Payments going real-time in Finland – instant payments

Payments Council
Working Group

Contents

List of charts

List of tables

1 Summary

At its meeting in November 2018, the Payments Council decided to establish a working group on real-time payments **to examine the current situation of instant payments and the challenges of introducing them** in Finland.

There are currently over 40 real-time payment infrastructures worldwide. Only some of these are instant payment systems because, in addition to being real-time, instant payments are always available irrespective of the day of the week or the time of day. In Finland, however, instant payments are not yet strongly established.

In 2014, the Euro Retail Payments Board (ERPB) outlined that real-time payments should be possible throughout Europe. The Pan-European Single Euro Payments Area (SEPA) Instant Credit Transfer scheme for euro-denominated payments was launched in November 2017. Around half of European payment service providers have joined the SEPA Instant Credit Transfer scheme. Finnish banks are expected to join the service gradually, mainly during this year and next. Instant payments are expected to replace a significant proportion of payments made by traditional credit transfers within five years.

For instant payments to be introduced in Finland as smoothly as possible, the working group, comprising representatives of various stakeholders, sought to outline broadly the benefits and challenges of instant payments in the Finnish payment market.

Instant payments offer a wide range of benefits, and banks operating in Finland see significant benefits in moving to instant payments, both from the perspective of developing their own services and from the perspective of their customers. In addition, the working group identified the following benefits: increasing the security and trust of the parties involve, avoiding counterparty risk, more effective use of business capital and processes, improving liquidity management and enhancing the customer's payment experience.

In the working group's view, the following challenges are associated with the further introduction of instant payments: lack of coordination, achieving sufficient coverage, interoperable systems and applications, delivering a product recognised by all and serving customer groups that differ in terms of usability, adapting processes developed for the world of office hours to the 24/7/365 world, moderating costs, maintaining a level playing field alongside major global players, and managing risks presented by rapid transfers of money.

To meet the above-mentioned challenges of introducing instant payments, the working group proposes the following recommendations for the consideration of the Payments Council:

- Provide an opportunity, within the limits permitted by competition rules, for sufficient coordination between different stakeholders to enable them to commit jointly to one or

more instant payment systems that are accessible by everyone.

- Provide easy-to-use and secure services that meet customers' needs.
- Promote the emergence and visibility of a reliable and recognisable instant payment service.
- Promote the interoperability of European solutions.
- Participate in the development of real-time payments also on the European level.
- Support companies' opportunities to renew and streamline their processes to achieve a sufficient level of automation.
- Encourage parties to open a TARGET Instant Payment Settlement (TIPS) account.
- Safeguard consumer rights in instant payments and ensure the equal access to services of different consumer groups.
- Promote uniform regulation and supervision of companies engaged in the same activity.
- Support the development of financial literacy.

2 Background

The Bank of Finland's Payments Council[1] is a national cooperation body, created with the purpose of further developing retail payments. It brings together users and providers of payment services and the authorities, with the aim of supporting the use of advanced and internationally compatible forms of payment that are efficient for society as a whole, while promoting competition. The Payments Council is also the national counterpart to the ERPB. The Payments Council analyses and assesses changes in the operating environment, current payment initiatives and the impact of regulation.

The Payments Council also monitors the expansion of real-time payments and related projects. In Finland, the development of instant payments has progressed more slowly than in the other Nordic countries, some of which already have well-functioning and widely-used instant payment systems. In the Eurosystem (European Central Bank and national central banks), the challenges to introducing instant payments are being studied and introduction supported through a number of pan-European projects. At its meeting in November 2018, the Payments Council decided to establish a working group on real-time payments **to examine the current situation of instant payments and the challenges of introducing them** in Finland.

Experts from Payments Council member organisations as well as a wide range of other representatives of payment service users and providers were invited to be members of the working group. The working group had 24 members, and its work was coordinated by the chair of the working group, from the Bank of Finland[2]. Its task was not only to produce a report on current systems and areas of use, but also to describe the barriers to the wider introduction of instant payments and, on the other hand, to propose possible solutions to eliminate these barriers. In addition, the working group deliberated recommendations for action for the Payments Council's consideration.

[1] Payments Council of the Bank of Finland's website: https://www.suomenpankki.fi/en/money-and-payments/payment-systems/the-bank-of-finland-as-catalyst-payments-council/.

[2] The members of the Payments Council working group on real-time payments: Chair Maria Huhtaniska-Montiel, Bank of Finland; Jari Toivonen, Bank of Finland; Fredrik Tallqvist, Aktia plc; Jyri Marviala, Automatia Pankkiautomaatit Oy; Jarmo Heilakka, Danske Bank A/S, Finland branch; Janina Grönholm, EBA Clearing; Hannu Ylänen, Confederation of Finnish Industries; Inkeri Tolvanen, Finance Finland; Sirkka Kiesiläinen, Handelsbanken Finland; Jarkko Malinen, Social Insurance Institution of Finland; Tuula Loikkanen, Finnish Commerce Federation; Petri Salovaara, Kesko Corporation; Pirjo Aspinen, Finnish Competition and Consumer Authority; Nina Jokela, Finnish Competition and Consumer Authority; Paula Pessi, the Consumers' Union of Finland; Matti Villikka, Nets; Niklas Lemberg, Nordea Bank Plc; Taina Teittinen, Oma Säästöpankki Plc; Hanna Äijälä, OP Group; Juha Ahola, SOK; Petri Malinen, Federation of Finnish Enterprises; Mervi Luurila, Central Bank of Savings Banks Finland Plc; Eeva-Liisa Koltta-Sarkanen, Ministry of Economic Affairs and Employment, and Risto Koponen, Ministry of Finance.

3 Concepts and legislation on instant payments

The same expressions are often used throughout the world for real-time payment and instant payment. In English, at least the following expressions have been used: real-time payments, instant payments, immediate payments, fast payments and faster payments. In the euro area, the expressions instant payments, IP and instant credit transfers are generally used.

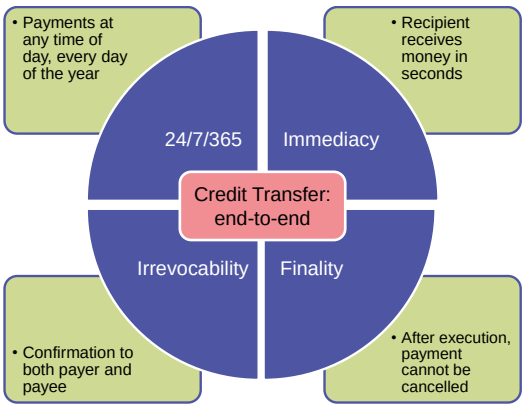
Real-time payment describes any payment where the payment arrives at the recipient almost immediately after a payment transaction initiated by the payer. Instant payment is always real-time but, in addition, it also has other features. It is always available, irrespective of the day of the week or the time of day.

The ERPB has defined instant payments as follows:

> *"Electronic retail payments available 24/7/365 and resulting in the immediate or close-to-immediate interbank clearing of the transaction and crediting of the payee's account with confirmation to the payer, irrespective of the underlying payment instrument, arrangements for clearing, and settlement."*

Interbank clearing means that the payment has been recorded as debited from the payer in the payer's bank and credited to the payee in the payee's bank.

Chart 1. Instant payment features



Source: Bank of Finland.

According to the above definition, instant payment is always possible, also at night, on weekends and on public holidays. An instant payment is always real-time, i.e. the payment is received immediately or in seconds. As with traditional credit transfers, an instant payment is final, i.e. after execution it cannot be cancelled, and both the payer and the payee receive confirmation of the payment.

