic certificates to secure the connections, where possible when it came to the physical connections the design principle was to re-use the existing network infrastructure and to minimize change where possible.

Lastly, the integration of the new service with the RTGS of the Philippines (PhilPaSS) was another critical dimension where the balance of global experience and local knowledge was invaluable. A key feature of a modern RTP service is ensuring an efficient trade-off between liquidity risk and speed. Typically, this is achieved through separation of clearing and settlement, with all cleared transactions 'guaranteed' by participants' collateral in the system. The ability of the service to support a pre-funded deferred net settlement model, supported by BancNet's experience of the unique requirements of PhilPaSS meant that the industry was able to support a 'live proving' model where the original InstaPay service and the new systems co-existed with only one being considered primary for settlement purposes at a given point in the migration.

The section that follows will look at some of the key lessons listed under the heading of design and implementation, but it should be acknowledged that all aspects of the project need to be considered during the concept phase as that is when the foundations are built for everything that follows. From how different stakeholders will engage with the project, to the business case and buy-in, but particularly the consumer awareness and education approach too. That's an area that's often left as an afterthought in the run-up to go-live, but the reality is that things like the consumer facing brand, 'how to' videos and generally going about building the requisite trust in a payments ecosystem are activities that takes a long time to bear fruit, so they should be run in parallel to the more technical or IT-centric project that often gets the most attention.

The go-live of the service is often seen as the finish line, but in reality, the go-live is the start line for adoption, acceptance, innovation and the introduction of new use-cases that take advantage of more of the new services capabilities. The ultimate success of the service requires a lot of directed activity from a large and complex ecosystem with varying political and competitive pressures – more on how the Philippines navigated a course through that below.

"The go-live of the service is often seen as the finish line, but in reality, the go-live is the start line for adoption, acceptance, innovation and the introduction of new use-cases that take advantage of more of the new service's capabilities."

Design and implementation

World Bank key learnings references covered in this section

10. Ensure structured planning and implementation to help mitigate implementation delays, including those related to stakeholder onboarding. It is essential to give participants sufficient time to adapt—that is, for contract negotiation, internal system development and implementation.

11. Going live with a basic service—with limited features—can be a good strategy to get the ball rolling. The design of the fast payment arrangement should nevertheless be flexible enough to accommodate multiple use cases/services based on dynamic market needs (that is, the "plug and play" approach).

12. Consider user experience as a critical factor that needs to be kept in mind while designing and developing a fast payment arrangement. Focus should be placed on providing a seamless experience across all access channels. The elements that help enhance the customer experience include the use of aliases and services provided by third parties (for example, payment initiation).

13. Design and implement a strong governance framework for the fast payment arrangement. All participants (banks and non-banks) should be represented and have a say in the decision-making. The voices of external key parties, such as fintechs and telcos, also need to be heard and given due consideration.

16. Ensure fair, transparent, and risk-based access criteria that do not preclude membership based on institution type. This is critical to foster innovation and ongoing competition in the payment ecosystem, recognizing, though, that many smaller and mid-sized PSPs may opt for indirect participation, given the financial and technical requirements for direct participation.

26. Adopt a product road map approach for new use cases/ services and functionalities that shares the vision of the owner/operator with all participants (and other relevant stakeholders, such as telcos), ensuring that these stakeholders will be able to adopt these changes in a timely manner.

For the key lessons associated with the design and implementation phase this section will cover the topics as follows; the governance framework and broad membership (13,16), planning for implementation, particularly recognizing the participant effort required (10), going live with a basic service (11) and finally looking at the use of aliases (12).

There could be an entire series of whitepapers written just about payments governance frameworks but given the breadth of materials available from the organizations like the Bank of International Settlements, such as the Principles for Market Infrastructures, we will limit our observations here to elements that BancNet recognized as particularly influential in the implementation of InstaPay.

Figure 7 below shows a logical representation of the National Retail Payments System (NRPS) governance framework (13) that was formally introduced by the BSP in circular 980 of November 2017[29].

