



White paper

**Japan's Payments
Systems: Digitisation,
Globalisation &
Innovation**

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A Typical Payment Experience for Foreign Visitors to Japan

Japan has the highest level of cash usage among developed economies in the world¹. A visit to Tokyo can cause us to question the payment experiences we take for granted in countries such as China, Singapore, Australia and even the United States. Foreign credit cards often fail to swipe successfully and card chip payments are not utilised in Japan. Hotels will frequently manually key in card numbers. For a nation full of the most divine service and dining experiences this presents a major friction in the service experience. Withdrawing cash from an ATM with a foreign card will not work in most Japanese banks and the cash machines found inside 7-eleven are the best way to withdraw: these machines seem to accept every conceivable card on the planet through a highly English-friendly screen.

Tokyo 2020: a focal point for change

Japan is looking to change these experiences ahead of the Olympics in 2020 when visitors from around the world will arrive in Tokyo and Japan for a few weeks during July and August. Olympics Games, of course, are a precious promotion and economic opportunity for The Games hosts². Although this paper is not about the card industry in Japan it examines a related part of the payments industry: interbank clearing and settlements, cross-border payments and the globalisation of financial messaging standards. It explores the themes of payment convenience, global interoperability and digital innovation and how these trends are being experienced in the Japan payment industry.

Reimagining Japan's payments future

Japan has a history of transformative innovation, for example in process engineering in the manufacturing industry and information systems in financial technology. In payments, four decades ago, Japan was one of the first countries to offer its 120 million citizens and 6 million businesses electronic payments between banks. In recent years, much of this innovation is best characterised as incremental or maintenance-oriented change – smaller innovations designed to optimise performance or enhance technology. Today, however this is changing, and we are seeing a number of innovations that are likely to more significantly change the face of Japan's payments industry.

At the end of 2015 a little publicised paper (at least in the English payments press) was released outlining a broad program for change in Japan's payments industry and payment systems. This paper³, published through the Financial System Council, and the work of a highly experienced and qualified Japanese study group was the outcome of many months of meetings and consultation. More recently in March 2016 the Bank of Japan (BOJ) published a Payment and Settlement Systems Report, the first major update in many years⁴.

This report stated:

“On the demand side, commercial transactions have been expanding into different time zones as a result of internationalization in business activity. Lifestyles have diversified and new businesses, including e-commerce, have flourished. Against such background, an appetite for a variety of payment and settlement services is increasing. The services include efficient cash management of globally-active firms, ensuring settlement in the middle of the night and on holidays, and realizing cross-border settlement at a modest cost. On the supply side, in light of further progress in information technology, computers' ability to process information has continued to expand, and internet and mobile devices have been widely used around the world. Against such background, technology to be applied to payment and settlement services has advanced and new devices enabling the public to access those services have continued to grow.”

This article outlines some of the recent and planned changes for Japan's payment and settlement systems, changes that will impact the payment experience for Japanese citizens, Japanese businesses, and of hopefully, visitors to Japan during and around the Tokyo Olympic Games in 2020.

¹ As reported by Bank of International Settlements “Payment, clearing and settlement systems in Japan”.

² Bank of Japan (January 2016), “Economic Impact of the Tokyo 2020 Olympic Games”, http://www.boj.or.jp/en/research/brp/ron_2016/ron160121b.htm/.

³ Financial System Council (Dec 2015), “Report by the Working Group of Advancements in Payment Operations – Strategic Activity towards Advancements in Payments”.