In instant payment, the payment is made from one account to another. Within the same bank, transfers are already real-time, since the recording of the payment from the payer's account to the payee's account takes place in the bank's internal systems. In transferring an instant payment to a recipient's account in another bank, infrastructure intended for transferring real-time payments between banks is needed.

An instant payment can be initiated with a number of different payment instruments, for

example with an online store payment button, a mobile phone or, more generally, a smart device[3], with a request to pay or in an online bank. In this report, the term payment instrument refers to a means or function used to initiate the payment process.

Instant payment, moreover, does not necessarily mean mobile payment, and mobile payment does not always mean instant payment. Mobile payment is any payment transaction initiated using a mobile device, such as a smartphone or a smart wristband. In mobile payment, the payment instrument is therefore a mobile device. Some payments initiated with mobile devices are transmitted using a card payment infrastructure, when the payment is executed based on payment card information saved on the mobile device. In such cases, instant payment is not involved. Currently, the card payment infrastructure does not support real-time payment every day of the week and at any time of day according to the definition of instant payment.

Payment services, such as credit transfers (instant payment transfers and traditional credit transfers) and payment card payments, may be provided by credit institutions within the scope of their operating authorisation and by service providers fulfilling the requirements laid down in the Payment Institutions Act[4]. Of these, the latter have a payment institution authorisation granted in Finland by the Financial Supervisory Authority (FIN-FSA) or they have obtained a decision from the Financial Supervisory Authority that their activities meet the requirements to provide a payment service without authorisation. A payment institution authorised in the European Economic Area (EEA) may also offer payment services in Finland if the FIN-FSA is appropriately notified of this. Requirements on the provision of payment services, in turn, are laid down in the Payment Services Act[5].

The objective of the Second Payment Services Directive (PSD2) is to extend the scope of regulation to the various types of payment services and to update payment services regulation in line with market developments. Legislative changes mainly entered into force in 13 January 2018[6]. Comprehensive information on PSD2 is available on the FIN-FSA's website[7]. The Directive also applies to instant payments.

[3] A smart device may be, for example, a mobile phone, a wristband or a smart payment card (smartcard).

[4] Act on Payment Institutions (297/2010): https://www.finlex.fi/fi/laki/kaannokset/2010/en20100297.pdf.

[5] Payment Services Act (290/2010): http://www.finlex.fi/fi/laki/ajantasa/2010/20100290 (in Finnish).

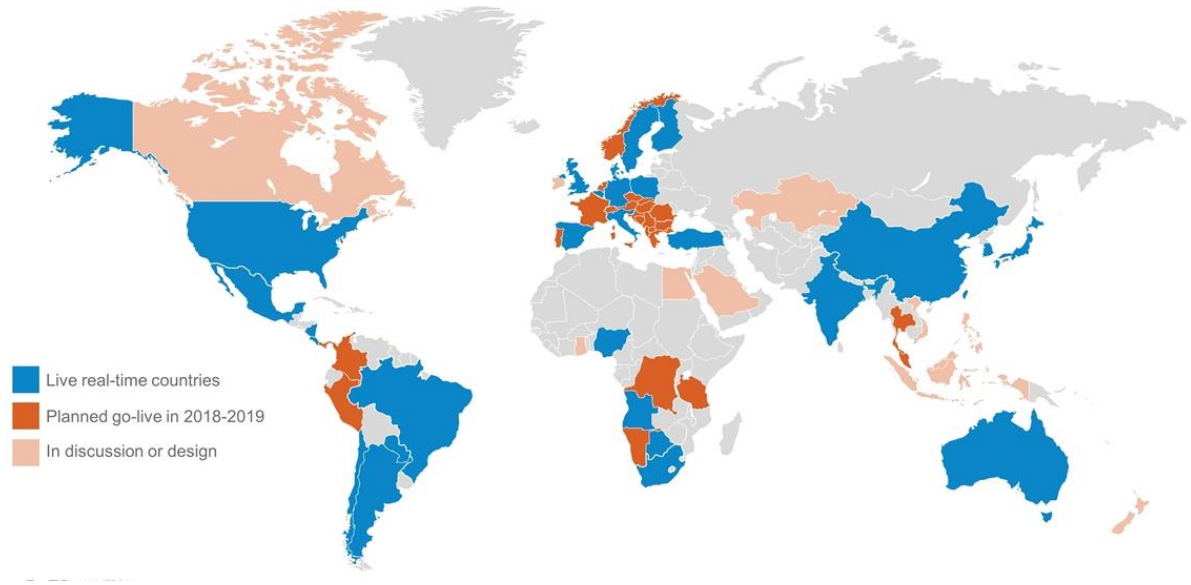
[6] In Finland, the Directive was implemented nationally in two parts, and amendments were made mainly to the Payment Services Act (290/2010) and the Act on Payment Institutions (297/2010). In addition, minor amendments were also made to the Consumer Protection Act and the Information Society Code, now the Act on Electronic Communication Services. For consumer customers, the Consumer Protection Act also applies as general legislation to instant payments.

[7] PSD2 on the FIN-FSA's website: https://www.finanssivalvonta.fi/en/regulation/regulatory-framework/psd2/.

4 Payments going real-time in the world and in Finland

Infrastructures facilitating real-time payments have been introduced at an accelerating rate throughout the world in recent years. In 2014, there were 14 countries that had infrastructure supporting real-time payments, while in 2017 there were 25 such countries and in 2018 there were 40[8]. In early May, InstaPay[9] calculated that there were 44 infrastructures facilitating real-time payments operating in the world. In contrast, instant payments as defined by the ERPB, where money is transferred end-to-end (almost) immediately and where payments can be transmitted 24/7/365, cannot be used in as many countries.

Chart 2. Real-time payments worldwide



Source: ACI Worldwide, presentation at Analyst Day 2018 event 14 November 2018: https://investor.aciworldwide.com/static-files/1b8b03e8-5561-4097-a6e3-e5ff96ed19e6.

The first real-time payment system was introduced in Japan in 1973, and it operated only during the daytime. The system was originally the RTGS (Real-Time Gross Settlement) system,

[8] FIS Global's report "Flavors of Fast 2018": https://www.fisglobal.com/flavors-of-fast.

[9] Information provided by the commercial market intelligence hub InstaPay was used, due to the comprehensive and up-to-date quality of the information. Information was also verified from other sources. InstaPay Live Tracker: https://www.instapay.today/tracker/.

operated by the central bank, but nowadays it also serves retail payments. Since October 2018, the system has operated 24 hours a day.

An always-open instant payment system launched in India in 2010, the Immediate Payment Service (IMPS), is described in an FIS Global report as one of the most advanced in the world[10]. The number of payments passing through it has increased significantly each year due to the many additional services, such as messaging services, built on top of the system as well as the high popularity of mobile payments. The system was launched by the Indian government, and settlement takes place in central bank money.

Real-time payment, particularly with a mobile device, is also very popular in China, where in some large cities mobile payments are even more popular than using cash. An almost real-time payment system established by the central bank, connecting banks and merchants, has been in operation since 2010 and its use has been growing year on year. Last year, directed by legislation, the large mobile payment providers Alipay and WeChat Pay, also joined the system. In China, payment transactions are mainly initiated using QR codes[11], which can operate either so that the payer selects the sum, or as a request to pay, in which case the final sum comes to the payer for approval. Chinese travellers can also use the same method and familiar payment application elsewhere in the world. In Finland, too, there are many shops where WeChat Pay or Alipay can be used as a means of payment.

