#realtimepayments

Global move

towards real-time payment systems

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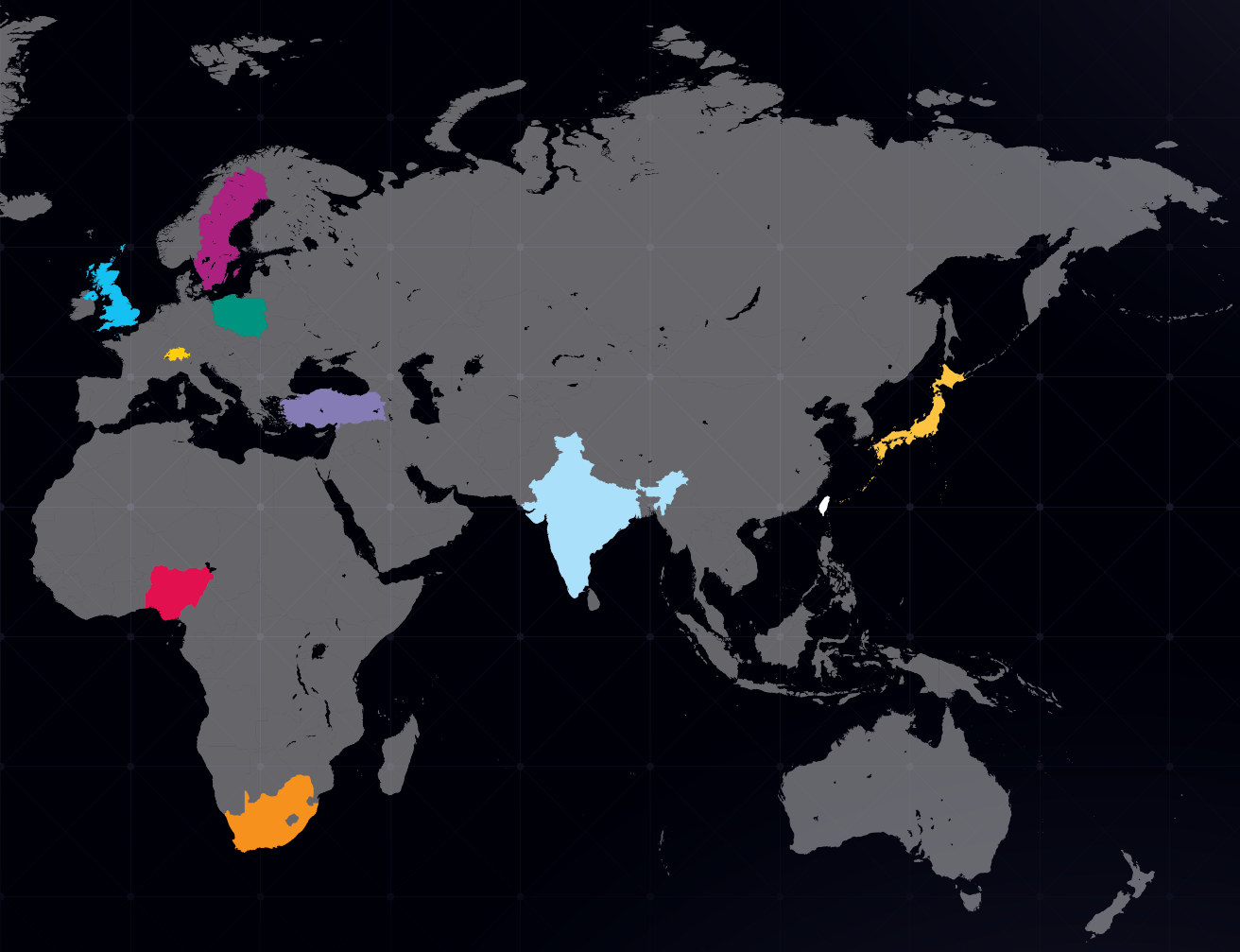

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The emergence of real-time payments

Paul Stoddart, Managing Director, Strategy and Business Development, VocaLink

In May 2008 VocaLink delivered the Faster Payments Service on behalf of the Faster Payments Scheme – it is the largest real-time payment system in the world, operating 24 hours a day, 7 days a week, 365 days a year. The Faster Payments Service has been supporting UK businesses and consumers alike with real-time bank account to bank account transfers and we have seen significant year on year growth with over 3 billion payments being securely processed since the service was launched five years ago.

We are starting to see an increasing demand for real-time payments in other countries, with at least eleven real-time systems in operation or in development over the last decade. FAST, has gone live in Singapore, Australia is seeking to implement a New Payments Platform and the United States of America recently announced they are in the industry consultation phase.

In this supplement we share our experiences of implementing real-time payments systems and take an in-depth look at the success of Faster Payments in the UK. We also examine the challenges and benefits that real-time payments can deliver to banks and consumers as well as the advantages real-time technology can bring to government and businesses to support the wider economy and society as a whole.