> "The practice of creating 'ACH working groups' with broad cross-industry membership was seen to have helped foster the buy-in of participants when developing a particular use case and formulating the rulebook for it."
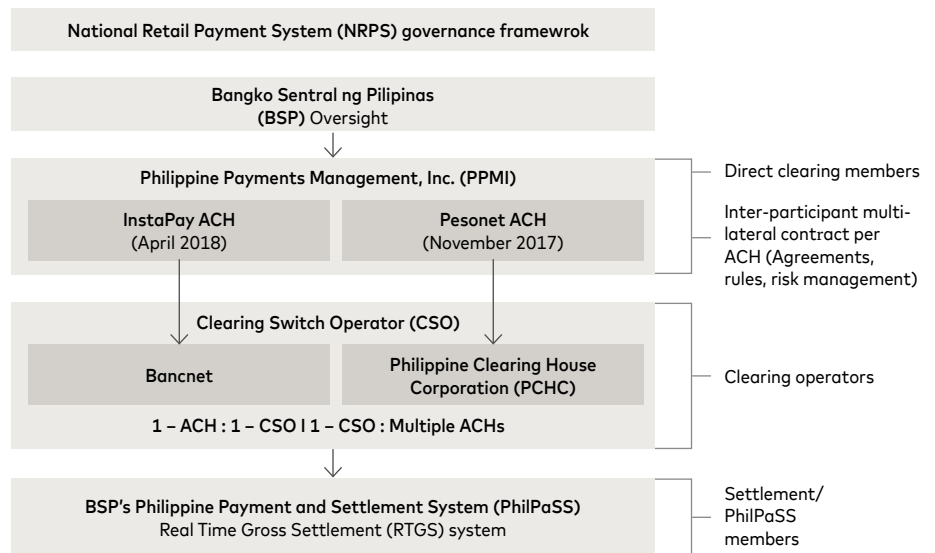

Figure 7: NRPS governance framework[30]

In creating the NRPS framework the BSP established the key principle of separating governance (rule making and setting standards) from operations.

An element of the NRPS that isn't immediately apparent from the figure above was the BSP's support for all supervised entities, whether Banks or EMIs, to be participants in the InstaPay service (16). The EMIs have played a significant role in enabling access to financial services for the underbanked and promoting healthy competition in the ecosystem.

From the broader governance perspective, the ACH leadership structure, by definition, was required to be representative of the overall membership. Specifically, the practice of creating 'ACH working groups'[31] with broad cross-industry membership was seen to have helped foster the buy-in of participants when developing a particular use case and formulating the rulebook for it. The working group model was defined in the NRPS, but it also worked in practice where the setup ensured that responsibility and leadership for different use-cases was shared across the membership, and this helped to ensure voices were heard and decision making was inclusive.

"There should be as much focus on identifying and engaging with the product and business owners of the participants and setting these wheels in motion as there is on building the core RTP system."

"Introduction of the initial use-case and the roadmap for subsequent use-cases is so critical to the overall success of the RTP service."

Even in the most collaborative ecosystems a consensus driven approach isn't always the most efficient in achieving the desired outcomes. When looking at the factors that had the most influence in 'encouraging participants to develop and launch use-cases and features' the ability of the PPMI to judiciously issue a mandate to the membership in response to recommendations from the ACH was seen as significant.

Other factors that ranked highly for encouraging use-case development by participants included 'demonstrating the value participants could realize' and 'education about service capability'. These factors might be considered 'no-brainers', but it highlights the need for a holistic, balanced plan that recognizes the need for both technology and business planning throughout the implementation. RTP project plans tend to focus on the technology and implementation side (for good reason, they are difficult, complex technology projects), but the reality is that there is an entire product and business planning lifecycle that participants need to navigate within their organizations before the service can be put in the hands of the consumer.

From the participants' perspective they need to undertake a range of business activities from identifying consumer segments, developing the product strategy, defining the user experience[32], creating the go to market model, building the business case, budget approval (the list could go on). Without these activities new products and services can't be delivered to the consumer and the RTP system is nothing if it exists in a vacuum. This reality means there should be as much focus on identifying and engaging with the product and business owners of the participants and setting these wheels in motion as there does on building the core RTP system.

Whether it's business or technology planning the effort required by the participants to make the service work should not be underestimated. Whilst the new RTP service will likely be the single biggest project for the Central Bank or the operator, it will likely just be one project in a portfolio of ongoing work for the participants. Another project requiring budget, resources and active prioritization to ensure success. This came across very strongly in the survey results where the participants were recognized as the industry body that 'played the greatest role in the introduction of RTP'.

It is for the reasons above that the introduction of the initial use-case and the roadmap for subsequent use-cases (26) is so critical to the overall success of the RTP service. It may be that the incentive to receive government disbursements provides the impetus for RTP adoption (like with PromptPay in Thailand) or it could be the demand for P2P payments that drives consumer awareness (as with InstaPay), whatever the first use-case is it's vital that the participants can see how the service is going to evolve and how they will achieve a return on their investment given differences in their respective commercial models and customer acquisition strategies.

"The take-away here is that rather than just following the lead of another market it's important to recognize the characteristics of your market archetype and the specific payments pain points that can be solved."

As mentioned previously, in the Philippines P2P payments were the original use-case launched with the Interbank Fund Transfer Service, so this was replicated when the service migrated to the new platform in 2021.

Since then, the industry has seen the introduction of various new use cases. Person to Merchant (P2M) payments were launched providing support for the BSP's quick response (QR) standard (QRPh) to encourage much broader participation of merchants, especially the more informal trading sector building on consumer familiarity with InstaPay. Person to Biller (P2B) payments are also now being scaled providing consumers with a more convenient way to pay their bills by scanning the QRPh, or by including the required details from the bill itself – by the end of 2022 over 1,300 billers can be shared across the network. The take-away here is that rather than just following the lead of another market it's important to recognize the characteristics of your market archetype and the specific payments pain points that can be solved.