The first European system facilitating real-time payments was launched in Switzerland in 1987. The system still only operates on weekdays but has already transferred to the ISO 20022 message standard[12] with respect to some parties. The UK Faster Payments system began in 2008 and its user numbers have grown steadily. In the UK, a new instant payment strategy has been published aimed at keeping up with ever-accelerating development. The goal is to create an open payment framework in which services that generate added value are brought to the market faster.

All of the above-mentioned systems supporting real-time payment or instant payment are national, single-currency systems. The first multinational service is the pan-European SEPA Instant Credit Transfer (SCT Inst) scheme.

In 2014, the ERPB outlined that real-time payments should be possible throughout Europe. It assigned to the European Payments Council (EPC) the task of developing a pan-European instant payment service, to be introduced at the end of 2017. The service is intended for use by banks and other payment service providers (PSP).

The EPC's SEPA Instant Credit Transfer (SCT Inst) scheme includes a rulebook and implementation guidelines based on the ISO 20022 message standard. In addition, banks and

[10] FIS Global's report "Flavors of Fast 2018": https://www.fisglobal.com/flavors-of-fast.

[11] The QR (Quick Response) code is a two-dimensional square-shaped matrix (cf. the traditional barcode), in which information is encoded. It can be either static or dynamic.

[12] The worldwide modern XML message standard for payments, which is required in interbank SEPA payments, for example.

payment institutions have to enter into an agreement with the EPC to join the SCT Inst scheme, allowing them to provide their customers with a SEPA instant credit transfer service. The agreement obliges the bank or payment institution to at least accept SEPA instant credit transfers for its customers' accounts. The agreement obliges the bank or payment institution to acquire the clearing and settlement services necessary to perform SEPA instant credit transfers.

The SCT Inst scheme was introduced in Europe in November 2017. Joining the scheme is optional for European PSPs. More than 2,000 PSPs, i.e. around half of European PSPs, have already joined the SCT Inst scheme. In Finland, a number of banks are planning to launch a SCT Inst service during 2019 and 2020. The SCT Inst scheme is described in more detail in Appendix 1.

One of the first systems to use the SCT Inst scheme was EBA Clearing's RT1, which was launched in November 2017. The RT1 system operates 24/7/265 and supports PSPs by transferring euro-denominated payments end-to-end in real-time, with the recipient having the funds accessible to them immediately. Credit institutions across Europe can use the RT1 system for any euro-denominated payment product. In the system, each participant has its own liquidity position, which is fully guaranteed by central bank money. Each participant's liquidity position is managed by the participant's credit transfers from TARGET2 (during TARGET2 opening hours) to RT1 technical accounts, or vice versa. The RT1 payment system is described in more detail in Appendix 1.

In Spain, the national instant payment system Bizum was launched in 2016. A joint venture of the central bank and the industry, it has grown from mobile payments between private individuals to payments made at retail sites and online. The system was updated to be interoperable with the SCT Inst scheme, and it enabled pan-European SEPA instant credit transfers to be made right from the start of the SCT Inst scheme in November 2017.

TARGET Instant Payment Settlement (TIPS), provided for Eurosystem banks, is part of the Eurosystem's TARGET services, and it was launched in November 2018. TIPS provides 24/7/365 Europe-wide reachability and, for SEPA instant credit transfers sent through it, real-time and irrevocable settlement in central bank money. All credit institutions that meet the TARGET participant requirements may join TIPS as a direct participant. The day-end balance of a TIPS account is taken into account when calculating a participant's minimum reserves. The TIPS system technically supports the simultaneous processing of multiple currencies, but does not have a currency converter. The TIPS settlement service is described in more detail in Appendix 1.

Bankgirot, owned by seven banks in Sweden, developed in cooperation with the central bank the open BiR instant payment system, which was introduced in 2012. In the same year, the mobile application Swish, built on top of the system, was launched, and it is supported by most Swedish banks. Swish is very popular in Sweden, and in some years it has grown by nearly 50%. Swish is used by both private individuals and merchants, and a verb "to swish" has even arisen in the

Swedish language to describe the payment transaction performed by Swish.

The RealTime24/7 instant payment system was introduced in Denmark in 2014, and its utilisation rate has increased significantly over the years. The technical architecture allows it to be used via an open interface, enabling the parties involved in the system to develop their own commercial services and additions. The system handles all types and all sizes of credit transfers, and the transaction time in Denmark is mostly less than 0.02 seconds. In Denmark, it is calculated that more than 90% of the adult population use the RealTime24/7 system. In addition to Denmark, Nets' RealTime24/7 currently supports national payment systems in Italy and Slovenia. In Hungary, the system will be launched in July 2019.

In Iceland, real-time payment has been possible since 2001. Iceland is currently undertaking a major renewal of its payment systems. The construction of a new system facilitating instant payments is also under way in Norway. An instant payment system launched in 2014 is not considered to be reliable, because pre-funding is not supported and therefore the system's user levels have not reached the desired level[13].[14].

In Finland, it has been possible to execute almost real-time payments via the banks' POPS system (interbank online instant transfers and cheques) since 1995. The money is transferred between banks within an hour, but only during bank opening hours. In POPS, settlement of payments between banks is based on bilateral limits, and margins are transferred on central bank accounts either on a net basis at the end of the day or individually, if a limit is exceeded. The most common usage example is a car or home purchase. Advanced in its time, the now nearly 25 years old system is technically out-dated and will be replaced over time by SEPA instant credit transfers. Since POPS is not completely real-time and not always available, it does not fall within the definition of instant payment.

The only instant payment system operating in Finland is the Automatia Real-time Payment Platform (ARPP), which was launched in March 2017. The system is currently used by Nordea and OP Group, and until June 2019 also by S-Bank. ARPP implementation is based on the utilisation of Automatia's ATM withdrawal and deposit interfaces, which were already being used by Automatia's customer banks, as well as the clearing and settlement system for payments between Automatia and the banks.

The Siirto system is an Automatia-developed real-time mobile payment system that crosses bank boundaries. It consists of a payment recipient register (Siirto register), which links a mobile phone number or other unique identifier to an IBAN account number, and a real-time messaging service supporting mobile payment as well as an instant payment processing system. Automatia provides the necessary shared infrastructures between banks and PSPs, which

[13] The Vipps application for mobile payments was launched in March 2017 and is very popular in Norway. In 2017 it was announced that half of all Norwegians were already using Vipps. The application does not, however, offer instant payments as defined by the ERPB, but works like MobilePay in Denmark and Finland.

[14] FIS Global's report "Flavors of Fast 2018": https://www.fisglobal.com/flavors-of-fast.

in turn provide to their customers their own mobile applications and other service solutions. The ARPP processing system is currently used in Siirto mobile payments, but it is also possible to use SEPA instant credit transfers. Siirto is described in more detail in Appendix 1.

Based on the results of a survey of its TARGET2[15] customers conducted by the Bank of Finland in February-March 2019, banks operating in Finland mainly intend to launch a SEPA instant credit transfer service during 2019, some banks later, and some have not yet decided on a date. The SEPA instant credit transfer service will therefore probably be introduced in stages. Banks operating in Finland also believe that instant payments will replace traditional credit transfers very quickly, and that after five years instant credit transfers will be the prevailing credit transfer method, instead of the traditional credit transfer mainly in use now. Based on the survey responses, banks operating in Finland survey believe that instant payments will also replace card payments to some extent.