⁴ Bank of Japan (March 2016), “Payment and Settlement Systems Report”

The Payments and Settlements Landscape in Japan

Japan's Payment and Settlement System Environment

Japan operates two major national payment infrastructures, or what are commonly referred to as payment and settlement systems. These are known as the Bank of Japan Financial Network System (or, BOJ-NET) and ZenginNet. These payment systems have been operating since 1988 and 1973 respectively. Collectively, they provide safe, secure, reliable and trusted interbank payments, such as credit transfers, for nearly all deposit holding institutions in Japan. BOJ-NET further provides settlement services for JGBs (or Japanese Government Bonds). Together, these systems make up the critical infrastructure of the world's third largest economy and allow consumers, businesses and government departments to make payments with each other through their banks. The systems broadly operate in a tiered structure. The BOJ-NET, provides real time gross settlement for large value payments between financial institutions. With over 500 participants this is one of the largest payment systems in the world. In 2015 BOJ-NET processed an average daily volume of 69,279 transactions, valued at 135.6 trillion yen (approximately USD 1.24 trillion)^{5, 6}. The second major payments between financial institutions. With over 500 participants this is one of the largest payment systems in the world. In 2015 BOJ-NET processed an average daily volume of 69,279 transactions, valued at 135.6 trillion yen (approximately USD 1.24 trillion)^{5, 6}. The second major payment settlement system, ZenginNet, is differentiated from the first in that it processes higher volumes of lower value transactions. ZenginNet on an average day in 2015 processed 6.4 million transactions with a value of JPY 12.2 trillion (approximately USD 112 billion).

To complete the picture SWIFT (Society for Worldwide Interbank Financial Telecommunication) on behalf of approximately 260 users in Japan, processed approximately 87 million payments messages in the year of 2015⁷.

	BOJ-NET	ZenginNet
Established	1988	1973
Number of participants	511	Over 500
Volume, 2015 (average number of transactions per day)	69,279	6,346,000 (excludes bulk file transactions)
Value (JPY)	135.6 trillion	12.2 trillion
Days of Operation	Monday to Friday	Monday to Friday
Hours of Operation	0830 to 2100	0830 to 1530
Currency	JPY	JPY

▲ Figure - Japan's major Payment & Settlement Systems

⁵ USD values converted at 1 JPY = 0.0091 USD.

⁶ Bank of Japan, Payment and Settlement System Department (Jan 29, 2016), "Payment and Settlement Statistics (December 2015)".

⁷ SWIFT statistics. Note: A further 125 million securities messages were exchanged over the SWIFT network.

BOJ-Net: constantly changing with more to come

Until 2001 BOJ-NET settled payments on a deferred basis, meaning that counterparty risk was carried until funds settled between the participant institutions. From 2001 it has been operating as a real time gross settlement system with transactions settled in central bank held accounts on an immediate basis with counterparty risk being removed entirely. October 2015 saw a major renewal of BOJ-NET introducing a new platform with flexible functionality and new information technology. Recent enhancements to BOJ-NET include:

Extending opening hours for regional and global market access

In February 2016 the operating hours of BOJ-NET were extended to 9pm. This change occurred after much consultation with Japan industry. Some other large high value payment systems operate for longer hours – a notable example is the Hong Kong RTGS system (CHATS) that operates its RMB payment service on a 20.5 hours a day (from 0900 to 0530) basis. In Japan's case the extended operating hours are designed to expand the commercial opportunities of Japanese financial institutions and the corporate customers they serve. For example, extended operating hours lets Japan payment systems serve many Asian markets that are still open. Further extending these hours might let Japan reach deeper into European time zones and potentially even North American markets. This is particularly important for JGBS, or Japanese Government bonds, but also for JPY-denominated cross-border customer transfers. Keeping payment systems open longer is not always easy and beyond the technology requirements of operating for longer hours support staff must be available at night – both in Bank of Japan itself, as well as at participating financial institutions (who must actively manage liquidity utilised in the system). The extended operating hours are a necessary requirement to provide broader global access to Japan payment systems through cross-border connections.

