INNOVATIONS IN INTERNATIONAL PAYMENTS

Eva Jančíková[200]
Stanislava Veselovská[201]

https://doi.org/10.31410/itema.2018.526

Abstract: *The banking industry is under permanent pressure for innovation of banking services and banking products. In 2014 all members of Eurozone implemented new payment system developed under Single Euro Payment Area project (SEPA). SEPA project harmonizes the way euro payments are made across Europe. In 2016 other member states of European Union joined this platform. SEPA allows consumers, businesses and public administrations to make and receive credit transfers, direct debit payments and credit cards under the same basic conditions. SEPA credit transfer is realized in one banking day. The non-banking competition in payments pressed banks to go further and the result was the implementation of first SEPA instant payment in 2017 realized in max. 10 seconds. The Society for Worldwide Interbank Telecommunication (SWIFT), which is one of the most important institutions accelerated innovations in international payments, offers a new cross border payment system known as SWIFT global payments innovation (SWIFT gpi). The aim of this paper is to define innovations in payments, especially: SEPA instant payment and SWIFT gpi. To achieve this aim we are using qualitative methods such as analysis, synthesis and comparison.*

Keywords: *SWIFT gpi, SEPA instant payment*, *Application Programming Interfaces, Distributed Ledger Technology, Artificial Intelligence in Payments, Ripple X-Current*

1. Introductions

The banking industry is under permanent pressure for innovation of banking services and banking products. According to World Payments Report 2018 during 2015-2016, global non-cash transaction volume grew at 10,1% to reach 482,6 billion [5]. We have to agree with Chris Hamilton, Group CEO, BankservAfrica that without a developed payment system we cannot have a developed economy. Wealth and prosperity depend upon digitalized payments systems in the modern world. [5] Bruno Mellado, head of international payments and receivables at BNP Paribas stated that the whole market infrastructure worldwide is moving to real-time payments and taking away the paradigm of end-of-days and validations as things would be working 24/7. [5]

Together with digitization and the development of new technologies, they are creating new opportunities for entrepreneurship in a volatile, uncertain, resulting into revolution of demand and supply in the field of energy supply side, which requires an adequate transformation of existing business models. [16] Technological innovation: Smartphone adoption has reached 70% in developed countries, while in various developing countries phones are often replacing cash and wallets. [15] Payments providers are regularly popping up due to catalysts like social platforms; nearfield communication (NFC) based payments and digital currencies. New players

[200] University of Economics in Bratislava, Faculty of International Relations, Dolnozemská cesta 1, 852 35 Bratislava 5, Slovakia
[201] Pan-European university, Faculty of Economics, Tematinska 10, 851 05 Bratislava 5, Slovakia

and business models: while the traditional financial industry once controlled the world of payments, new start-ups, spin-offs, and partnerships are introducing new options for the payments sector. In the last few years numerous new FinTech startups have launched with a focus on mobile payments. [4] The focus tends to be on new services, for instance, security with fraud detection and authentication, improved customer experience or making funds available quickly to small businesses when their line of credit is approved. Nowadays, the secure development has become a real and urgent matter in many countries around the world [11]. The next step for these organizations may be determining whether real-time payment becomes a core business element and way to design an operating model to help optimize that service delivery [7].

In 2014 all members of Eurozone implemented new payment system developed under Single Euro Payment Area project (SEPA). SEPA project harmonizes the way euro payment are made across Europe. In 2016 other member states of European Union joined this platform. SEPA allows consumers, businesses and public administrations to make and receive the credit transfers, direct debit payments and credit cards under the same basic conditions. SEPA credit transfer is realized in one banking day. The non-banking competition in payments pressed banks to go further and the result was the implementation of first SEPA instant payment in 2017, realized in max. 10 seconds. The Society for Wordwide Interbank Telecommunication (SWIFT) which is one of the most important institutions accelerated innovations in international payments, offers a new cross border payment system known as SWIFT global payments innovation (SWIFT gpi). The aim of this paper is to define innovations in payments especially: SEPA instant payment and SWIFT gpi. To achieve this aim we are using qualitative methods such as analysis, synthesis and comparison.