In Finland, there is no published information on instant payments as a method of payment, nor is there comparable user and transaction volume information available for all of the above-mentioned service providers.

[15] TARGET2 (Trans-European Automated Real-time Gross Settlement Express Transfer system) is the real-time gross settlement (RTGS) system owned and operated by the Eurosystem. For more information, please see: https://www.suomenpankki.fi/en/money-and-payments/payment-systems/the-bank-of-finland-as-operator-target2/.

5 Areas of use for instant payments

As use of mobile devices has increased and availability of wireless network connections has expanded, consumers' expectations for speed and ease of payment have presumably also grown. Such changes in consumers' expectations are also influencing the services provided by banks and other service providers.

Based on the responses to the survey of its TARGET2 customers conducted by the Bank of Finland, banks operating in Finland see significant benefits in introducing instant payments, both in terms of developing and streamlining their own services and from their customers' perspective. Instant payments are expected to replace a significant proportion of payments made by traditional credit transfers within five years.

The benefits of instant payments can be described according to their areas of use. Appendix 2 "Example of areas of use" describes identified areas of use of instant payments with the aid of examples. In nearly all of the examples, both the payer and the payee are described as beneficiaries of instant payments.

The benefits of instant payments compared with the tradition credit transfers depend on the area of use. Typical benefits described are increased security and trust of the parties involved and avoidance of counterparty risk. For businesses, benefits include more efficient use of capital and processes as well as facilitating liquidity management. For customers, on the other hand, benefits may include an improvement of the customer experience, as the payment process is more efficient. As payment recipients, private individuals also benefit from the fact that the funds are immediately accessible. As a 24-hour service, instant payment benefits all parties, even though it also presents its own challenges to businesses' current processes.

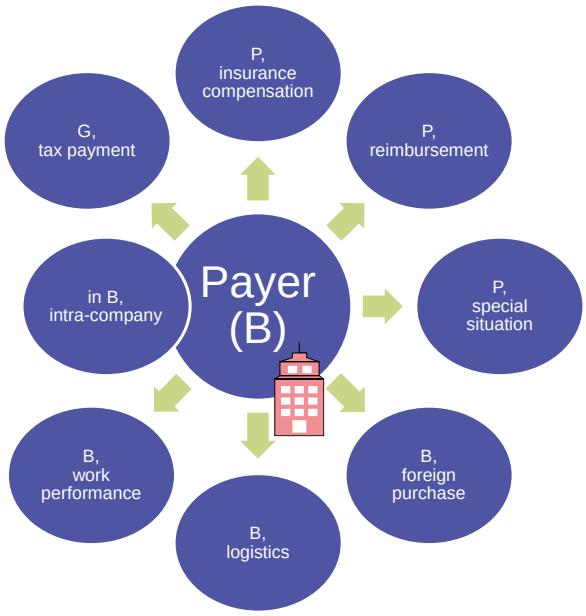
The areas of use of instant payments (or instant credit transfers), like traditional credit transfers, can be roughly divided as follows:

1. Payments by private individuals to other private individuals (P-to-P),
2. Payments by a private individual to a business (P-to-B),
3. Payments by businesses to private individuals (B-to-P),
4. Payments by businesses to other businesses (B-to-B) and
5. Payments between the government and private individuals, organisations and companies (G-to-P, P-to-G, G-to-B, B-to-G).

Chart 3. Examples of areas of use, private individual (P) as the payer[16]

Source: Bank of Finland.

Chart 4. Examples of areas of use, business (B) as the payer



Source: Bank of Finland.

[16] P=Person, B=Business, G=Government.

6 Challenges to introduction

An infrastructure facilitating instant payments exists both within Finland and throughout Europe (Appendix 1). A number of possible areas of use for instant payments have been identified (Appendix 2). As the current solutions facilitating instant payments in Finland are not available to the customers of all banks, it is clear that their utilisation rate is far from what could be possible. In Finland, instant payments have not been a success story as in the other Nordic countries or a number of European countries. There are several reasons for this.

The second part of the study, after the description of the current situation, was to identify the challenges to introducing instant payments and to seek solutions for them. Instant payments and the challenges associated with introducing them are also being addressed in European forums and conferences. From a European perspective, the identified[17] challenges include the added value received by users, the use cases and branding of instant payments, harmonisation, and the greater coordination required by the wider introduction of instant payments.

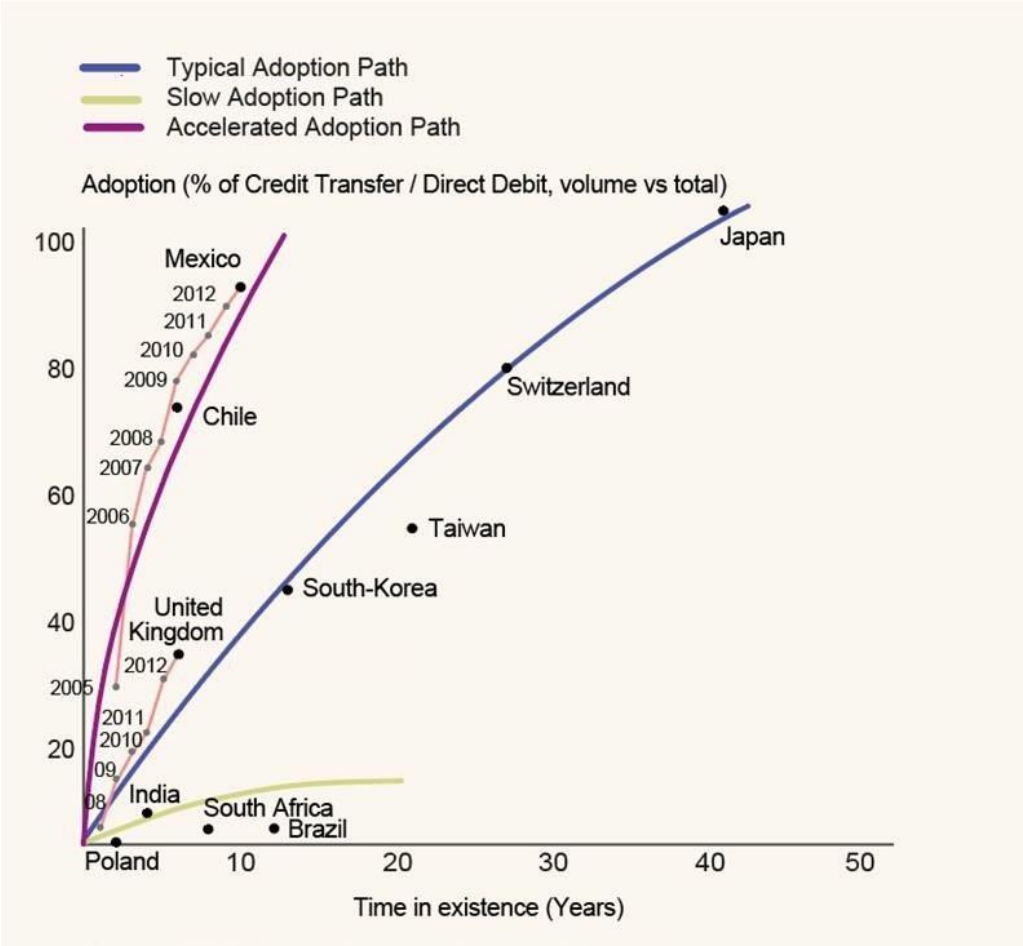
The authorities also have a role to play in the rapid growth in the utilisation of instant payments in a number of countries[18], because they have supported the promotion of instant payments. A good example of this is Mexico[19].