Adoption of global financial messaging standards

Another important consideration when operating payment systems that need to integrate across borders is that the financial messaging standards must follow global norms. Japan has for many years been utilising proprietary, and unique to Japan, financial messaging standards. Legacy formats lack the flexibility to adapt, lack the ability to support end-to-end Straight-Through Processing (STP) and lack the ability to integrate with Enterprise Resource Planning (ERP) systems. Over recent years capabilities for global messaging standards, specifically ISO 20022, have been steadily increasing in Japan. ISO 20022 messaging is in fact a response to the changing needs of the digital age, which increasingly are characterised by big, rich data. ISO 20022 provides rich and granular remittance information, and can also cater for different models of exchanging remittance information, either with the payment or outside the payment.

Globally, the uptake of ISO 20022 across major infrastructure initiatives is growing rapidly. SWIFT acts as the global Registration Authority (RA) for ISO 20022 standards and currently tracks over 200 major infrastructure initiatives around the world that have either implemented, or are planning to implement, ISO 20022 message standards. Of these, more than half are payments initiatives. Widespread adoption of ISO 20022 and the investment in messaging capabilities in its payments industry ecosystem is required for open payment systems that interoperate across borders.

ZenginNet – where is it heading?

ZenginNet as mentioned earlier has been operating since 1973 and has been through many enhancements over this time. Current renewal work plans seek to address one of its major constraints – the hours of operation. Today, ZenginNet only operates for 7 hours a day, 5 days a week. In future, ZenginNet plans to operate on a 24 hour a day, 7 day a week basis. Whilst many countries have taken the step of introducing new single national payment platforms and infrastructures to meet the needs of 24-7 payments and allow payments “anywhere, anyhow, anytime”, Japan has decided to build an adjacent system, i.e. operate two platforms for different times of the day. The “night-time/weekend” system is to be based on voluntary participation from a subset of the “day-time” system participants. This two-system architecture has the potential to present challenges for banks and customers as well as provide for scalable payment system innovation. Another consideration would be the requirement of making system enhancements on each of the two systems.

Global Trends – what developments are occurring “outside” Japan?

There are a number of major innovations occurring in payments around the world.

Real time payments: going faster and more

Payments are speeding up

Customers are increasingly expecting more of their payment service providers, a demand that matches the experience we have in almost everything we consume today. The global nature of payments and a digital anywhere-anytime-anyhow expectation mean that payments also need to be available on a 24 hour a day, 7 day a week, 365 days a year basis. This is being made possible through the availability of relatively inexpensive, ubiquitous and powerful processing technologies. In fact, around the world today there are at least 18 new national real time payment systems live with a further 12 under development or planning. If we include the instant payment change occurring in the Euro-zone there are a further 20 to 30 countries that will join this group⁸. Some estimates suggest the next 5 to 10 years will lead to a global marketplace of 75 countries running national real time interbank payment systems.

Beyond going faster with 24/7/365 availability there are four further features of modern real time retail payment systems: open access, simpler addressing, API-oriented architecture and intelligent messaging⁹.

Open Access: new participant profiles and crossing borders

Payments systems have traditionally been the domain of financial institutions and banks. Recent industry developments have seen progressive introduction of payment solutions by non-traditional financial institutions, sometimes known as third party payment companies (TPPs), or payment service providers (PSPs). Regulators and policy makers have been seeking ways to further include these services in national payment and settlement systems. Some notable examples include the United Kingdom, India and Europe's PSD2 initiative. In the UK the Payment System Regulator (PSR) wants “those who use payment systems to be able to access them on a fair, open and transparent basis and be able to choose the form of access that best suits them”¹⁰. In India, in August 2015 the Reserve Bank of India (RBI) provided “in principle” licenses to eleven entities to incorporate payment banks. Payment banks in India are envisaged to support payments being conducted by non-traditional financial institutions in an inclusive manner across India. In Europe a revised Payment Services Directive (known as PSD2) seeks to (amongst other objectives) improve competition in payment markets by opening the market to new entrants. This trend of broader access to payment systems can be expected to grow as new technology companies focus on the payments industry. Payment systems will further respond by finding ways to extend participation in the payment system and at the same time manage safety, security and reliability.