Further insights on the introduction of use-cases and the wider market adoption considerations are covered in the go-live and post implementation section that follows, but for now we will turn our attention to one aspect of consumer adoption - the use of aliases.

We've already mentioned PromptPay in Thailand and the rapid adoption of RTP seen there through the registration of national IDs as an alias or proxy for an account number for G2P payments, but here we'll take a brief look at some of the principles behind the use of proxies and why they have supported consumer adoption in multiple markets[33].

When we talk about a proxy, we're talking about a unique identifier that can be registered by a payee so that a payer can direct a payment to them without needing to know their full account details.

Some live market examples of different proxies include National IDs for an individual (Thailand), a company reference number such as a Unique Entity Number (UEN) (Singapore) or at its most simple a mobile phone number for an individual (multiple markets). Using the last example to make a payment to someone it could be as simple as using my mobile banking app to look up a friend's mobile phone number from my address book. I know that the number is valid (because I use it to send them messages), and I can trust the service to direct the payment to the account they have registered that mobile number against.

The fragility of consumer confidence in payments, especially for a new service is something we've already touched on. The benefit of using a proxy for payments is that it provides encouragement for both the payee and payer. For the payee it means that they do not have to share account information, which is usually considered private. A mobile phone number is by its nature more public as we're habitually more used to sharing our phone number.

"In the Philippines proxy capability was one of the services provided quite early in the service roadmap but was not prioritized in the early stages in favor of establishing the primary use-cases. It has also met with some challenges in adoption perhaps in part due to the scale of the EMIs who already used telephone numbers as account numbers."

For the payer it helps in a few different ways. They're probably not used to typing in a combination of sort codes and account numbers regularly[34], and there may be variations in the format or length of them. With a mobile phone number even if they're typing it manually, they will subconsciously know that it only contains numbers, that typically a phone number is a standard length, and that in most markets they all start with the same few pairs of numbers (e.g., 07 for the UK or 08/09 in the Philippines). And if they're looking up an existing contact from their phone's address book then they have even more certainty. The second advantage being that typically a proxy payment will contain a 'lookup' validation step that returns an identifier for the payee who has registered that mobile number (a company or individual name possibly with some characters masked) so the sender has more comfort that the payment isn't being paid to the wrong account.

The nature of proxy payments means that the user experience is better the more participants and registered consumers there are (less failed lookups) so industry wide adoption is the preferred end-goal. In the Philippines proxy capability was one of the services provided quite early in the service roadmap but was not prioritized in the early stages in favor of establishing the primary use-cases. It has also met with some challenges in adoption perhaps in part due to the scale of the EMIs who already used telephone numbers as account numbers. Now that the different use-cases are starting to scale, there will be an industry push for participants to support proxy services in the coming year and will lean on the inherent security benefits of validating payee details. The recent efforts by the respective payments authorities of Singapore and Thailand to enable cross-border payments using the respective proxy capabilities of PromptPay and PayNow[35] no doubt providing some additional impetus too given the nine percent contribution to the GDP of the Philippines made by the significant Overseas Filipino Worker (OFW) population[36].

Whilst this section has focused on the design and implementation phase, the lens we have taken is on the considerations beyond the technology that are needed to set the service up for success over the medium- and long-term horizons beyond launch. This theme continues in the section below as we turn our attention to go-live and post implementation.

Go-live and post implementation

World Bank key learnings references covered in this section

24. Generate customer awareness in the initial years to increase registrations and uptake. Customers often require handholding to familiarize themselves with the new service and its functionalities.

30. Evaluate on an ongoing basis whether the system continues to meet the evolving ecosystem needs; fosters the safety, efficiency and reliability of the NPS; and has the right governance arrangements. Take appropriate actions based on the evaluation.

"Awareness and education about payments systems including 'how to' videos and frequently asked questions can be more efficient if driven as central campaigns that individual participants can then build from."

In this last section we will cover the key learnings relating to go-live and post implementation. We've made the point throughout that achieving an outcome at the end of the project requires planning and attention from the concept or initiation phase, so our intention here is to draw out some areas that warrant early consideration.

We'll start by looking at consumer awareness (24) and education about the service considering the security (30) angle and the wider implications for consumer financial and digital literacy. To close the paper, we offer a model for RTP adoption and scaling that could be of benefit to those considering the implementation of an RTP service to help structure ideas about the medium and long-term planning horizons. The reason we've opted to focus on these areas is that each technical RTP service go-live will vary in terms of approach with myriad questions to answer; is there a migration from an existing service, will there be a pilot group of participants that launch the service, how will liquidity be managed for go-live, what are the contingency and fallback plans etc.