[17] For example, the Banque de France conference "Time and speed in the financial system" 11 January 2019.

[18] Descriptions of various countries' real-time payment systems can be found in the FIS Global report "Flavors of Fast 2018": https://www.fisglobal.com/flavors-of-fast.

[19] HSBC report "Instant Payment Schemes" 1 February 2019: https://www.gbm.hsbc.com/-/media/gbm/reports/insights/instant-payment-schemes.pdf.

Chart 5. Speed of instant payments adoption in selected countries



Source: HSBC, "Instant Payment Schemes" 1 February 2019, https://www.gbm.hsbc.com/-/media/gbm/reports/insights/instant-payment-schemes.pdf.

The ERPB and its working groups are also seeking means to utilise instant payments more widely, particularly in payments that take place at point of interaction (POI). The EPC also has working groups established to promote the use and usability of instant payments.

The table below shows the key challenges to the introduction of instant payments, categorised by subject area. Each challenge concerns either the user, i.e. private individual or business, the PSPs or both. The challenges are lack of coordination, achieving sufficient coverage, interoperable systems and applications, delivering a product recognised by all and serving customer groups that differ in terms of usability, adapting processes developed for the world of office hours to the 24/7/365 world, moderating costs, maintaining a level playing field alongside major global players, and managing risks presented by rapid transfers of money.

Table 1. Challenges to the introduction of instant payments, with proposed solutions

Area	Whose challenge? User[20] / Payment service provider	Challenge to introduction	Proposed solutions
Coordination	Payment service provider	Achieving a system operating on a quadratic[21] model which is available to all account banks and which is able to create a sufficient network of payers and payees. Without coordination, this will not happen.	Promote the achievement of sufficient coordination within the limits permitted by competition rules.[22] Promote the joint commitment of the industry to one or more instant payment systems that are reachable by all and interoperable.
Coverage	User and payment service provider	How do we get (almost) all service providers and users to participate?	Promote the joint commitment of the industry to one or more instant payment systems that are reachable by all and interoperable. Promote the development of payment products and user-interfaces that meet users' requirements in terms of features and usability. Promote the provision of instant payments in the Finnish market comprehensively within a sufficiently short time window.
Interoperability	Payment service provider	Maintaining a number of instant payment systems or payment applications, if they do not discuss matters with each other. Then no service will become widely established.	Commitment to SEPA standards. Promote interoperability of pan-European solutions and ensure interoperability of recipient registers.
	User	The payer must know which instant payment application the recipient uses.	Promote the creation of an identifiable, reliable and system-independent service.

[20] By a user is meant a private individual, a business or an organisation.

[21] By a quadratic model is meant a network connecting the payer and his or her PSP as well as the payee and his or her PSP, and to which all have consistent access.

[22] When banks and other PSPs adopt instant payment solutions, they must make commercial decisions independently based on their own circumstances. The competition rules prohibit cooperation of competing companies that restricts or steers the companies' competitive behaviour. Technical solutions and standards, for example, can be discussed, however, by trade associations within the limits permitted by competition rules. More information on competition rules can be found on the Finnish Competition and Consumer Authority website: https://www.kkv.fi/en/facts-and-advice/competition-affairs/competition-restraints/.

Area	Whose challenge?	Challenge to introduction	Proposed solutions
Usability	User	What is the added value brought by instant payments for both the consumer and the business user compared with current methods of payment? The different needs and abilities of demographic groups to use the new technology. Payer identification is reliable and user-friendly.	Promote the development of payment products and user-interfaces that meet users' requirements in terms of features and usability.
	Payment service provider	Productisation of instant payments and services built on top of the instant payment infrastructure, so that instant payments become established.	Promote the emergence and visibility of a reliable and recognisable instant payment service.
	User	It is difficult to introduce instant payments in payment that takes place at the point of sale.	Take the requirements of merchants into account to facilitate acceptance of payment.
Processes	User	Application updates in 24/7/365 service.	Support construction of systems where updates do not interfere with the service. A model may be found elsewhere in the world.
	User	Businesses' processes have been built according to traditional credit transfer model.	Promote the creation of services and data products for businesses where the making of mandatory changes is minimised.
	Payment service provider	Liquidity management and central bank money in 24/7/365 service.	Identify the need to extend TARGET2 opening hours. Encourage parties to open a TIPS account.
Costs	Payment service provider	Infrastructure construction and maintenance will be too expensive.	Bank-specific business decision.
	User	User costs will grow too high.	Opportunity cost of instant payment. Competition between service providers. Regulation.
Competition neutrality	Payment service provider	A level playing field in a globalising market.	Promote uniform regulation and supervision of companies engaged in the same activity.
Risk management	User and payment service provider	Scams and fraud will also be "real-time".	Existing risk management procedures to be extended to instant payment.
	User	Consumers' management of own finances.	Promote the development of financial literacy when payment becomes real-time. Promote the visibility of financial management applications.

A solution has also been proposed for each of the challenges to the introduction of instant payments. Based on these proposed solutions, recommendations for action are presented in the following section.

7 Recommendations for action

To meet the challenges associated with the introduction of instant payments as well as the solutions proposed for them, the working group proposes the following recommendations for the consideration of the Payments Council:

- Provide an opportunity, within the limits permitted by competition rules, for sufficient coordination between different stakeholders to enable them to commit jointly to one or more instant payment systems that are accessible by everyone.
- Provide easy-to-use and secure services that meet customers' needs.
- Promote the emergence and visibility of a reliable and recognisable instant payment service.
- Promote the interoperability of European solutions.
- Participate in the development of real-time payments also on the European level.
- Support companies' opportunities to renew and streamline their processes to achieve a sufficient level of automation.
- Encourage parties to open a TARGET Instant Payment Settlement (TIPS) account.
- Safeguard consumer rights in instant payments and ensure the equal access to services of different consumer groups.
- Promote uniform regulation and supervision of companies engaged in the same activity.
- Support the development of financial literacy.

In addition, the working group proposes that the Payments Council monitor the work of the ERPB's various instant payment working groups and actively communicate the results to the market.

Appendices:

Appendix 1. Description of current situation of instant payments in Finland

Appendix 2. Examples of areas of use

Appendix 1. Description of current situation of instant payments in Finland

The descriptions in the appendix are descriptions written by individual members of the working group of their own organisation's product or perspective.

1 SEPA Instant Credit Transfer

The European Payments Council's (EPC) SEPA Instant Credit Transfer (SCT Inst) scheme includes a rulebook and implementation guidelines based on the ISO 20022 message standard. Banks and payment institutions have to adhere to the SCT Inst scheme to be allowed to provide their customers with a SEPA Instant Credit Transfer service. The adherence agreement obliges the bank or payment institution to at least act as Beneficiary Bank for the SEPA Instant Credit Transfers. The adherence agreement also obliges the bank or payment institution to acquire the clearing and settlement services necessary to process SEPA Instant Credit Transfers. On its website, the EPC publishes a list of SEPA Instant Credit Transfer compliant clearing and settlement service providers.