A second feature of open access is regional and global interoperability. To date, most payment systems tend to focus on their domestic environment and service local currency requirements. In the same way that payment card companies (such as Visa, MasterCard, Union Pay) operate across borders and manage multiple currencies, we can expect real time retail payment systems to seek ways to connect with each other across borders.

Simpler Addressing eases frictions with payments

Traditional payment systems have not always developed for the convenience of end customers such as citizens and companies. They rely on payment senders knowing the bank account number of payment receivers, and account numbers are typically hard to remember and complicated. This complexity has led to friction in the payment experience and has inhibited the move of markets towards less cash and cheque usage. Modern payment systems are solving this problem by introducing proxy addressing services. A centralised database provides a relationship between a customer, their bank account details and a unique proxy identifier such as email, or the mobile phone number of the customers. This means that when making a payment only the unique identifier such as the mobile phone number is required to “address” the payment, instead of the bank account number being used. In fact some countries are using or considering expanding these services to cater for Facebook ID's, National ID systems or companies through unique national Company identification schemes.

⁸ See the SWIFT White Paper “The Global Adoption of Real-Time Retail Payments Systems (RT-RPS)”.

⁹ See the SWIFT White Paper “Guidelines for the next generation of Real-Time Retail Payments Systems (RT-RPS)”.

¹⁰ See www.psr.org.uk.

APIs are the future glue between financial institutions and technology companies

An Application Programming Interface (API) is a digital framework that can be used for enabling better connectivity between third parties and financial institutions. Using APIs, financial technology companies can build more responsive products and services that can drive creativity and innovation. APIs rely on open-ness and collaboration between financial and technology companies and they have the potential to drive greater innovation outcomes in the financial services and payment industries.

Intelligent Payments through global financial messaging standards

ISO 20022 is being widely adopted in national retail payment and settlement systems. ISO 20022 is widely recognised as the global standard for financial messaging in the digital age. It covers all financial business domains, is not controlled by a single interest and is open to anyone in the industry. ISO 20022 is the agreed methodology used by the global financial industry to create consistent message standards across all business processes as it is information-rich, supports interoperability and harmonisation, accommodates both global standards and local usage, allows for easy data consumption and enables new services. For payments, ISO 20022 takes into account the end-to-end data requirements of various stakeholders, including corporations, vendors, banks and clearing and settlement systems.

Significant improvements in processing power mean that more information can be processed with payments and there are many global examples of markets establishing roadmaps for the introduction of ISO 20022 in national payment systems. For example, Payments New Zealand (PNZ) says that "ISO 20022 is an enabler to achieve a wider range of strategic outcomes and commercial opportunities. This is because it supports an intelligent payment system environment that can be information rich, digital, flexible, interoperable, operationally efficient, and innovative."¹¹

Revitalisation of crossborder payments

When we send a parcel around the world through a company like DHL or Fedex we can conveniently track the parcel end-to-end and know with a reasonable amount of certainty when the parcel will arrive. However, when we send a payment around the world the experience is rarely like that provided by DHL or Fedex: it can be highly unpredictable, can lack transparency, can be slow and sometimes expensive. In fact in Asia, payments can take many days to complete. End customers increasingly expect crossborder payment services to mimic the experience of other services, and regulation and policy in many countries is requiring payments to speed up domestically, increasing the expectation of faster payment outcomes across borders. At the same time the global regulatory and compliance environment has become increasingly complex and banks have been rationalising their correspondent banking networks, a process known as de-risking.

At SWIFT, a global payments innovation initiative (GPii) was launched in December 2015, and is expected to dramatically improve the customer experience in correspondent banking by increasing the speed, transparency and predictability of cross-border payments. Designed in collaboration with the industry, the initiative will initially focus on corporate payments services supported by participating banks. To date, in Japan four Japanese banks have joined over 50 other global financial institutions in the SWIFT global payment innovation initiative (gpil).¹²

By offering distinctive payments services, banks will be able to retain and attract new customers and demonstrate leadership in global payments innovation. Moving forward and with the introduction of additional innovations, banks could expect to realise additional savings from enhanced compliance practices, optimised intraday liquidity flows and increased payments straight-through-processing.