2. INNOVATIONS IN PAYMENTS

Over the past decade, we have seen huge changes in technology and business models. New payment platforms and solutions, updated regulations dealing with efficiency and security of payments can - most notably - have higher expectations from traders and consumers. The introduction of low-value instant payment systems in multiple countries will lead to significant changes in how businesses and consumers send and receive payments. We can expect that by more countries developing instant payment solutions, instant payment will be present in all major markets by 2020. Countries with instant payment solutions will evolve to enable both “push” and “pull” instant transaction types. Value limits will increase as banks become more comfortable with fraud and sanctions controls. Value added services will be built on the top of Instant Payment schemes. In future payment traffic will migrate from traditional Wires and ACH/Low-Value Instruments and payment traffic will also migrate from card schemes to instant payments. [6]

Table 1: The Tipping Point for Real-Time Payments

MERCHANT/CUSTOMER EXPECTATIONS	– Get real-time payments – Better us of cash flow – Reduce fraud – Improved and integrated client payment experience – Aid with acceptance – No late fees if same day payment – Low-fee transfers
REGULATORY PRESSURE	– Regulatory mandates

	– Central Bank mandate – AML – To move away from Cash/Checks
NEW PLAYERS AND BUSINESS MODELS	– FinTech start-ups delivering capability – New remittance player – clearXchange – Social platforms
TECHNOLOGY INNOVATION	– Smartphone adoption – Multiple P2P apps – Pay via social tools – Multiple ACH windows – Real-time settlement – Digital currencies – Biometrics
GLOBALISATION	– Need to connect across countries – Pressures from other countries adopting

Source: Deloite: Real-time payments are changing the reality of payments [7]

There are many different market solutions to enable faster payments. We can expect that banks will be scattered by these developments, if they do not consider their customers` needs. Efficient organizations in financial sector start with customers` needs and develop value propositions that are clearly differentiated against competitors, and then put in place the infrastructure needed to support those value propositions.

Many of the innovations refer to a more open and transparent network. However, this can lead to issues around anti-money laundering (AML) and cyber security. In addition, many payment providers are not being as careful as they should with KYC (Know Your Customer) checks, as we have seen in some recent high-profile AML cases. Payment providers with high levels of AML compliance have less chance of incurring a penalty from the regulators.

3. SEPA INSTANT PAYMENTS

One of the most important payment projects of the new century is the SEPA project, an initiative of the European banking industry managed by the European Payments Council (EPC). The aim of SEPA was to eliminate the differences in the ways of realization of domestic and cross-border bulk payment transactions within the Automated Clearing House (ACH), in order to increase efficiency and to reduce costs for all parties involved. The greatest benefit of this European project is the implementation of a new payments landscape to be able to realize cross border retail payments at the same time and price conditions as domestic ones, and even more important is the standardization possibilities. [10]

SEPA also introduced some changes in banking systems: banks had to change their national codes and account numbers for new standards - IBAN (International Bank Account Number) and BIC (Bank Identification Codes). This change represented the biggest challenge for banks within SEPA, as they were using previously different codes for bank accounts in member states. First discussions on the introduction of SEPA mainly focused on the benefits that SEPA would bring in retail payments to consumers, retailers and banks. In recent years, the globalization reached such an importance that currently multinational and transnational companies are able to benefit from SEPA the most. Before implementing the SEPA instruments most corporations

had to maintain multiply bank accounts, often one for each country of operations. After the introduction of SEPA every business can - theoretically - be able to run one treasure operation with one bank for the whole Europe. Eradicating the need for multiply resources, currencies, languages, banks and financial managers generate significant savings. Billions of euro's can be saved through improvements to treasury operations through the automation of account payables and receivables, which encourage corporations and their banks to focus on releasing much greater efficiencies through "supply chain automations". [19]