EPC and SEPA Instant Credit Transfers rules

EPC is an association comprising 76 members, which are European PSPs (mostly banks) or their national associations. The EPC's role is to support and to promote the integration and development of European payments. The primary task of the EPC is to manage four European payment schemes: the SEPA Credit Transfer scheme, the SEPA Direct Debit Core scheme, the SEPA Direct Debit B2B scheme and the new SEPA Instant Credit Transfer (SCT Inst) scheme. The EPC's new services also include a proxy lookup service between mobile payment recipient solutions. Via the SEPA Proxy Lookup (SPL) service, a mobile phone number will be converted into an IBAN in order to initiate a payment on a pan-European level. Also planned is a request to pay, which the recipient of a payment could send to the payer and, on the payer approving it, would initiate a SEPA Instant Credit Transfer, for example.

National and cross border credit transfers and direct debits between consumers and businesses as well as the systems used by PSPs in 34 SEPA countries are based on the SEPA payment schemes.

The SCT Inst scheme was introduced in Europe in November 2017. Adhering to the scheme is optional for European PSPs. SEPA Instant Credit Transfers are euro-denominated and are transferred from payer to payee within 10 seconds between banks that have joined the scheme. Transfers are available to customers 24/7/365 and, as a rule, transactions can be up to a maximum sum of EUR 15,000.

In addition, PSPs can agree multilaterally on a higher maximum limit. In Finland, the intention is to set no limit between the banks for SEPA Instant Credit Transfers. The general maximum limit of EUR 15,000 will also be raised when PSPs in Europe have accumulated more experience of providing the service.

More than 2,000 PSPs, i.e. around half of European PSPs, have already adhered to the SCT Inst scheme. In Finland, a number of banks are planning to launch a SCT Inst service during 2019.

Each bank or payment institution adhering to the SCT Inst scheme decides on their own instant credit transfer products, for example with what maximum limits and in which channels they provide the service to their customers.

SEPA instant credit transfer clearing and settlement services

TARGET Instant Payment Settlement (TIPS) is a harmonised pan-European real-time payment service for banks provided by the Eurosystem. TIPS was launched in November 2018 and it facilitates reachability across the whole of Europe in SEPA instant credit transfers.

All credit institutions that meet the TARGET participant requirements may join TIPS as a participant[23]. Participants may appoint reachable parties, whose instant payments are settled via the participant's TIPS account. On its website, the ECB publishes a list of reachable parties. A TIPS account holder can also transfer instant payments from another instant payment service to a recipient reachable in TIPS by authorising an instructing party to transfer the instant payment to TIPS.

TIPS offers real-time and irrevocable settlement of instant payments in central bank money. TIPS does not limit the size of payments, so participants can agree between themselves on the maximum limits. Liquidity management is done as liquidity transfers between TIPS and TARGET2 accounts. TIPS accounts can be monitored in real time via a TIPS user interface. The end-of-day balance of a TIPS account is taken into account when calculating a party's minimum reserves.

TIPS is part of the Eurosystem's TARGET services and provides 24/7/365 reachability. The architecture of the TIPS system enables efficient and scalable processing of instant payments as well as recovery from error situations. In accordance with the specification, all instant payments are processed in less than 10 seconds, and 99% of TIPS participants' instant payments are processed in a few seconds. SWIFT and SIA currently provide network service for TIPS instant payments. TIPS operates on a full cost-recovery and not-for-profit basis. The TIPS system technically supports the simultaneous processing of multiple currencies.

In November 2017, EBA Clearing launched the pan-European RT1 instant payment system, which has been reachable since the publication of the SEPA Instant Credit Transfer Scheme Rulebook. The RT1 payment system operates 24/7/265, and it supports PSPs by transferring euro-denominated payments end-to-end in less than 10 seconds. The funds are immediately accessible to the recipient. 99% of payments are cleared in less than three[24] seconds.

Credit institutions across Europe can use the RT1 instant payment system for any SCT Inst-compliant payment product. RT1 is payment

[23] Bank of Finland rules for counterparties and customers: https://www.suomenpankki.fi/en/media-and-publications/publications/instructions-and-rules/bank-of-finland-rules-for-counterparties-and-customers.

[24] Information based on the situation end-May 2019.

channel and use case agnostic. The system is based on the ISO 20022 XML global message standard for real-time payments. Participants can connect to RT1 through SIANET, SWIFTNet Instant or EBICS. RT1 currently reaches more than 2,300 PSPs in 19[25] countries. While the RT1 payment system adheres to the SCT Inst Scheme Rulebook's maximum limit of EUR 15,000, participants wishing to exchange payments without any maximum limit or with a shorter execution timeframe can do so on a closed user group basis.

The RT1 payment system is flexible and has been developed with the support of users; connection to it can be made as a participant or as a reachable party. RT1 also allows settlement on behalf of another party. Technical service providers may assist in connecting the parties.

All payments are transferred and settled in real time, and settlement is final. In the system, each party has its own liquidity position, which is fully backed by central bank money. Each party's liquidity position is managed by the party's credit transfers from TARGET2 (during TARGET2 opening hours) to the RT1 technical accounts or vice versa, via the ASI-6 real-time procedure. Funds are always in the party's name, and they are valued in accordance with the ECB deposit rate.

2 Domestic

The Automatia Real-time Payment Platform (ARPP) is used to transfer instant payments between the account holding banks (currently Nordea and OP Group[26]) connected to it.

The Siirto system is an Automatia-developed real-time mobile payment system that crosses bank boundaries. It consists of a payment recipient register (Siirto register), which links a mobile phone number or other unique identifier to an IBAN account number, the ARPP instant payment system and their complementary services as well as messaging interfaces between Automatia and the banks. The Siirto system is based on these open joint services provided by Automatia to banks and other PSPs. Automatia's role is to produce the essential joint infrastructures between the banks and the PSPs. The banks and other PSPs provide their own mobile applications and other service solutions for their customers.

The Siirto payment recipient register and the ARPP payment platform are separate services in terms of rules, contracts, pricing and technical interfaces. Separate rulebooks and service descriptions as well as technical specifications binding on all PSPs participating in the systems have been prepared for the Siirto and ARPP services. No payment transfer systems other than ARPP have been used in Siirto mobile payments to date, but it would be possible to utilise SEPA instant credit transfers, for example, in the system. The ARPP payment platform, on the other hand, is used for the real-time transfer of Siirto mobile payments and other instant payments between different account holding banks and to initiate instant payments from different banks according to the PIS principle[27].

[25] Information based on the situation end-May 2019.

[26] Until June 2019, also S-Bank.

[27] PIS: Payment Initiation Service.

The Siirto register facilitates the sending of the payment instruction from the payer to the PSP without the payment recipient's account information. From the Siirto register, the payer's PSP finds the payee's IBAN account number based on unique identifier information (most often a telephone number). For the Siirto register service, Automatia provides a joint technical platform by which payments can be directed reliably based on a phone number, also between different PSPs' customers registered in the service. One phone number always corresponds to one account number in the Siirto register, and the most recent registration is always valid, i.e. end users can change their bank or PSP with complete flexibility.

The technical implementation of the ARPP platform is based on the utilisation of Automatia's real-time account bank interfaces (i.e. ATM withdrawal and deposit interfaces), which were already being used by Automatia's customer banks, as well as the clearing and settlement system for payments between Automatia and the banks. In bank interfaces for account transactions, all of the banks currently use the ISO 8583 message standard. In addition, the implementation of the ARPP payment platform includes payment initiation interfaces, complementing the account bank interfaces, that facilitate initiation of payments from the different banks' accounts according to the PIS principle. These, as with all Siirto service interfaces, are based on the RESTful Web Service/JSON standard. All of Automatia's Siirto and ARPP service interfaces can also be provided according to the ISO 20022 standard to meet the customer's needs. The payment limits of the ARPP payment platform have been specified such that EUR 50,000 is the maximum limit for a single payment. However, the banks and other PSPs that use the service specify for their customers their own payment limits, which are currently significantly lower.