Corporate customers will be able to manage their cash positions more efficiently, improve supplier and customer relationships, save costs and resources on payment investigations, and ultimately grow their international business. The new service will help corporates grow their international business, improve supplier relationships, and achieve greater treasury efficiencies. Corporates will receive an enhanced payments service directly from their banks, with the key features such as same day use of funds; transparency and predictability of fees; end-to-end payments tracking and transfer of rich payment information.

Financial messaging for the digital age: the ISO 20022 standard

One of the most prominent growth areas in ISO 20022 messaging is use of the standard together with extended remittance information. The exchange of more remittance information together with payments provides the opportunity to realise new sources of value for customers in payments and to provide savings for automated reconciliation of incoming payments with invoices. A number of major initiatives have been occurring around the world in ISO 20022 to manage extended remittance information (ERI). ERI broadly follows three main approaches. The first involves full remittance information carried with the payment through the entire processing chain from payment initiation to final recognition at the end user. The second involves the structured remittance information separated from the payment details and delivered as a separate message. The last approach separates the structured remittance information from the payment details, and provides it as a reference to a separate data repository with a unique ID¹³.

¹¹ Payments New Zealand, March 2015, "Re-mastering Payments Messaging: A Study of New Zealand's strategic opportunity to adopt the ISO 20022 payments messaging standard". See other prominent examples of ISO 20022 implementation programs in Canada, Australia, and the United States.

¹² For more on the global payment innovation initiative (gpil) please visit swift.com/gpil.

¹³ See for example the Information Paper "Adoption of ISO 20022 for Payments and Extended Remittance Information in Canada" co-authored by SWIFT and the Canadian Payments Association (CPA).

SEPA, or the Single European Payments Area, supports the end-to-end carrying of optional remittance data in a structured or unstructured format. In the United States, The Fedwire System and CHIPS introduced enhanced messaging layouts including remittance elements. CGI, or the Common Global Implementation (CGI) Initiative seeks to agree on a common implementation of the ISO 20022 standard in the corporate to bank payment cycle. And at SWIFT, the SWIFT for Corporates (SCORE) initiative harmonises the implementation approach for large corporates implementing ISO 20022 payments. SCORE aligns with CGI for both payments and additional remittance elements.

In the United States, The Federal Reserve Banks' Fedwire Funds Service and The Clearing House's CHIPS funds-transfer system will adopt ISO 20022 for their payments clearing and settlement for their systems. This will cover both domestic and cross-border wire payments, as well as all inputs and outputs from their wire transfer systems and enhancements to their existing wire transfer services.

FinTech and Digital Disruption

New financial technologies are being explored, developed and deployed around the world. Investments have increased rapidly in non-traditional financial technologies. Highlighting the significance of this trend Accenture recently reported that "Venture capitalists, private equity firms, corporates and a number of other players have poured an unprecedented amount of money into global financial technology (FinTech) start-ups. More than \$50 billion has been invested in almost 2,500 companies since 2010 as these innovators redefine the way in which we store, save, borrow, invest, move, spend and protect money"¹⁴. The report further claims that the value of global fintech investment in 2015 grew by 75% to \$22.3 billion, driven by deal-flow across continental Europe and Asia-Pacific."

New technology entrants are seeing opportunities to innovate in the payments sector and there are a number of examples of new technologies and business models. An example of such a technology is the Distributed Ledger Technology (DLT) or block chain which relies on decentralised processing of transactions. In fact many institutions around the world, including SWIFT, are evaluating the role of this technology in payments and other transaction contexts¹⁵.