There's a school of thought that says payments should be invisible to the consumer, they shouldn't need to know what rail they're using and just need to trust the organization that they interact with for the service. Conversely there's the concept of 'trustmarks' that help consumers to recognize something that they can have confidence in because it has the support of recognized players in the industry. With the ultimate recognition coming when consumers start to use the name as a verb – we all now 'google the answer' and maybe in the future you'll 'just InstaPay me'. The inherent risk-aversion we all feel to loss, particularly something as tangible as our money means that the adoption of new methods of payments are very susceptible to consumer confidence as we touched on when describing proxies. Early in the maturity cycle of a domestic payments system, it can help when the central bank, the payments scheme and the participants are demonstrably working in harmony. Awareness and education about payments systems including 'how to' videos and frequently asked questions can be more efficient if driven as central campaigns that individual participants can then build from. However you choose to approach this for your market, it is something that needs to be agreed, planned, paid for, executed against and maintained so it warrants careful consideration. This was one of the lessons learned from the introduction of the original IBFT service which did not include provision for an industry-wide consumer awareness campaign.

The adoption of any new payment instrument is described as a two-sided ecosystem (someone who can make a payment and someone who can receive a payment). That characteristic gives rise to a 'chicken and egg' scenario - how do you encourage someone to pay with your product or service if there isn't anyone they can pay, and how do you convince someone to accept your payments method if no-one is trying to pay them with it? This is true at the level of an individual payment instrument or use-case (think of contactless as an example) and it's true at the RTP service level too.

If we bring together the need for participants to find use-cases that play to their business strategy (as outlined in the design and implementation section) with the need to build a two-sided ecosystem it follows that there should be a high-level model for RTP service planning that endeavours to bring these elements together. Based on our analysis of RTP market adoption we've developed a generic framework that we've populated with some examples in figure 8 below.
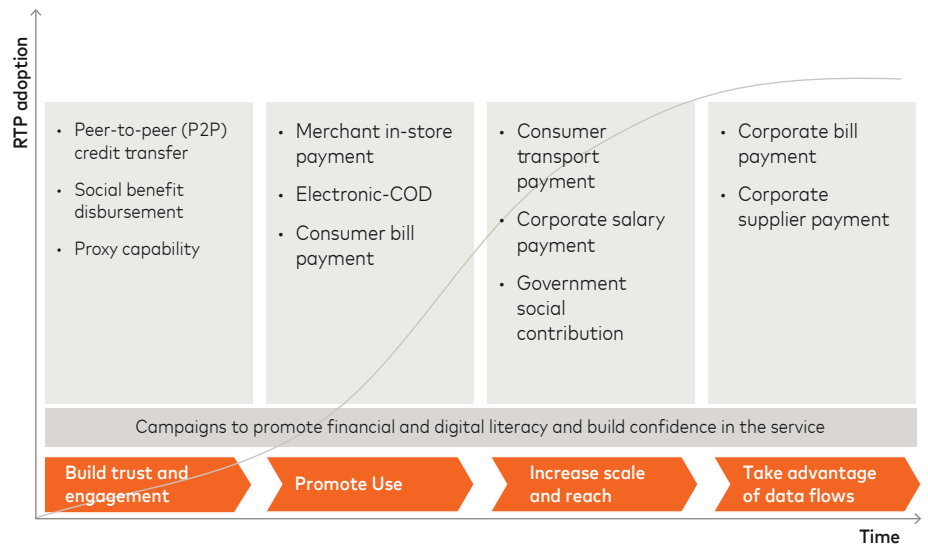

Figure 8: A model for RTP adoption

As with most models this isn't intended to be prescriptive, but rather to help those responsible for ensuring the success of an RTP service to think about how to balance different facets of the service over time. The aim being that both sides of the ecosystem are given due consideration and participants can see the bigger picture as to why they should be getting in on the ground floor.

Having given due consideration to planning for the medium to long-term horizon of the service and scaling the base of payers and payees there is one very basic element that should not be overlooked. That is the user experience (UX) of the payments service which is most likely going to be through the mobile banking or digital wallet 'app'. This was the factor with the highest consensus and was perceived as being the most critical factor in the adoption of real-time payments by consumers. Some markets will be prescriptive about the individual screens, menus, brand placement and related features in their rulebooks, in other markets the UX is left to the participants and is seen more as an area of differentiation in the competitive space for customer acquisition and retention.

"Ultimately though we would recommend that when comparing the introduction of RTP services in other markets that the research is extended to include how the consumer will interact with the service."

Whichever approach is adopted by your market, it's an area where the principle described earlier of learning from other markets is applicable at multiple levels. It's likely that individual participants in a given market will have a view on the relative strengths and weaknesses of their competitors' apps. If they're part of a multi-national, they can also gain insights from other markets. Ultimately though we would recommend that when comparing the introduction of RTP services in other markets that the research is extended to include how the consumer will interact with the service. What are the features and flows of the various applications that have seen widespread consumer adoption elsewhere and are they applicable for your market?