This brings additional strategic opportunities in the segment of large companies that enhance the current trends of centralization, standardization and automation resulting in cost reduction on the one hand and in improving risk control on the other. In particular, centralization goes about creating a centralized financial management (treasury), payment factory and in-house bank, which also brings billions of savings. Automation is associated with the introduction of new interfaces in information technology, with further dematerialization of paper and direct treatment. In the area of standardization SWIFT continues to play an important role - offering large companies new ways to communicate. To advance the goals of centralization helps SEPA payments that the company is able to reduce the number of accounts needed within the EU and to facilitate the centralization of liquidity. The automation simplifies data reconciliation and uses the new data elements. There are also simpler system configurations at hand, thanks to the elimination of domestic formats. Corporates are able to harmonize and use one database format (XML) for the whole Europe. [10]

The next step in SEPA was identified by European Central Bank (ECB) in November 2016 – the need for a pan-European euro instant payment solution. The most relevant features of the SEPA Instant Credit Transfer Scheme, launched one year later in November 2017, is the immediacy – the funds will be available in less than ten seconds after the transfer is initiated. Another important feature is the fact that the scheme will be open and accessible to users and service providers 24 hours a day, 7 days a week. These two main features, immediacy and accessibility, are the ones that best describe the scheme. Any bank or PSP (Payment Service Provider) can adhere to this scheme. Initially, the SEPA Instant Credit Transfer scheme was implemented in eight European countries: Austria, Estonia, Germany, Italy, Latvia, Netherlands and Spain. PSPs from Finland, Belgium, Malta, Portugal and Sweden will also be ready in 2018. [18]

Instant payments can be extremely useful in a number of situations, for instance, to urgently send money to a relative living abroad. But what is even more important, instant payment can be an excellent substitute for cash. They are also very convenient when paying for goods or services that require on-the-spot payment, such as moving company services or buying antiques. [8] In terms of payments functionalities and reach, corporates have probably more requirements than individuals and their demand for instant payments may be lower because they have alternatives. For a purely B2B environment, the limitation of EUR 15,000 could become an obstacle and that is why they are watching it very closely and, if necessary, they will increase that amount. However, for many purposes, having instant payments functionality is something valuable and beneficial, and corporates and businesses will benefit from it as well. [18]

4. THE SWIFT GLOBAL PAYMENTS INNOVATION (SWIFT GPI)

The SWIFT global payments innovation (SWIFT gpi) is the largest change in cross-border payments over the last 30 years and is a new standard. SWIFT gpi dramatically improves the customer experience in cross-border payments by increasing their speed, transparency and end-to-end tracking. Hundreds of thousands of cross-border payments are today being sent, using the new gpi standard, and payments are made quickly, typically within minutes, even seconds. SWIFT gpi allows corporates to receive an enhanced payments service, with the following key features:

- Faster, same day use of funds within the time zone of the receiving gpi member
- Transparency of fees
- End-to-end payments tracking and
- Remittance information transferred unaltered.

Launched in 2017, gpi one year later already accounts for 25% of SWIFT cross-border payment traffic. More than 165 banks, representing 80% of SWIFT's cross-border payments traffic, and including 49 of the world's top 50 banks, have signed up for the service. To date, 50 million gpi payments have been processed, with hundreds of thousands of payments sent daily across 350 country corridors, in more than 100 currencies. In major corridors, such as USA-China, gpi already accounts for more than 40% of payment traffic. It is set to be the standard for all cross-border payments made on the SWIFT network by the end of 2020. [22] SWIFT gpi is seen as a key player in China's Belt and Road Initiative (BRI). It is designed to improve the customer`s experience in correspondent banking by increasing the speed, transparency and predictability of cross-border payments. The service offers Chinese banks faster transactions and also improves the overall banking experience by creating predictable settlement times, transparent bank fees and FX rates, and clear statuses. This turn leads to shorter supply cycles and faster shipping of goods on the customer`s end. The discrepancy in standards and regulation across the BRI introduces a number of challenges, such as the absence of unified communications framework and compliance issues. Strengthening financial connectivity on the BRI routes is vital in ensuring its success in driving trade and stimulating economic growth across Asia. [13]

As a next phase, SWIFT has created a work group comprised of banks from China, Australia, Singapore and Thailand to explore, if these payments can further be sped up. The work group will define a set of business rules to look into how business process frictions can be overcome to facilitate faster (or close to real-time) payments. The working group will also identify domestic real-time payment systems that will carry the gpi information and unique end-to-end transaction references (UETRs), to allow the reach of the gpi service to extend into domestic payment system environments.