3 Nordic countries

Project 27 (P27) is a pan-Nordic project that is exploring the possibility of establishing a Nordic multi-currency payment system. The number 27 refers to the 27 million citizens in the Nordic payment area. The overall vision of P27 is to create an integrated region for domestic and cross-border payments in multiple currencies (DKK, EUR, NOK and SEK). The system is expected to be ready in 2020.

P27 began as a joint project of seven Nordic banks (Danske Bank, DNB[28], Handelsbanken, Nordea, OP Financial Group, SEB and Swedbank) at the beginning of 2018 and with agreement on a common vision: to establish in the Nordic countries the world's first integrated region for domestic and cross-border payments in multiple currencies through an open-access system. The Nordic countries' banking communities are participating in the project via their banking associations.

The target state design is organised in two layers. Layer 1 is a Nordic clearing platform, mandatory for all participants, and it works both for traditional credit transfers, which will be paid

[28] DNB and Norway's banking community withdrew from the project in March 2019. Project announcement: https://www.project27.info/announcements/. The remaining six banks will continue in the project.

as batch payments, and for instant payments. Layer 2 consists of standardised and shared pan-Nordic solutions, optional for participants, such as payment products or clearing services. Country- or region-specific products and services will remain outside the scope of the project.

The P27 governance model will be dual entity structure. A cost-plus limited liability company managing all operational activities and outsourcing operational activities to the vendor. The P27 schemes will be owned and managed by a scheme management entity, backed by the Nordic countries' banking associations. The activity will resemble the EPC's corresponding work in managing the SEPA Rulebooks.

Appendix 2. Examples of areas of use

Table 2. P-to-P, online flea market, between friends

Payer	Private individual
Payment recipient	Another private individual
Usage situation	Private individuals want to make payments to each other easily, preferably based on a phone number. Friends want to share the cost of a restaurant visit. A buyer wants to pay for their purchases at a sales event, but has no cash and the seller does not have a payment terminal. In an online flea market, a buyer wants to pay the seller for a purchase in a way that creates trust between the seller and the buyer. The seller receives immediately an acknowledgment of the arrival of the payment and, against the payment, gives the buyer the product or service sold.
Payment instrument[29]	Payment button (mobile application), request to pay, smart device[30]
Biggest beneficiary	Both parties benefit. Parties' security improves when use of cash, for example, decreases.
Challenges to introduction	Coverage, interoperability, usability

Table 3. P-to-B, small businesses, market purchases

Payer	Private individual
Payment recipient	Small business, sole trader
Usage situation	Small-scale entrepreneur selling products at a market. Accepts cash only, so some potential buyers do not make a purchase due to lack of cash.
Payment instrument	Payment button (mobile application), request to pay, smart device
Biggest beneficiary	Both parties benefit. For the seller, potential to increase their sales. Parties' security improves.
Challenges to introduction	Coverage, interoperability, usability, costs

[29] The term payment instrument refers to the instrument used to initiate the payment, for example a payment button, smart device, request to pay or online/mobile bank. A payment card may also serve as a payment instrument initiating instant payment in the form of a "smartcard".

[30] A smart device may be, for example, a mobile phone, a wristband or a smart payment card (smartcard).

Table 4. P-to-P, P-to-B, car purchase, domestic

Payer	Car buyer
Payment recipient	Car dealer, domestic
Usage situation	Car purchases often take place on weekends. The car is not handed over until the payment is recorded to the recipient's account. A payment receipt alone is not sufficient proof before the seller/car dealer registers the car in the buyer's name and hands over the car to the buyer. In current P2P payment services, it is often not possible to make payments to businesses, they also have low maximum payment limits, and their coverage of services is inadequate. Anti-money laundering legislation prevents, in practice, cash payments large enough to purchase a car. Payment of large sums using a debit card generally requires transaction limits etc. to be updated. The buyer makes the payment for the car in real time as a credit transfer (strong identification). A unique reference/ID is needed to enable the car dealer to identify the transaction. For the dealer, the primary concern is credit risk management, i.e. certainty of receiving the payment (whether it happens in real time or later is not so critical) before handing over the service/product.
Payment instrument	Smart device, online bank, request to pay
Biggest beneficiary	Both parties benefit. The consumer avoids one-day advance payment and counterparty risk.
Challenges to introduction	Coverage, processes, risk management

Table 5. P-to-P, P-to-B, car purchase, foreign

Payer	Car buyer
Payment recipient	Car dealer, foreign
Usage situation	A Finnish consumer travels to Germany for a weekend and buys a used car from a German consumer. A Finnish pensioner buys a car from a neighbouring city in his current country of residence, Spain. The car is not handed over before the money appears in the seller's account, a receipt is not enough. This use case is possible when both the payer's bank and payee's bank are connected to the optional SEPA Instant Credit Transfers scheme (and the price of the car does not exceed the maximum limit for SEPA instant credit transfers).
Payment instrument	Smart device, online bank, request to pay
Biggest beneficiary	The Finnish consumer, who does not need to carry a large amount of cash or schedule the purchase trip on a weekday and worry about the delays associated with an ordinary credit transfer.
Challenges to introduction	Coverage, processes, risk management

Table 6. P-to-P, P-to-B, house purchase

Payer	House buyer
Payment recipient	House seller, real estate agent, notary, tax authority and other parties associated with the purchase.
Usage situation	Housing buying is going digital, and thereby also facilitating direct transactions between consumers. In addition, banks would like to offer their customers the opportunity to conduct house purchases in the bank outside office hours also in the evenings and at weekends. In a house purchase, the payment transaction is at the centre of everything: no processes take place nor ownership changes without the payment transaction. In digital house purchases, payment can be automated. The deposit is paid via the agent's website. The payment is transferred immediately to the seller's account, and the house purchase is completed smoothly. Handling of banking matters becomes more flexible.
Payment instrument	Smart device, online bank, request to pay
Biggest beneficiary	Both parties benefit. Banks benefit because it is possible to discontinue the POPS system.
Challenges to introduction	Coverage, processes, risk management

Table 7. P-to-B, brick and mortar store

Payer	Private individual
Payment recipient	Brick and mortar store keeper
Usage situation	The customer buys a product and wants a smooth and reliable payment transaction. The seller wants access to the money as soon as possible. The customer could use their payment card like a contactless payment, but transaction would be executed as an instant payment. In the payment card, it would be possible select the primary method of contactless payment (this case instant payment), which the card terminal would recognise. A mobile application or corresponding instrument is required to identify the user and accept the payment and for the payer to identify their own account and the credit transfer as the payment instrument. The merchant's systems must be able to accept the payment method both at the cash desk and in the accounts ledger and to manage refunds for purchases as well as error situations.
Payment instrument	Smart device, request to pay
Biggest beneficiary	Both parties benefit. The seller receives the payment in their account in real time. Nowadays, settlement of card transactions with the merchant take 2–10 days. Sales grow as the customer transaction is fast and efficient. The merchant benefits in the form of potentially lower costs and faster cash flow. Faster payment transactions also improve the ability of the seller to fulfil their own obligations. Instant payments could compete on pricing with card payments. The customer benefits from an efficient payment transaction, smart technology runs smoothly and is easy-to-use and security.
Challenges to introduction	Coverage, interoperability, processes, costs