The last topic to touch on came up in discussion about the security considerations of introducing an RTP service. The nature of what is called authorized push payments fraud[37] is recognized as an area that warrants an ecosystem level response (that is, from the governance framework to the rulebooks, to the underlying technology and consumer protections). The scope of this topic is much broader than we can do justice to here, but there is useful summary of international practices available in the paper referenced in the footnote below.

The point that was raised about security was related to the general level of financial and digital literacy in the population. As mentioned in the context setting of the paper, the Philippines is recognized as a tech-savvy market with very high internet usage and mobile phone penetration. It was felt however that with rapidly increasing levels of payments digitization that there was an opportunity to help educate consumers more about the precautions they should take in their day-to-day interactions with payments services. Given that one of the main themes of this paper has been to encourage thinking about the service holistically from the concept phase of the project this was an area we felt would take a long time to bear fruit and should be considered as something that could be put in motion while the exact details of the RTP service are still quite nascent.

This section of the paper has focused on the areas that are likely to play the most significant role in the ultimate success of the service and which are also expected to have the longest lead times. It also offered a model for RTP adoption to help collate thoughts on building both sides of the ecosystem.

Conclusion

This paper set out to provide those parties with an interest in implementing an RTP service with insights and observations from a recent implementation in the Philippines. We initially provided some background on the growth of real-time payments and the context of the market in the Philippines. We then structured the body of the paper according to the generic phases of an implementation project, as per the World Bank report approach, but highlighted the need to approach the planning holistically throughout.

We strongly encourage the key decision makers for RTP projects to actively plan for and understand the motivations of different players in the ecosystem, especially in relation to the relative effort required of them to ensure the ultimate success of the service. To this end we offered a simple framework to help planners think beyond the initial launch to the medium and long-term success.

To close we offer the following bullet points as a summary of the key themes explored:

- There are myriad drivers for establishing a domestic RTP service, but success requires focus on the orchestration of the whole ecosystem: the government, the Central Bank, the scheme, the operator, participants and indeed consumers.

- Make sure that the governance framework provides a balanced foundation for the service – one that fosters collaboration and innovation, but allows for rules to be prescribed where it is in the interest of the service.

- The business case for the RTP service also needs to work at multiple levels of the ecosystem to secure the necessary interest and buy-in from participants.

- Pay attention to the consumer facing brand and trust in the service. Performance of the service and the user experience is vital in building that trust, and it's a collective effort.

- Start with the end goal in mind – the end goal isn't the go-live of the service it's where you'd like the service to be in five and 10 years' time.

In this initial paper we've introduced several topics at a high level. Please do let us know if you found this paper useful and if there's demand for a deeper-dive paper on any of these areas.

Lastly if you would like to discuss any of the topics raised in this whitepaper, or to discuss real-time payments more broadly please reach out to the authors.

Robert Moore
vice president strategic development, real-time payments
robert.moore@mastercard.com