5. OTHER IMPORTANT INNOVATIONS IN PAYMENTS

Application programming interfaces (APIs) are technologies used by the travel sector for years to allow two applications to communicate. In the financial sector banks and payment service providers (PSPs) now use them to be able to open their infrastructure to share data, to communicate with one another and to enable straight-through payment processing on international business payments. They can also improve the efficiency of an accounts payable function by reducing manual input. The potential benefits are in smoother experience as businesses can carry out more tasks within their existing business applications rather than logging into multiple systems and more simplified and accurate audit and reporting processes.

It enables finance departments to automatically call on FX rates for their payments from their provider, as well as accessing beneficiary verification tools all with their existing business architecture. In addition, once payments have been sent, auto-reconciliation can take place significantly reducing manual processing time. [3]

API basically provides access to an organization's digital assets and services; deployed effectively it allows users to access a third party system from their own environment. Emerging trends are evident in API usage across the fintech space, as well as banks' usage to extend differentiated services to corporate customers. [20]

Major reason for banks to foray into the API space, as the future will see many financial services emerges not only from banks but also from start-ups. While banks have the huge asset of financial data, which they are trying to protect, a smarter approach would be to generate new revenue streams from that asset. [21]

Distributed ledger technology (DLT) is one such innovation that has been cited as a means of transforming payment, clearing and settlement (PCS) processes, including how funds are transferred and how securities, commodities and derivatives are cleared and settled. DLT is a term that has been used by the industry in a variety of ways and so does not have a single definition. Because there is a wide spectrum of possible deployments of DLT, this paper will refer to the technology as some combination of components including peer-to-peer networking, distributed data storage, and cryptography that, among other things, can potentially change the way in which the storage, recordkeeping, and transfer of a digital asset is done. [14]

Current payments gateways rely on international payments passing through intermediary banks, which may slow the process down, increase costs and reduce payment visibility. With distributed ledger technology (DLT) payments become more or less instant and – due to the nature of the transaction – do not require intermediary banks. Well-known example of DLT is blockchain, with Ripple being one of the bigger names. Blockchain uses a ledger to store each transaction so all parties can see the relevant data and nothing can be altered. There are still regulatory and compliance issues to solve before blockchain become mainstream solution. Using DLT can reduce costs and improve efficiency, as international payments do not need to pass through intermediary banks. Payments are generally more secure thanks to increased transparency. International payments arrive with beneficiaries much faster compared with current payment gateways such as SWIFT. [3]

Modern electronic payment systems rely on trusted, central third parties to process payments securely. As the world of technology advances by big steps forward, new challenges and security problems emerge [12]. Recent developments have seen the creation of digital currencies like Bitcoin, which combine new currencies with decentralized payment systems. Although the monetary aspects of digital currencies have attracted considerable attention, the distributed ledger underlying their payment systems is a significant innovation. As with money held as bank deposits, most financial assets today exist as purely digital records. This opens up the possibility for distributed ledgers to transform the financial system more generally. [2]

Artificial Intelligence (AI) is helping many companies to improve their efficiency around their international payment processes. For example, it can help to reduce time spent on manual data input and reduce errors, so more payments go through successfully. One form of AI called machine learning (ML) can be used to identify and stop fraudulent online payments before they happen. With ML, the system processes a huge amount of data in an instant and progressively

improves its "knowledge" about a person or situation. It can be used to work out the identity of the person making the online payment, or more specifically determine whether the person who owns the account is making the payment. It can also help companies to decide whether to offer individuals services such as bank accounts or loans. As many payments are now made in real time, and international payments will not be far behind, ML is a vital tool in stopping online payment fraud and cyber attacks. Machine learning can be used to reduce foreign currency (FX) risk by helping corporate treasury departments process large volumes of data and make more informed hedging decisions. [3]