Around the world there is unprecedented interest in FinTech from both private sector and public sector circles. Regulators and central banks across the world are evaluating their responses to FinTech and its role in fostering innovation and driving economic competitiveness and growth. In the case of Singapore, the Monetary Authority of Singapore (MAS) in collaboration with the National Research Foundation (NRF) is seeking to nurture a wider financial technology ecosystem. This follows the MAS commitment in 2015 to invest \$225 million to support financial sector technology and innovation. MAS anticipate a sandbox approach where ideas and innovations are tested and then released in the marketplace.

In Japan, the Bank of Japan has established its own FinTech centre within the Bank of Japan's payment division. Governor Kuroda of Bank of Japan on April 1 stated "The Bank will also endeavour to play an active role as a catalyst for promoting interaction among financial practices and innovative technologies, research and study, and the needs of the economic society"¹⁶.

Resiliency threats to payment systems are increasing

As critical financial market infrastructure, payment and settlement systems require uninterrupted provision of services and high levels of resiliency. As the systemic importance of RTGS systems has increased, so has the risk that their integrity and security will

be compromised. These threats include the familiar challenges of natural disasters, loss of essential services, data corruption, cyber-attacks, unavailability of staff, component malfunction, terrorism and war. Although none of the threats they face are entirely new their potential to disrupt vital payment services, and their probability of occurrence, have increased significantly in recent years.

In large countries every RTGS system is supported by a complete back-up site, mostly run on so-called "hotstandby mode" enabling it to capture transaction information continuously and take over functions immediately in the event that primary payment services are disrupted. The characteristics of a truly effective resiliency plan therefore include a rapid cut-over to the new service; a geographically remote facility; reduced reliance on local staff; technical diversity; independent data storage; the availability of the service throughout the period of disruption; and, most importantly of all, the ability to capture a clear view of the intra-day balances at the point of failure, or to recreate it rapidly once the primary and secondary sites have failed.

SWIFT, together with a group of central banks around the world has designed a shared RTGS system back-up service (a third site) known as the Market Infrastructure Resiliency Service (MIRS). The service makes use of SWIFT technical platforms, storage facilities and messaging formats to capture transaction balances continuously, and so guarantee the ability for the operator to resume services with their RTGS participants within no more than 2.5 hours. The service can operate for as long as a disruption persists, whether this is a matter of days, weeks or months. The Bank of England CHAPS RTGS system uses this service as a third level of resiliency in its payment system resiliency approach.

¹⁴ Accenture (2016), "Fintech and the evolving landscape: landing points for the industry".

¹⁵ SWIFT & Accenture (April 2016), "SWIFT on distributed ledger technologies: Delivering an industry-standard platform through community collaboration".

¹⁶ Message from Governor Kuroda on the occasion of the establishment of the FinTech Center , <http://www.boj.or.jp/en/paym/fintech/message.htm>.

Key features of Japan's Payment System Modernisation Journey

A number of recent government driven proposals have been made in Japan related to payment system and industry modernisation, and wider payment ecosystem improvements. The proposals are an indication of structural transformation in the Japan payments industry from a closed and bank-centric structure to one that values openness, innovation and increasing roles of parties external to the traditional banking sector¹⁷. The following is a summary of some of the major initiatives recently implemented or planned for introduction to Japan payment systems.

Settlement innovation: extending operating hours further

The Bank of Japan recently increased the opening hours of BOJ-NET to 9pm and ZenginNet will extend operating hours of Japan payment systems by introducing 24/7/365 real time interbank payment services. These improvements together mean broader access to Japan's payment systems. In the high value payment context the BOJ-NET will be accessible in other time zones, and with ZenginNet citizens will have access to real-time payments outside of normal banking hours, for example in the evenings and on weekends. Broader payment system access should facilitate Japan's move towards a society which is less cashbased. The Bank of Japan is actively considering further extension of the BOJNet operating hours.

Opening access to Japan payment systems

The extended operating hours of Japan's payment systems are a pre-requisite for greater regional and global access when operating across different time zones. Japan has further recognised the need to open access to Japan's payment systems and promote linkages across borders such as for processing Japan Government Bond (JGB) settlements. Additionally, Japan is an active participant in regional integration initiatives such as those occurring in the ASEAN region, where future interoperability and interconnectivity is considered a necessity.