Susan Hall
vice president product management, real-time payments
susan.hall@mastercard.com
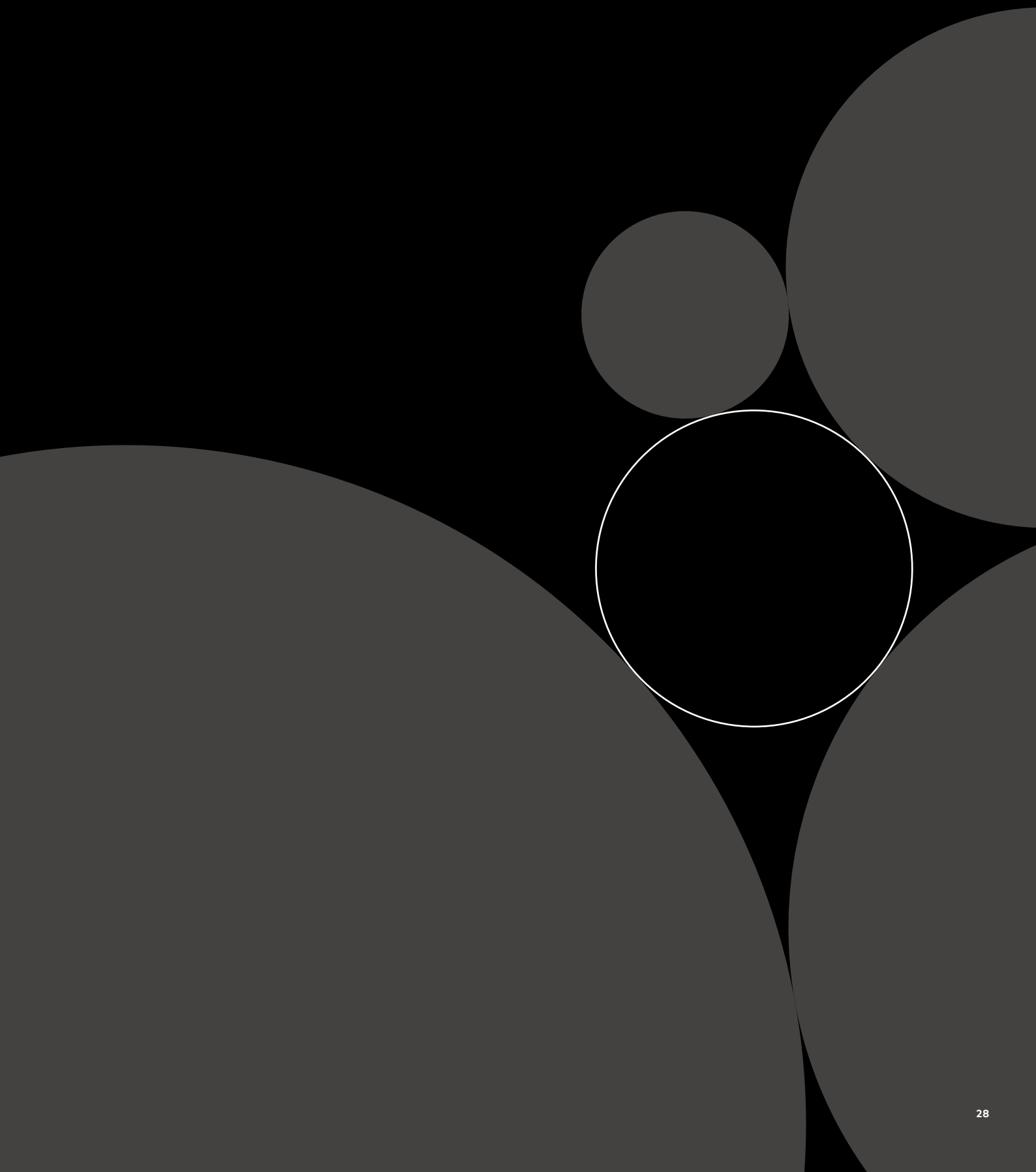
Appendix

Appendix A: World Bank key learnings

Table 1: Key learnings

Project conceptualization stage

1. Have clarity on the objective, including motivations/drivers for developing fast payment services in their jurisdiction.

2. Obtain knowledge of fast payment arrangements in other jurisdictions, including the key features of their operating models and service offerings.

3. As part of the design, focus on establishing a core platform and associated services on top of which other stakeholders can innovate and build further services.

4. Underpin the business case with a clear vision of the role for the fast payment arrangement in terms of use cases and services it can offer to PSPs and the market in general. This is critical for developing a credible business plan and garnering industry support.

5. Develop a plan for investing in infrastructure and recovering cost over a period of time and avoid focusing on achieving profitability in the short run. The central bank should work together with stakeholders to identify the long-term benefits of the project (direct and indirect) and the broader long-term interests of the NPS.

6. Develop a good understanding of the infrastructure available in the broader ecosystem (for example, phone and communication network penetration) to determine which user needs and expectations the fast payment arrangement will be able to meet at launch and in its early stages of development.

7. Give due regard to the existing payments infrastructure setup, including such aspects as current familiarity with real- time payments, instruments available (for example, push and pull), NPS integration, support of use cases, settlement models, the accounting practices applicable to payments, and other banking activities operating 24 hours a day, 7 days a week, among others.

8. Study the existing internal infrastructure of banks and other potential PSPs and assess their ability to achieve immediate fund transfers with certainty. Jurisdictions could consider agreeing on minimum criteria for participation up front, in a way that ensures that at least the major banks and some other smaller banks and non-bank PSPs can be ready to join by the predecided "go-live" date.

Project design and implementation stage

9. Assign a top-notch project-management team. The relevant stakeholders should also identify personnel with experience and competency and assign them the responsibility of project development and implementation. They should also be made duly accountable for the project. Ensure continuity of the people/team assigned to this task to avoid delays in implementation.

10. Ensure structured planning and implementation to help mitigate implementation delays, including those related to stakeholder onboarding. It is essential to give participants sufficient time to adapt—that is, for contract negotiation, internal system development and implementation.

11. Going live with a basic service—with limited features—can be a good strategy to get the ball rolling. The design of the fast payment arrangement should nevertheless be flexible enough to accommodate multiple use cases/services based on dynamic market needs (that is, the "plug and play" approach).

12. Consider user experience as a critical factor that needs to be kept in mind while designing and developing a fast payment arrangement. Focus should be placed on providing a seamless experience across all access channels. The elements that help enhance the customer experience include the use of aliases and services provided by third parties (for example, payment initiation).