AI technologies will clearly have huge impact on the financial services sector. Banks will redefine how they work (their processes), what they sell (their products and services) and how they interact with their customers and employees (their user experiences). They'll redefine their operating structures for an AI-enabled workforce. Humans and AI will work together to drive process and operational efficiency. And new AI applications will create growth through improved customer and employee experiences. [1]

Ripple X-Current is a private blockchain technology that uses inter-ledger protocol. According to the information provided by Ripple, the enterprise software solution enables entities on the chain to instantly settle cross-border payments. To give payments the greatest chance of success, Ripple uses a two-way messaging format allowing entities to share information in real time such as fees, FX rate and risk and compliance information.[3] Ripple's cross-border payments product for banks - the xCurrent - offers an alternative to SWIFT for moving payments between banks and payment providers in different countries. Ripple describes xCurrent as a global real-time gross settlement (RTGS) system – the same label the world's central banks use to describe their own settlement systems. But each state's RTGS settles only its own currency while Ripple's 'global' RTGS settles multiple currencies. It uses blockchain (distributed ledger) technology and real-time messaging to enable cross-border payments that are claimed to settle in seconds within the network of financial institutions using Ripple's software, which the company calls RippleNet. [9]

Ripple cross-border payments may involve correspondent banks. Using xCurrent, the financial institutions involved in the payment send messages to each other in real time to confirm payment details prior to initiating the transaction, and to confirm delivery once it settles. The payer's bank initiates the process by using Ripple's messaging to gather the required information, including a quote for all fees charged by each bank in the chain, as well as the FX rate. This lets the payment provider inform the customer in advance about the total cost of sending the payment, in contrast to the fee uncertainty associated with traditional bank-initiated cross-border payments. [17]

CONCLUSION

Over the past decade, we have seen huge changes in technology and business models. New payment platforms and solutions, updated regulations dealing with efficiency and security of payments can - most notably - have higher expectations from traders and consumers.

SEPA allows consumers, businesses and public administrations to make and receive the credit transfers, direct debit payments and credit cards under the same basic conditions. SEPA credit transfer is realized in one banking day. The non-banking competition in payments pressed banks to go further and the result was the implementation of first SEPA instant payment in 2017 realized in max. 10 seconds. The Society for Wordwide Interbank Telecommunication which

is one of the most important institutions that accelerated innovations in international payments, offers a new cross border payment system known as SWIFT global payments innovation.

The banking industry has to face a permanent challenge of implementation of new technologies and the payments are one of the most important areas of these innovations.

REFERENCES

[1] Accenture, (2018) *Redefine Banking with Artificial Intelligence*, [online], available at: https://www.accenture.com/t00010101T000000Z__w__/gb-en/_acnmedia/PDF-68/Accenture-Redefine-Banking.pdf.

[2] Ali, R. et al. (2014) *Innovations in Payment Technologies and the Emergence of Digital Currencies* (September 16, 2014), Bank of England Quarterly Bulletin 2014 Q3, [online], available at: https://ssrn.com/abstract=2499397.

[3] Banach, W., (2018) *Top 5 innovations to look out for with international payments*, May 23, 2018, Cambridge Global Payment. [online], available at: https://www.cambridgefx.com/blog/top-5-innovations-to-look-out-for-with-international-payments/.

[4] Bersin, J. (2017) *Predictions for 2017, Everything Is Becoming Digital*, Deloite Development LLC., [online], available at: https://www2.deloitte.com/content/dam/Deloitte/at/Documents/about-deloitte/predictions-for-2017-final.pdf.

[5] CAPGEMINI, (2018) *World Payments Reports 2018*, BNP Paribas, [online], available at: https://worldpaymentsreport.com/wp-content/uploads/sites/5/2018/10/World-Payments-Report-WPR18-2018.pdf

[6] CITI, (2017) *Global Instant Payments, Current Context and Future revolutions,* [online], available at: https://www.citibank.com/tts/docs/Global_Instant_Payments_Current_Context_and_Future_Evolution.pdf.