Consumers across the globe are adopting a 24/7 mobile lifestyle, evidenced by the fact that m-Commerce is growing 10 times faster than e-Commerce. It is critical that the underlying payments infrastructure is fit for purpose and capable of meeting the technological demands of overlay services in the digital age. Using the Faster Payments Service as a blueprint, we expect to see more markets embracing real-time payments.

We also talk to Ian Sayers, Chief Technology Officer at Zapp, who provides some insight into the commercial potential that overlay services can bring to support the business case for banks – positioning the bank account back at the heart of payments.

"For UK banks, this is a big build... by building such robust systems, banks won't have to do so again for several years...I think Faster Payments will be a beacon of change for other markets."

Alan Koenigburg, JP Morgan Chase, 2007

Spotlight on UK Faster Payments: Five years on

Source:UK Payments Council / VocaLink

When the Faster Payments Service launched in May 2008 it was the culmination of almost a decade's worth of work to improve the speed of payment processing in the UK, starting with the Cruickshank Report and the Office of Fair Trading's creation of the Payments Systems Task Force.

In 2005 the contract to build and operate the real-time central infrastructure on behalf of the Faster Payments Scheme Limited was awarded to VocaLink. In one step it propelled the UK to the forefront of payments technology globally and the service remains the world's leading 24x7x365 retail real time payments system. However, this innovative new service had a relatively slow start in the early years as a consequence of several factors: lack of customer awareness; inconsistency of bank offerings and incomplete reach across accounts.

Initially the bank offerings varied significantly, with some offering the service online with

individual transaction limits of several thousand pounds, whilst others offered far more limited services. This was driven in part by differing approaches to fraud management. However the introduction of two-factor authentication and out of channel validation has ensured that initial concerns over fraud have been overcome and use and consistency of bank offerings of the service has improved dramatically in recent years.

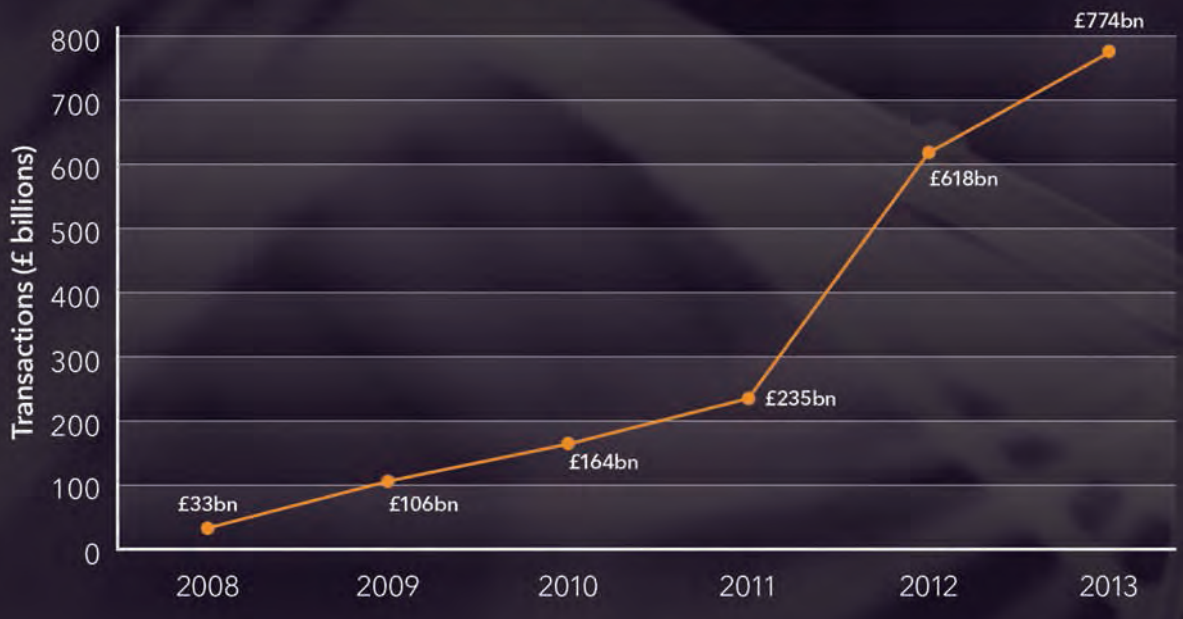
In 2012 the Payment Services Directive catalysed the industry to ensure that the vast majority of accounts could be reached by Faster Payments resulting in strong organic annual growth of over 20% in the number of one-off payments. Now, 90 million accounts are able to receive payments via the service which has had a positive impact on volumes, mainly from single immediate payments.

Businesses and Government

Early users of the service have been companies offering financial products that require immediate transfer to customers, such as short term loans as well as SMEs using the service to pay their staff. Businesses are taking advantage of the almost instantaneous functionality and near-universal reach of the service for payments to individuals such as wages to agency workers and where suppliers need to receive the value before releasing goods and services. The UK Government are also making emergency benefit payments to individuals in this way.