13. Design and implement a strong governance framework for the fast payment arrangement. All participants (banks and non-banks) should be represented and have a say in the decision-making. The voices of external key parties, such as fintechs and telcos, also need to be heard and given due consideration.

16. Ensure fair, transparent and risk-based access criteria that do not preclude membership based on institution type. This is critical to foster innovation and ongoing competition in the payment ecosystem, recognizing, though, many smaller and mid-sized PSPs may opt for indirect participation, given the financial and technical requirements for direct participation.

17. Consider using APIs that have proven most useful for the connectivity of smaller participants and of other third parties (for example, entities that provide payment-initiation services), and to foster standardization of APIs in the payments market.

18. Ensure that the pricing scheme(s) for participants promotes quick participant adoption. The joining fee, fixed fees (if any) and variable fees should not act as barriers for smaller players. At the same time, the operator should ensure sustainability in the medium- to long-term timeframe.

19. Ensure that pricing policies for end users foster uptake in the short term, for which public authorities may encourage participants to offer fast payments as a low-cost (or even zero-cost) payment service. However, in the medium term, this will need to be reconsidered to ensure that participants have an incentive to introduce additional services and features.

20. Give due attention to the type of messaging standard adopted. The decision to adopt a particular message standard—proprietary or ISO—should be based on a careful analysis of the costs and benefits and factor in the need to facilitate the interoperability of domestic payment systems and, eventually, to enable cross-border payments. While other possibilities exist, ISO 20022 is emerging as a leading messaging standard for fast payments.

14. Undertake comprehensive testing before launch (operator and participants). A fully functional central testing platform for intra- and inter-participant testing can help identify issues early in the implementation phase.

15. Have a comprehensive rulebook that contains all relevant rules, parameters, standards, and controls for the operational efficiency and overall soundness of the fast payment arrangement. This also promotes a level playing field for participants.

21. Establish a clear, documented, effective risk-management framework to identify, measure, monitor and manage the various risks, including those concerning potential criminal activity (for example, money laundering, the financing of terrorism, cyberattacks, and data breaches). Participants should also be mandated by their supervisor to set up robust internal controls for operational risks.

22. Agree on the settlement model and measures for the mitigation of settlement risk between operators/ manager and operator/manager and participants. The measures should be cost efficient. Key decision factors include whether non-banks will be direct participants (for example, settling operations on their own behalf) and the specifics of the local ecosystem (for example, settlement services provided by the central bank or commercial banks).

Project "Go-live" and post-implementation stage

23. Collaborate during post-implementation to ensure that the fast payment arrangement will be able to reach its maximum potential over time.

24. Generate customer awareness in the initial years to increase registrations and uptake. Customers often require handholding to familiarize themselves with the new service and its functionalities.

25. Keep the customer registration process simple to increase uptake.

26. Adopt a product road map approach for new use cases/ services and functionalities that shares the vision of the owner/operator with all participants (and other relevant stakeholders, such as telcos), ensuring that these stakeholders will be able to adopt these changes in a timely manner.

27. Review risk-management frameworks periodically to mitigate evolving requirements and threats, including cyber. Technologies such as artificial intelligence and machine learning can help operators/managers detect failures in compliance and combat evolving threats.

28. Adapt some of the oversight tools and overall approach when it comes to fast payments, to ensure that the relevant systems or underlying arrangements operate safely and efficiently on an ongoing basis (applicable for regulators/ overseers).

29. Leverage payments data to introduce innovative and customized solutions for end users (for system operators and system participants) without compromising data-protection and privacy aspects.

30. Evaluate on an ongoing basis whether the system continues to meet the evolving ecosystem needs; fosters the safety, efficiency, and reliability of the NPS; and has the right governance arrangements. Take appropriate actions based on the evaluation.

Glossary and acronyms

Automated clearing house	ACH
Asian Institute of Management	AIM
Association of South East Asian Nations	ASEAN
Bangko Sentral ng Pilipinas	BSP
Compound annual growth rate	CAGR
Corona virus disease 19	COVID-19
Clearing switch operator	CSO
Electronic money issuers	EMI
Immediate Payments Service	IPS
Payments by the Government	G2P
Gross domestic product	GDP
National Rail Payments System	NRPS
Overseas Filipino workers	OFW
Person-to-business	P2B
Person-to-merchant	P2M
Person-to-person	P2P
Philippine Payment and Settlement System	PhilPaSS
Point of sale	POS
Philippine Payments Management, Inc.	PPMI
Payment System Management Body	PSMB
Quick response Philippines	QR Ph
Real-Time Gross Settlement	RTGS
Real-time payments	RTP
User Experience	UX