Adopting ISO 20022 Messaging standards

Japan's financial industry widely recognises the benefits of international financial messaging standards and has been ensuring payment systems have the technical capability to process ISO 20022. There are a number of major contexts in which ISO 20022 standards are prioritised for adoption.

ZenginNet Migration to ISO 20022

ZenginNet from 2018 is planning to commence having member banks use ISO 20022 messaging standards and from 2020 the old formats are expected to be discontinued.

Electronic Data Interchange (EDI)

Electronic Data Interchange (EDI) is expected to improve efficiencies in cash management for companies with global footprints. Japan has trialed and piloted methods for adopting and managing extended remittance information and found that corporates mostly see some value in the information in corporate (business-to-business, B2B) payments to improve efficiencies for companies operating globally. Continued support for the adoption of EDI with extended remittance is required as is the promotion of an environment conducive to developing the capabilities required to fully realise the potential of big data. Financial institutions need to continually seek business cases that exploit value created through introducing new information and reconciliation services to corporates.

Unification of Domestic and International Payment environments

Domestic and international payment messaging formats are expected to be standardised, meaning that international standards where practical will be adopted for domestic formats.

Provide a greater role for FinTech

The Governor of the Bank of Japan Mr Haruhiko Kuroda on April 1 announced the establishment of a FinTech Centre within its Payment and Settlement Systems Department. In the words of the Governor:

"In order to bring new products and services to life, the interaction of knowledge and creativity is extremely important. To foster FinTech and maximize its contribution to the economy as a whole, constructive and interactive communication among a wide range of players, including those affiliated with traditional finance industry and academic community, is required."¹⁸

The Bank will play a role as a catalyst for promoting interaction amongst various stakeholders within financial technology as well as facilitating research and study.

¹⁷ See for example the Payment and Settlement Systems Report (March 2016), or the work of the Japan Financial System Council (2015).

¹⁸ Message from Governor Kuroda on the occasion of the establishment of the FinTech Center, BOJ website: <http://www.boj.or.jp/en/paym/fintech/message.htm/>.

What more can be done in Japan? Suggestions for Japan Payment system development

Although many recent improvements have been made to Japan's payment systems, and more are planned, legacy challenges remain. In summary, the following considerations for further development of Japan's payment systems are offered.

Consider an open, singular and innovation-oriented ZenginNet system

A major renewal of ZenginNet is underway. In this renewal ZenginNet will become a 24/7/365 system. This is a much needed development to expand the use of the ZenginNet system in evenings and on weekends and will be achieved through the introduction of a separate system to serve evening and weekend timeframes. There are a number of challenges in this approach.

Firstly, the architecture decision of two separate systems may pose some unique problems. For example, how will a sending bank know whether a receiving bank is processing payments during all hours of the day, or only during traditional banking hours? And more importantly, how will the service be explained and promoted to customers? Secondly, two parallel platforms might slow down the introduction of new services because a change to one system might also require change in the other system. As the work may require to be done twice this may slow down overall future development of the system. Thirdly, many retail payment systems are orienting their platforms to architectures that foster flexible innovation and open connectivity models (such as the use of API services). A prominent example globally is the introduction of simpler addressing services allowing convenient access methods to customers through digital channels such as mobile and online and thereby reducing the reliance on paper-based transaction forms such as cash and cheque.

Continue to evolve and enhance BOJ-NET crossborder access

Much has been achieved in the modernisation of the BOJ-NET system such as the extension of operating hours to 9pm in early 2016. Opportunities may exist to further extend operating hours and support processing of cross-border payments well beyond Asia, such as in Europe or even the United States.