Over the years there has been growing usage from businesses, who are able to submit batches of payment instructions to the service via direct corporate access functionality, allowing them to create files of credit instructions in legacy Bacs format but submitting them via the Faster Payments Service. In 2011 the scheme extended the direct corporate access service to enable 24*7 processing, which is having a positive impact on volumes.

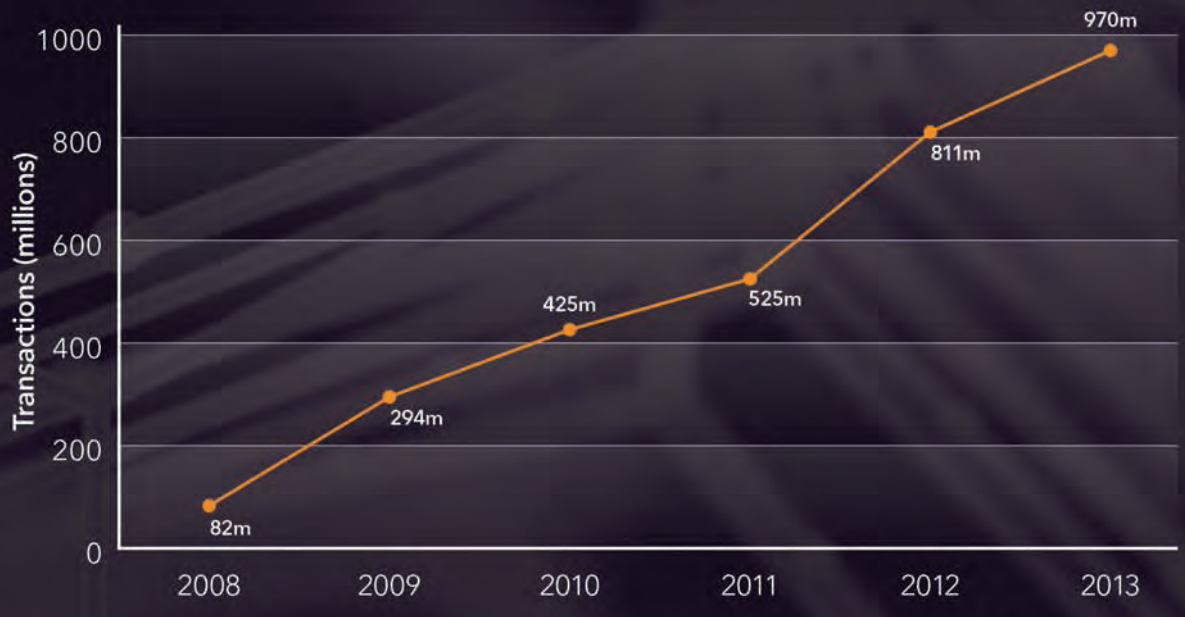
Faster Payments values



Source: UK Payments Council

There has been robust growth by businesses making one-off payments to individuals and to other businesses which has driven demand for a variety of Faster Payments Service transaction types. As availability has increased, demand for bulk corporate access has grown creating competition amongst corporates to get payments to customers quickly. One such example is insurance companies, which can use faster payments to settle customer claims. Single immediate payments are expected to grow as businesses seek alternatives to cheque payments and make greater use of online payments. A further boost may come from charities and other small organisations once electronic alternatives to cheque payments are in place.

Faster Payments volumes



Source: UK Payments Council

Consumers

Consumers are the main users of the Faster Payments Service, accounting for almost 60% of the payments made last year and the volumes are continuing to grow. More than two in three of the payments consumers made were to pay credit cards and other financial bills as well as other individuals. These person-to-person payments include those to friends or family for shares of jointly-incurred expenses, such as taxi fares or restaurant bills and bill payments. The remainder were for regular bills, like utilities and subscriptions. Transferring money instantly to friends and family members is now replacing cash and cheques. Overall Faster Payment volumes grew 20% whilst cheques fell 13% (in the year to November 2013) according to the latest UK Payment Council figures.

Last year saw a far more interesting phenomenon: the widespread adoption of Faster Payments for individual transfers of money between accounts by individuals and businesses. These 'single immediate payments' grew by 33% in the year to November 2013, and they now account for just over half the volume and value flowing through the service. This has been driven by the banks using Faster Payments as the default mechanism for customer-initiated transfers, combined with the widespread adoption of easy-to-use mobile banking applications. Looking forward, a major source of growth in single immediate payments will be increases in the number of users of remote banking services, especially mobile banking and in the number of payments that each initiates through these channels. Examples include deposits to savings accounts, payment of credit card bills or payments from parents to offspring who are travelling or who are away at university.

This trend is expected to continue as new offerings such as the Payment Council's mobile payment service, launching in spring 2014, will make initiating payments even easier for customers.