Table 8. P-to-B, e-business

Payer	Consumer
Payment recipient	Online merchant; often an e-business payment mediator is in between
Usage situation	A consumer buys a product online and approves the request to pay with a fingerprint or PIN code on a smart device. The merchant wants the money more quickly than with current methods of payment, where crediting of an online payment button transaction takes 2–3 days and settlement of a card payment 2–10 days. In online payment, the reliability of the payment recipient is important. Particularly when expensive purchases (e.g. airline tickets) are involved, the refunding of money in the case of bankruptcy, for example, must be guaranteed.
Payment instrument	Payment button, request to pay, smart device
Biggest beneficiary	Both parties benefit. The merchant benefits in the form of faster cash flow. The consumer benefits from a faster payment process.
Challenges to introduction	Coverage, interoperability, usability, processes, risk management

Table 9. P-to-B, B-to-B, payment-based work performance

Payer	Buyer of work performance
Payment recipient	Person/business performing the work
Usage situation	In some sectors, work performance is based on payment, i.e. the work does not begin before the payment or part of the payment is in the account of the party responsible for the performing the work. If the payment could be executed in real time into the recipient’s account at home or abroad, it could speed up and streamline a company's operations, as there would be no need to wait for payments. More precise details related to the work performance could be agreed at once and the process could advance more quickly.
Payment instrument	Online bank, smart device, request to pay
Biggest beneficiary	Both parties benefit. Saves time for both and simplifies the process.
Challenges to introduction	Coverage, processes

Table 10. P-to-B, businesses' consumer customer service

Payer	Finnish consumer
Payment recipient	Finnish business
Usage situation	Overdue payment of bill: services, such as a telephone connection, electricity or a magazine subscription, are discontinued and resumed again only when the bill has been paid and information on this has been recorded in the accounts ledger. Example businesses are telecommunications operators, electricity companies, media companies. If a consumer pays their overdue bill, it is recorded in the billing accounts ledger only when the company has, in accordance with current process, reconciled the accounts ledger against a reference list. This may mean a delay of a day or even days. The customer may end up calling the company's customer service for several days, asking about the payment and the opening of services. In instant payment, the recipient company receives the payment in its account immediately. The company reconciles its accounts ledger automatically on a real-time or almost real-time basis. As the supplier, facilitated by instant payments, has implemented its own processes to operate in real time, information about the incoming payment is relayed to the opening of the service and to customer service. The service is opened at once, and customer service receives no calls or if it does receive calls then customer service knows that the payment has been made and the service should be opened at once.
Payment instrument	Online bank, smart device, payment button, request to pay
Biggest beneficiary	Both parties benefit. The consumer benefits in the form of better customer experience. The business benefits, as customers do not burden customer service and manual processes can be reduced.
Challenges to introduction	Coverage, processes

Table 11. B-to-P, special situations and errors, e.g. in salary payment

Payer	Company
Payment recipient	Employee, customer
Usage situation	Payroll data on salaries paid by the company to employees: sometimes there are situations where the sending of payroll data has not succeeded and salaries are delayed in error. In such cases, it would be convenient if the employer could pay the salaries as instant payments and they would be in the recipients' accounts immediately. Applications would include, for example, short-term and temporary employment relationships for which a monthly salary does not apply. Payments can be either in the form of data or as ordinary payment transactions. Customer refunds in business normally take several days, sometimes even weeks, which puts customers in an unfortunate situation where they not have the product nor, on the other hand, any certainty about a refund.
Payment instrument	Online bank, cash terminal
Biggest beneficiary	Both parties benefit. The company has reputational risk to consider and needs to adhere to rules. Employee and customer money reaches its destination more quickly.
Challenges to introduction	Coverage, processes

Table 12. B-to-P, insurance compensation

Payer	Insurance company
Payment recipient	Policyholder, claimant
Usage situation	A customer on a journey is in difficulties, because their belongings have been stolen. Currently, the insurance decision letter reaches the customer at home, often before the payment transaction.
Payment instrument	Bank connection software, online bank
Biggest beneficiary	Both parties benefit. The policyholder's customer experience improves, emergency situations are handled better. The insurance company can automate its processes and customer enquiries will decrease.
Challenges to introduction	Coverage, processes

Table 13. B-to-P, payment refund in e.g. e-business

Payer	Company
Payment recipient	Private individual
Usage situation	Payment refunds/reimbursements, e.g. e-business payment refunds, if the purchase for some reason is cancelled or the customer has, for example, paid too much or too early; travel agencies etc., which deal with large sums. The customer may not necessarily be able to book a new trip until the money has been refunded to them, because the amount may be large and sometimes the booking may need to be made quickly.
Payment instrument	Online bank
Biggest beneficiary	Both parties benefit. The customer gets the money back faster for re-use. The company may receive a new order.
Challenges to introduction	Coverage, processes

Table 14. B-to-B, payment transactions and between businesses; foreign trade

Payer	A company operating in Finland, e.g. a company operating in an industrial supply chain
Payment recipient	Company anywhere (in Finland, SEPA area or even globally)
Usage situation	A company's business is of a kind that the supplier's goods do not move before the seller has received payment. The company is in Finland, the supplier is in Italy. On Friday evening, an opportunity arises for the company to pay its invoice to the supplier. The processing of the payment and information about the incoming payment sent to the supplier's warehouse arrives with a delay. The delay in payment may be up to 4 days. When the supplier, facilitated by instant payment, can implement its own process on a real-time basis, information about the incoming payment is conveyed immediately to the supplier's warehouse. The warehouse robot prepares the shipment and the delivery starts immediately.
Payment instrument	Bank connection software, online bank
Biggest beneficiary	Both parties benefit. The paying company's delivery arrives more quickly and the need for working capital is reduced. The payment recipient, i.e. the supplier, benefits because turnover rate of goods increases and warehousing costs decline. Particularly in payment transactions between companies, instant payments also improve the cash flow of the seller and facilitate financial management. This brings financial benefits to the selling company, as financing costs decrease.
Challenges to introduction	Coverage, processes

Table 15. in-B, intra-company payment transactions

Payer	Company
Payment recipient	Same company
Usage situation	Company N transfer a balance from a collection account in bank A to an account of the same company N in bank B. The company can use an instant credit transfer to manage intraday liquidity by transferring funds between accounts in different banks.
Payment instrument	Bank connection software, online bank
Biggest beneficiary	Instant payments facilitate management of business customers' liquidity.
Challenges to introduction	Coverage, processes

Table 16. P-to-G, B-to-G, tax payment

Payer	Private or business customer
Payment recipient	Tax Administration
Usage situation	A business customer or private customer executes a tax payment to the Tax Administration on the due date.
Payment instrument	Bank connection software, online bank, request to pay, smart device
Biggest beneficiary	Both parties benefit. The payer does not have to pay penalty interest. The payee receives the payment on the due date.
Challenges to introduction	Usability, processes

Table 17. G-to-P, social benefits

Payer	Payer of benefit
Payment recipient	Social services customer
Usage situation	A person in need of social assistance or other support nowadays receives benefits on certain dates. Real-time payment is made possible in connection with a support decision. Material errors are reduced, and large amounts are distributed more evenly by the payer.
Payment instrument	Bank connection software, online bank
Biggest beneficiary	The recipient of assistance benefits. The assistance arrives immediately in connection with the decision, if there is a need for this.
Challenges to introduction	Coverage, processes