Fully utilising ISO 20022 will prepare Japanese financial institutions for greater regional inter-linkages. In March 2016 the Bank of Japan announced the establishment of three working groups designed to discuss practical issues regarding more effective use of the BOJNET, including further possible extension of the operating hours for support of crossborder use cases. The three working groups are designed to focus on respectively, cross border use of Yen and JGB's; customer and bank transfer during evenings; and crossborder settlement infrastructures.

Foster partnerships when regionalising and globalising

As the world's third largest economy, exploiting cross-border payment opportunities can improve the competitiveness of Japanese companies in their trade settlement and payment processes. Opening Japan payment systems across borders will likely require collaboration and partnerships between local, regional and global stakeholders. For example, extending the role of Japan in various initiatives in APAC, the ASEAN region and other global payments markets will benefit from open collaboration with entities outside Japan and the utilisation in Japan of global expertise and best practices.

Suggestions for Japan Payment system development

- Consider an open, singular and innovation-oriented ZenginNet system
- Continue to evolve and enhance BOJ-NET cross-border access
- Foster partnerships when regionalising and globalising
- Harmonise local Japan financial messaging standards to global standards
- Further embrace FinTech to realise digital age opportunities
- Ensure Payment System Resiliency

Harmonise local Japan financial messaging standards to global standards

Japan's financial messaging requires standardising local payment messaging formats to global standards, meaning that where-ever practical international formats should be adopted for domestic practices. A key focus for ISO 20022 standards going forward must be to ensure wide industry adoption and usage. This will ensure the full benefits of ISO 20022 are realised in the Japan marketplace in individual, company and government payment use cases. Most markets achieve this through the development of a national standards roadmap which articulates the rationale and sequence for introducing ISO 20022 standards across payment systems and also within the institutions that process financial messages using these standards. In Japan this may also include a review of the use of international bank identification standards (such as SWIFT BIC) and the introduction of international bank account standards (known as IBAN).

Further embrace FinTech to realise digital age opportunities

It is widely recognised that we live in a digital age. Japan too has begun to plan for the changes and opportunity afforded by new financial technologies. For example, there is a massive global repositioning of technology towards mobile phones and other digital devices.

Furthermore, open API-oriented architecture will be critical for Japan to fully embrace this digital opportunity. The community of FinTech companies and new entrants will likely play a large role collaborating with financial institutions together with the guidance and support of policy-makers and regulators such as the Bank of Japan. Speed, security, new business models, global reach and emerging technologies are all important factors in successfully embracing the opportunity of new financial technologies in Japan's payments industry.

Ensure Payment System Resiliency

The range of threats to safe, reliable, secure and efficient payment system management and operations have increased in recent years. In Japan, the effects of the 2011 earthquake were significant and are long-lasting. Cyber threats globally are more frequent and more sophisticated. Industry wide plans to improve resiliency of the banking industry and payment system infrastructure are essential in Japan. Resiliency plans should cover at least three domains: central financial market infrastructures (for example, payment and settlement systems); financial institutions; and the critical service providers such as payment and telecommunication networks.

Contact

Yuji Takei, Country Manager, SWIFT Japan
yuji.takei@swift.com

Michael Moon, Head of Payments Markets,
Asia Pacific michael.moon@swift.com

Conclusion

With all these ongoing changes, the Japanese payments ecosystem is at a pivotal moment in its further modernisation and innovation journey. A number of recent government driven proposals have been made in Japan related to payment system and industry modernisation, and wider payment ecosystem improvements. The proposals consistently emphasise a need for structural transformation in the Japan payments industry from a closed and bank-centric structure to one that values openness, innovation and increasing roles of parties external to the traditional banking sector.

The Tokyo Olympics is a focal point for the evolution of many of Japan's industries and this rightly includes financial services and payments. The efficiency and competitiveness of Japan's economy and global businesses will benefit from the realisation of many of the initiatives discussed in this paper. Doing so will help Japanese industry and citizens, and also ensure that the many millions of visitors to Japan over coming years will experience seamless payment processes and drive tourism spending in Japan.



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