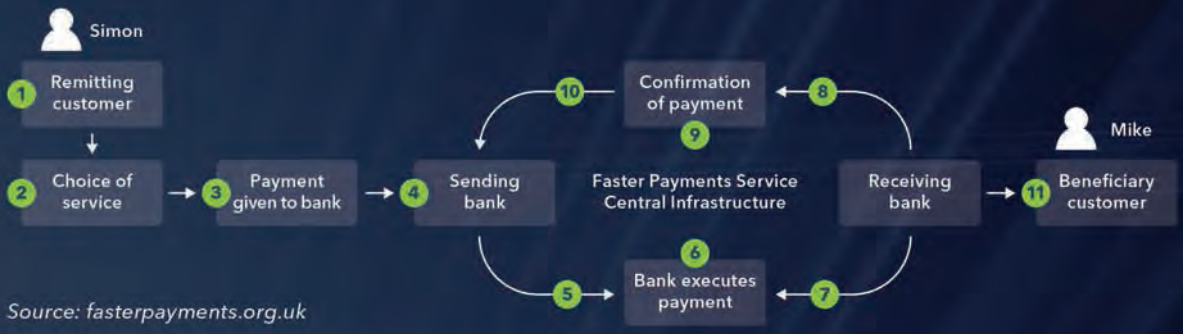
All of this has been achieved with largely the same set of scheme member banks that launched the service five years ago, but this is set to change significantly.

16 million
Peak daily Faster Payments transactions, 2 April 2013

774.1 billion
Value of Faster Payments processed in 2013

3.12 billion
Faster Payments transactions processed up to 31 December 2013

How the Faster Payments Service works



Source: fasterpayments.org.uk

When a customer makes a faster payment, it will generally work in the following way:

1. Simon wants to pay his friend, Mike, who has an account with another bank.
2. Simon instructs his bank through mobile phone, online or telephone to pay £50 today to Mike. Simon's bank carries out its normal checks to verify that he is the genuine customer. For example, they may ask Simon to provide a password or other security information.
3. In addition to Simon stating the amount he wants to pay, he also provides Mike's sort code and account number – this is the information used to address the payment. Simon also enters the name of the account he wants to send the payment to, which will appear on his statement, and any reference details so that Mike knows what the payment is for.
4. Before Simon's bank allows the payment to be made, it will check that Simon's account has sufficient funds and that the request to make a payment is genuine. In certain cases, the bank may need to hold the payment to undertake further fraud protection checks.
5. Simon's bank submits the transaction through the Faster Payments Service. From this stage onwards, the transaction cannot be cancelled.
6. The Faster Payments Service sends the payment instruction to Mike's bank (the 'receiving bank') after checking that all the relevant details are included and properly formatted, and then debits the sending bank.
7. Once Mike's bank has received the transaction, it checks that the account number is valid (note, it does not verify that the account name and number match), and then sends a message back to the Faster Payments Service that it has accepted (or rejected) the payment.
8. The Faster Payments Service credits the receiving bank with the funds and sends a message to the sending bank to let them know that the transaction has been made successfully.
9. Simon's bank marks the transaction as complete. Each sending bank will decide how this confirmation will be made available to its own customer. In all cases, once the payment has been made, a confirmation message will always be sent between banks.
10. Simon's bank confirms the fate of the payment to Simon.
11. The receiving bank will credit Mike's account with the £50 sent by Simon.

Where Mike's account is with a Faster Payment Member Bank, he should generally be able to see the credit on his account within minutes and also be able to access the funds. If Mike's account is with a non-member of the Scheme, then it may take longer for funds to be shown on his account.

Broader participation and wider adoption

Currently the service operates on a deferred net settlement basis, which means that individual member banks are exposed to the risk that one of the other members cannot meet its settlement obligations. VocaLink is supporting the scheme company, its member banks and the Bank of England to introduce arrangements whereby member banks pre-fund their net settlement positions with cash deposits at the central bank. This has been encouraged by the Bank of England as supervisor of the scheme and as the scheme's settlement services provider, it will open the door to broader participation in the service as well as significantly reducing risk.

The maturity of real-time payments in the UK is encouraging new customer propositions from innovative suppliers such as Barclays' Pingit and Zapp, a person-to-business and person-to-business and merchant service which is due to launch towards the end of 2014.

Zapp will enable consumers to benefit from real-time payments on their mobile phone banking applications, allowing secure payments between consumers and merchants. Zapp will be integrated into the mobile banking applications of participating banks, providing a seamless real-time payment choice to customers as they shop. Consumers will be able to see their account balances before they pay and choose different accounts to pay from, thereby staying more in control of their finances. With Zapp, money moves instantly from a customer account to a merchant account.

"Once the faster payments system is accompanied by pre-funding of settlement obligations by its member banks, we will have brought the advantage of real-time payments to millions of payments users at the same time as removing from the system any settlement risk associated with these payments.

This is another important step in the risk-reduction journey that began with the introduction of real-time gross settlement in CHAPS in 1996."