[7] DELOITE, (2015) *Real-time payments are changing the reality of payments.* Deloite Development LLC. [online], available at: https://www2.deloitte.com/content/dam/Deloitte/us/Documents/strategy/us-cons-real-time-payments.pdf.

[8] European Payment Council. (2017) *Launch of the SEPA Instant Credit Transfer scheme, Press Kit* – November 2017, [online], available at: https://www.europeanpaymentscouncil.eu/sites/default/files/kb/file/2017-11/EPC232-17_SCT%20Inst%20press%20kit_November%202017_FINAL.pdf.

[9] Faden, M. (2017) *The Future of Cross-border Payments: Ripple versus SWIFT*. In *FX International Payments*, American Express, [online], available at: https://www.americanexpress.com/us/foreign-exchange/articles/ripple-vs-swift-gpi-cross-border-payments/.

[10] Jančíková, E. (2011) *New trends in trade finance*, Harmony - science in the economy and the society, Sopron, Faculty of Economics University of West Hungary, pp. 6l6-623.

[11] Korauš, A., Dobrovič, J., Rajnoha, R., Brezina, I. (2017) *The safety risks related to bank cards and cyber attacks*, Journal of Security and Sustainability Issues, 6(4): 563-574, [online], available at: http://doi.org/10.9770/jssi.2017.6.4(3).

[12] Korauš, A.; Kelemen P. (2018) *Protection of persons and property in terms of cybersecurity in Economic*, Political and Legal Issues of International Relations 2018, The Faculty of International Relations of the University of Economics in Bratislava, Virt, Vydavateľstvo Ekonóm.

[13] Lee, J. (2018) *Chinese banks work with SWIFT gpi to accelerate their global reach.* SWIFT Press Release, [online], available at: https://www.swift.com/news-events/press-releases/chinese-banks-work-with-swift-gpi-to-accelerate-their-global-reach

[14] Mills, D. C. et al. (2016) *Distributed Ledger Technology in Payments.* Clearing and Settlement, FEDS Working Paper No. 2016-095, [online], available at: https://ssrn.com/abstract=2881204 or http://dx.doi.org/10.17016/FEDS.2016.095

[15] Nielsen Company, (2013) *The mobile consumer a global snapshop February 2013*, [online], available at: https://www.nielsen.com/content/dam/corporate/us/en/reports-downloads/2013%20Reports/Mobile-Consumer-Report-2013.pdf

[16] Pásztorová, J. (2018) *Transformácia obchodných modelov v energetike,* Economic, Political and Legal Issues of International Relations 2018, Virt, pp. 356-378 [online]. available at: https://fmv.euba.sk/www_write/files/Virt_zborn%C3%ADk.pdf

[17] Ripple, (2014) *Process Payment*, [online], available at: https://ripple.com/ripplenet/process-payments/

[18] Santamaria, J. (2017) *Exclusive interview with EPC chair Javier Santamaría on SEPA Instant Credit Transfer,* The Paypers Insights into payments, December 6, 2017. [online], available at: https://www.thepaypers.com/interviews/exclusive-interview-with-epc-chair-javier-santamaria-on-sepa-instant-credit-transfer/771099-38.

[19] Skinner, CH. (2008) *The Future of Finance after SEPA*. Chichester, West Sussex: JohnWiley & Sons Ltd.

[20] Surech B. (2017) *2017's most popular: API banking and the digital transformation of business: Part 1,* The Global Treasurer, [online], available at: https://www.theglobaltreasurer.com/2017/12/21/2017s-most-popular-api-banking-and-the-digital-transformation-of-business-part-1/.

[21] Surech B. (2017) *2017's most popular: API banking and the digital transformation of business: Part 2,* Global Treasurer, [online], available at: https://www.theglobaltreasurer.com/2017/01/20/api-banking-and-the-digital-transformation-of-business-part-2/?_ga=2.9217781.1300139904.1544360312-180586346.1536767553&_ijcid=1544360681248%7c4.634146183.1536767554473.30c516e2.

[22] SWIFT, (2018) 25*% of All Cross-Border Payments now over GPI*, [online], available at: https://www.swift.com/news-events/news/25_of-all-cross-border-payments-now-over-gpi.