1. Referred to for the rest of the document as 'the World Bank report'
2. In the Philippines the ACH role is akin to the concept of a 'scheme
3. Real-Time Payments Market Size, Share & Trends Analysis Report By Enterprise Size (Large, SME), By Payment Type (P2B, P2P), By End-use Industry, By Component, By Deployment, And Segment Forecasts, 2022 – 2030 (Real-Time Payments Market Share Report, 2022-2030 (grandviewresearch.com))
4. ACI Worldwide and GlobalData, 'Prime Time for Real Time Global Payment Report' Prime Time for Real-Time Global Payments Report | ACI Worldwide
5. Smartphones, mobile phones with more advanced computing capabilities and connectivity than regular mobile phones, came onto the consumer market in the late 90s. Globally in 2022 there were 6.6 billion smartphones, meaning 83% of the world's population owns a smartphone. This figure is up considerably from 2016, when there were only 3.7 billion users, 49% of that year's global population (https://www.bankmycell.com/blog/how-many-phones-are-in-the-world)
6. AI applications will penetrate the entire spectrum of financial industry operations across front, middle, and back offices, which will help unlock the hitherto untapped potential of ecosystem-based financing, in which banks, insurers and other financial services firms partner with non-financial players to facilitate seamless customer experiences in areas outside their traditional remit (Seven technologies shaping the future of fintech | McKinsey)
7. IoT is increasingly being deployed by financial service providers, for example in retail and corporate banking there are tailored products, chat boxes for client service, credit underwriting and scoring etc. (Artificial Intelligence, Machine Learning and Big Data in Finance: Opportunities, Challenges, and Implications for Policy Makers (oecd.org))
8. Why real-time payments are the future of money movement - Insights | FIS (fisglobal.com)
9. Collateralized clearing is where the central bank holds funds equal to each clearing member's total potential exposure
10. How Cashless Payments Help Economies Grow (bcg.com)
11. https://empower1.fisglobal.com/rs/650-KGE-239/images/Flavors-of-Fast-Report_2020.pdf
12. Real-Time Payments Market Share Report, 2022-2030 (grandviewresearch.com)
13. P2B refers to monetary transactions between consumers and businesses
14. https://www.grandviewresearch.com/industry-analysis/real-time-payments-market
15. The Global Payments Report
16. A quick, simple explanation of real-time payments. - Insights | FIS (fisglobal.com)
17. Real-Time Payments Market Size, Share | 2022 - 27 | Industry Trends (mordorintelligence.com)
18. BancNet: Corporate Profile (bancnetonline.com)
19. https://www.bsp.gov.ph/PaymentAndSettlement/Instapay.pdf
20. Request to pay is used to generically describe functionality that effectively turns an RTP push-payment into a pull payment
21. Electronic Payments | Philippine Payments Management Inc. (philpayments.org.ph)
22. The World Bank report uses the term "fast payments" which it sees as being synonymous with "instant payments," "real-time payments," and "immediate payments". To maintain the integrity of the World Bank report the term "fast payments" is used when referring to the World Bank report
23. Resources | Fast Payment System (worldbank.org) Fast Payment Flagship_Final_Nov 1.pdf (worldbank.org)
24. https://fastpayments.worldbank.org/sites/default/files/2021-11/Fast%20Payment%20Flagship_Final_Nov%201.pdf
25. BSP Digital Payments Transformation Roadmap Report
26. https://www.betterthancash.org/explore-resources/state-of-digital-payments-in-the-philippines-highlights-report-2021-edition
27. Transactions where the payer and payee accounts are both held with the same institution
28. Participants is used throughout as the term for a payment service provider connected to the InstaPay service whether a bank or EMI/wallet.
29. https://www.bsp.gov.ph/Regulations/Issuances/2017/c980.pdf
30. https://www.bsp.gov.ph/Pages/PAYMENTS%20AND%20SETTLEMENTS/National%20Retail%20Payment%20System/The-Regulatory-Framework.aspx
31. From BSP circular 980 'Working Group: In the context of an ACH, it is a group organized for a specific payment stream under an ACH Participant Group. The ACH Working Group is responsible for drawing up, reviewing or revising the rules and agreements applicable to a specific ACH.'
32. User experience of the payments service via the participants' 'App' was almost unanimously seen as the single most important factor in the adoption of the service by consumers. We'll cover this in the last section of the paper.
33. For more insights into the use of proxy in Thailand, please see the story here
34. The user of sort code is limited to certain countries, including the Philippines. In other countries, there may be other extra information which can provide similar issues as with the sort code
35. https://www.bakermckenzie.com/en/insight/publications/2022/04/pppn-linkage
36. https://www.manilatimes.net/2022/02/15/news/ofw-remittances-hit-record-breaking-34b-in-2021-bsp/1833127#:~:text=OVERSEAS%20Filipino%20workers%20(OFWs)%20remitted,(BSP)%20reported%20on%20Tuesday
37. https://www.psr.org.uk/media/3dbln5tw/lipis-report-international-fraud-practices-msg_.pdf

Designed by Mastercard Creative Studio