Edwin Schooling Latter, Head of Market Infrastructure Division at the Bank of England

UK FPS: a snapshot

Availability	Continuous
Volume	3.2 billion payments processed since 2008 to January 2014. 970 million payments processed in 2013.
Participants	Ten banks are direct members. All UK banks and building societies now send and receive Faster Payments – either directly or as correspondents.
Clearing and settlement speed	Fifteen seconds from submission to the scheme and confirmation that the payment has been accepted from the beneficiary bank. Funds generally credited to the payer instantly (except with some agency banks) and may be drawn immediately or within 2 hours. Maximum transaction time is 15 seconds end-to-end (based on maximum processing and transmission times), although the average transaction time is lower.
Transaction costs	Payments initiated by consumers are free of charge. Costs for corporates vary.

Source: UK Payments Council

FPS supports the following types of payments

Single Immediate Payments	A payment processed in Near Real Time (NRT).
Standing Orders and Forward Dated Payments	A Standing Order is a payment that is set up in advance and then occurs regularly. A Forward Dated Payment is a one-off payment that is set up in advance.
Direct Corporate Access (DCA) Corporate Bulk Payments	A payment submitted in files by Corporates or Bureaux on behalf of a Corporate directly to DCA and then on to the Core Central System.
File Input Module (FIM)	This allows FPS institutions to submit a file of payments to FIM using the SWIFTNet FileAct or ETS channels.
Return Payment	This may be sent via FPS when Receiving FPA Institutions have accepted payments and subsequently, for any reason, determine that the funds should be returned to the Sending FPS Institutions.
Scheme Return Payments	Created in response to a rejection by a receiving FPS Institution of an Asynchronously Processed payment

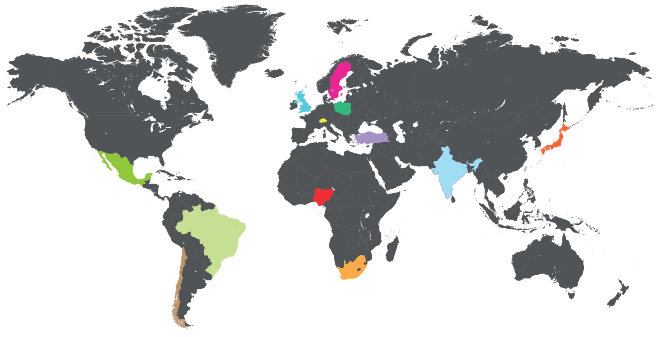
Source: UK Payments Council

The cascading effect of real-time payments

Pat Patel, IPS Product Manager, VocaLink

At least eleven real-time payment systems have been built or begun development over the last decade, including six developed in the last three years alone. What is driving this change? What are the benefits and how can they be achieved?

The World Payments Report 2013 from Capgemini and Royal Bank of Scotland classified real-time payments as a high impact key industry initiative and concludes that real-time payments will have a 'cascading effect' on the world of payments – meaning that the introduction of real-time payments in one country will generate a buzz and replication in other countries. This can be seen in Europe and is gradually appearing in Asia. Demand for real-time payments is expected to continue over the coming years. According to a survey of 200 payment professionals conducted by ACI Worldwide at Sibos 2013,[1] 83% of respondents believe that processing transactions in batches will be replaced with real-time authorisation and execution within five years.



Brazil, Chile, India, Japan, Mexico, Nigeria, Poland, Sweden, Switzerland, South Africa, Taiwan, Turkey, UK

Figure 1: Real-time deployments around the world

What is real-time?

Real-time payments systems mean different things to different people. Some have confused it with Real-Time Gross Settlement Systems (RTGS), which are specifically designed to minimise risk in high value electronic payment settlement systems and are generally suited for low volume, high value transactions. The emerging trend over the past decade has been towards low value real-time payments systems, which enable an interbank account-to-account payment that is posted and confirmed to the originating bank within one minute (so the payee receives and can use the value

instantly and the payer has confirmation of the status of the transaction). The major variations occur with the frequency of settlement, which can be in real-time or periodically throughout the day. There are three ways to view real-time payment systems today:

1) **Authentication:** *A promise to pay, well known in the world of retail payments and card transactions*
2) **Posting:** *Funds are made available to the beneficiary account in real-time. A synchronous transfer of irrevocable funds*
3) **Settlement:** *Instant settlement of outstanding obligations between financial institutions*

What is driving the need for change?

As commerce around the world becomes a 24/7 real-time reality, driven largely by digital technology, there is a strong need for payment mechanisms to move in harmony with this new world. The fundamental requirement is to be able to move money from one account to another immediately, with certainty and convenience and at low cost to all stakeholders. Existing payment infrastructures do not currently have this capability and most are not compatible with the online and mobile channels.

The main drivers will invariably depend on the structure and dynamics of the financial services industry, which varies from country to country. This will also determine when and how a real-time payments system is deployed. One of the main drivers is the appetite and motivation of key stakeholders. In most cases the central bank plays a key role in driving forward a real-time systems project, largely through industry consultations and identifying a national payments roadmap.

COUNTRY	CATALYST
Australia	Central Bank
Mexico	Central Bank
Singapore	Central Bank
South Africa	Bankers Association
Switzerland	Majority of banks and Central Bank
UK	Competition Authority

Figure 2: Catalyst for change

South Africa is an interesting exception in that the commercial banks identified the need for a payment service that would give the general public the ability to transfer funds easily and in a manner that made funds available to the payee immediately. Seven banks began collaborating in 2005 to develop a new clearing and settlement mechanism called Real-Time Clearing (RTC), in cooperation with the South African Reserve Bank and the service was implemented in March 2007.

In the World Bank's *Outcomes of the Global Payment Systems Survey 2010*, six key factors were identified as having triggered the reform of payment systems worldwide[2]. The most important were the need to improve efficiency, responding to technological innovation and a need to reduce systemic risk.

1	Need to improve overall efficiency of the payment system
2	Response to technological innovations
3	The need to reduce systemic risk
4	Demand from the market for better payment system/settlement services
5	Demand from end-users for better payment and settlement services
6	Demand from government institutions for better payment services

Figure 3: Leading factors that have triggered the reform of payment systems worldwide

1 The survey of more than 200 financial industry professionals was conducted by ACI Worldwide at Sibos 2013 in Dubai on September 16-17, 2013. The global survey includes responses from decision makers at commercial banks, retail banks, technology providers and credit card/payments providers.

2 The survey was based on a sample size of 120, including central banks and financial service associations.

Findings from Lipis & Lipis research[3] on the market potential for real-time payments in 2013 found that a number of central banks, governments and payments associations are currently focused on the development of financial inclusion initiatives, modernisation of payment systems, decreasing the use of cash for payments and promoting competition within financial services.

Another key stakeholder is the Automated Clearing House (ACH), the operator of the computer based clearing and settlement facility for the interchange of electronic debits and credits among financial institutions. Most, if not all, ACHs are typically owned by financial institutions. For ACHs, important factors driving change include: the desire to increase relevance within the payments chain through the delivery of new technologies to grow their business; to circumvent the threat from card schemes and non-banks who are seeking to move their products into traditional and new payment domains and to avoid commoditisation occurring within traditional clearing and settlement services.

What are the benefits?

Given the size of the industry investment, it is crucial to define the benefits. Over the past few years there has been growing clarity over the benefits of real-time systems. These benefits are broadly in sync with the drivers of change outlined above. Real-time enables a 'higher level of service, creates new revenue streams, enables new payment channels, lowers risk, improves efficiencies and reduces the cost and reliance on cash and cheque processing'[4].

The most crucial benefits for banks is that real-time services, delivered by an ACH, put the bank account at the centre of the payments relationship and enables banks to obtain a stake in the mobile payments space. Ultimately it offers the ability to meet the expectations of retail and corporate customers for real-time payments in an online and mobile world, which could reduce potential disintermediation of banks. Other benefits include a reduction in transaction costs, as it is less expensive than RTGS and the ability to provide a better service through the capability to add more information, if modern payment message formats such as ISO20022 are used.

A practitioner based approach

The complexities involved from project initiation right through to operation should not be underestimated. VocaLink has amassed a wealth of knowledge and expertise of real-time payments systems following key roles in deploying and operating the UK Faster Payments Service, the LINK ATM network and FAST a new real-time system in Singapore, which went live in 2014. Our experience in Singapore suggests that we can offer a great deal of practical assistance throughout the lifecycle of a real-time payments system deployment. We have successfully run the UK Faster Payments Service, on behalf of the Faster Payments Scheme, for over five years which has provided invaluable practitioner knowledge and insight.

3 'Market Potential for real-time payments', by Lipis & Lipis, 2013

4 'What will be the role of bank accounts', Global Payments Forum 2013, NACHA

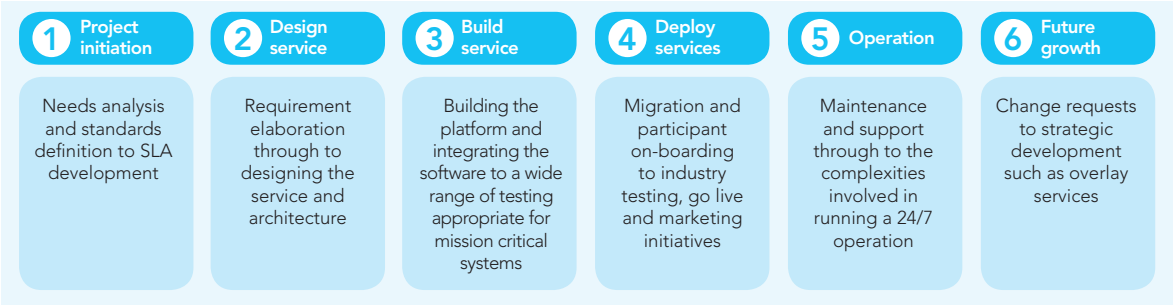


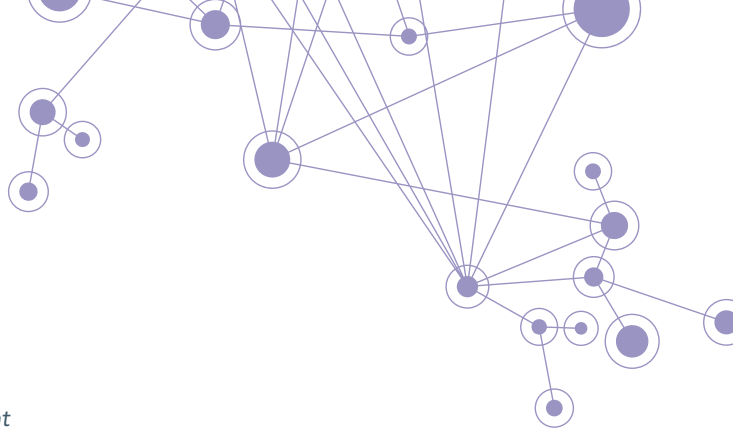
Figure 4: The lifecycle of a real-time payments system deployment

VocaLink has engineered a solution to cater for the universal needs of the market, based on our experience of building and running mission-critical systems. Our discussions with banks, ACHs and central banks around the world have revealed a strong demand for expert support and guidance. For example the complexities involved in operating a 24/7 real-time system is a massive departure from operating a batch system and/or systems which rely on off-peak hours for maintenance. Other major challenges vary from; how to deliver and coordinate multiple stakeholders, how and what's required to on-board customer banks and the best approach to utilise the mobile and online channel for payments initiation. VocaLink provides experienced people to support a project throughout its lifecycle, from project initiation right through to running an effective operation. We also support the formulation of the end-to-end systems design, expertise in the development of scheme rules and documentation of business, operational and generic roles and responsibilities. Practical experience of the key stages and the potential pitfalls reduces the cost and increases the speed of deployment whilst enhancing the efficiency of the infrastructure, particularly when considering how to exploit the real-time system capability to create value for end users.

Overlay services are key to the business case

Overlay services can be defined as any payment service that connects to a clearing and settlement infrastructure and in most cases add greater functionality for users. These services are likely to be tailored to particular contexts and/or types of customers. Digital technology, such as mobile, phablets and tablets, provide great tools to access payments services with the propensity to provide greater functionality than current access mechanisms.

The UK experience suggests that it has taken years to develop and deploy new services that use the Faster Payments Service. Within the UK, the majority of the real-time traffic has been orientated towards:



I. **Consumer-initiated payment:** *person-to-person, credit card repayments, last-minute bill payments, catalogue/mail order and transfers to savings accounts.*

II. **Business-initiated:** *payment of wages, state benefits, top-up of virtual accounts and from large businesses. It is the Business-initiated payments that have generated income for banks in the UK.*

In the coming years this profile will change as digital payments initiation services become widespread. We are beginning to see this in the UK, for example with Barclays' PingIt and Buyit propositions, the Payments Council's Mobile Payments Service Paym and, later this year Zapp, which are orientated towards the person-to-person, person-to-small business and person-to-business markets. Zapp will enable a wider community of banks to be able to provide a differentiated payment service through their bank app, including consumer payments to sole traders and small businesses, e-Commerce and m-Commerce.

Overlay services have the potential to generate revenues for banks and can provide enhanced value propositions when packaged up with coordinated information. A good example is that of the car sales process – a seller can receive payment while the buyer is present, and the buyer could do all the necessary checks, transfer ownership and purchase insurance at the same time. The potential to provide enhanced and convenient propositions for consumers, SMEs and corporates are endless – if the underlying real-time infrastructure and the payment initiation mechanisms are synchronised across the industry. In our experience, a practitioner-based solution helps communities adopt real-time and take advantage of the benefits of the infrastructure.

The future of real-time

VocaLink has been running a real-time payment system for over five years in the UK on behalf of the Faster Payments Scheme with nearly 1billion payment transactions processed in 2013 alone. It is only now that we are beginning to see real innovation occurring for users, but this is just the start of an enduring collaborative journey.

Over the coming years as interest in and adoption of real-time systems grow, we are likely to witness a cascading effect, creating regional hot spots. When this starts to occur, the demand for multicurrency, cross-border payments in real-time is likely to grow. Naturally the challenges will revolve around interoperability, settlement and how differences in schemes can be negotiated. Connecting domestic real-time systems offers an intriguing future for cross-border real-time payments.

Overlay service propositions to end users are crucial for meeting stakeholder needs and for commercial success. The current focus is around the development of the person-to-person and person-to-business use cases. The next logical steps and areas that we are currently exploring are the business-to-business, business-to-person and government-to-person use cases. Current thinking revolves around how greater alignment of payments information and non-payments information can create benefits for all key stakeholders. In time, we are also likely to see third parties allowed secure access to be able to develop a plethora of use cases.

The benefits of real-time payments

Kris Kubiena, Proposition Delivery Director, VocaLink

The launch of a national real-time payments service, such as the Faster Payments Service in the UK, provides the foundation for a range of new banking and payment offerings, particularly in the mobile and e-Commerce areas.

While a basic real-time system brings benefits in its own right such as 24/7 instant payment transfers, it is the overlay services, such as digital payments initiation propositions, that utilise and leverage real-time capabilities that underpin the banks' business case and provide maximum returns on investment. The underlying infrastructure enables banks to launch game-changing products and services that provide real customer value and position the banks, in particular the bank account, at the centre of the payment process. The latter is extremely important as many non-banks are beginning to extract great value from the payments process and more importantly the customer relationship.

The full extent of the benefits of a real-time service will vary because it is largely dependent on the vision and motivations of the key stakeholders and how the core infrastructure is implemented. For example, if developed using the ISO20022 messaging standard a richness of data can be captured to generate efficiencies and commercial value for participants and end users, in particular businesses and government. The underlying real-time infrastructure needs to be designed in a way that is conducive to the development of new services that create value for end-users. Ensuring frictionless access to the real-time infrastructure is critical.

Over the years VocaLink has invested a great deal in understanding the business case for real-time, whether for the economy, society or for key stakeholders.

The economy

At a macro level, the introduction of real-time payments offers tangible benefits to a national economy through increasing liquidity and efficiency of the payments system, which in turn will support GDP growth. These benefits will have a particularly positive impact on government (in the form of increased taxes and lower costs to the treasury or finance ministry), but will also have applicable benefits to central banks and other payment industry stakeholders.

The most pronounced benefit to an economy is likely to be the impact of increasing the velocity of money. In simple terms, this means that by moving to real-time payments from batch systems, money can be used to make a greater number of

purchases or other transactions within the same elapsed timeframe; effectively, the productivity of money increases. The scale of the benefit will largely depend on the existing infrastructure and speed of payments. In Australia, where there is currently no central payments infrastructure and electronic transactions make funds available the following day, an analysis undertaken in 2008 by the Centre for Economics and Business Research (CEBR) found that the implementation of a real-time service could positively impact GDP by as much as 1%.

In countries where an efficient central clearing and settlement function already exists, the economic benefits will be less dramatic. Nevertheless, even where there is a highly efficient batch-based payment solution, there are undoubtedly still benefits that will be realised through a higher velocity of money and less reliance upon cash (and a reduction in the crime and security issues associated with cash handling). There is also an increased transparency across the economy, as more transactions move from the 'grey' economy to the 'white' economy.

For central banks, there is a straightforward benefit in the better management of risk across the economy: a real-time transfer is much more transparent than a batch payment with its opaque liabilities.

Banks

In the UK, it has taken time, but we are beginning to see the value being created for banks and end-users as evidenced through collaborative innovation such as the Payments Council's mobile payments service Paym, through to individual bank innovations such as Barclays' PingIt. The real value resides within the development of overlay services to end-users such as digital payments initiation services. It is these services that have the

propensity to generate lucrative revenues for banks, in particular the person-to-business propositions. A compelling vision and roadmap is required to capitalise on the opportunity. In the UK, Zapp (due to go live later this year) is generating momentum as banks begin to realise the benefit of enhanced consumer engagement and responsible spending. A great deal of insight has been garnered during the building of the Zapp business case for banks and merchants, which has global applicability.

One of the major challenges we have encountered during conversations with communities around the world has been the perception that these services are a threat to existing bank revenue streams. However, in many countries a number of these existing revenue streams are already under threat. Pressure is mounting on interchange fees and these revenues are likely to be eroded over time as a result of regulation. In addition, new entrants are offering superior services to both consumers and merchants and capturing a slice of these existing revenue streams and also increasing customer loyalty with their own brands.

By moving to real-time account transfers, banks can position themselves perfectly to leverage these new technologies and introduce services that are as good or better than those delivered by new entrants. Banks are now starting to realise the huge potential this reintermediation of the payments ecosystem brings.

Businesses and government

A basic real-time payments capability delivers benefits to businesses and government as payers and receivers. It is not anticipated that businesses will transfer all their payments to real-time services; there are many payment applications, such as salaries and some trade payments that work perfectly well on existing batch-based services and that do not need to be made in real-time. However, a growing number of applications are benefitting from real-time and in the UK, volumes of business payments being processed through Faster Payments are increasing steadily. Applications such as weekly and daily wages lend themselves perfectly to real-time, and similarly, the dispersal of urgent payments such as insurance pay-outs, short-term loans or business-to-business trade payments that would result in penalties for late payment are all moving from batch-based services to real-time. The government is also using the system for urgent benefit payments.

A number of significant benefits to businesses will be realised through digital initiation payment services, such as those use cases outlined in the Zapp service. In these applications, the businesses (or merchants) are operating as receivers of real-time payments and there is a compelling range of benefits that span the various use cases (e.g. funds in the bank account and available as part of the purchase – no delays or subsequent reconciliation issues – resulting in a better customer experience due to fewer dropouts during the purchase process).

Consumers

The benefits of real-time account transfers and the associated digital payments initiation services to consumers are largely non-financial as most consumers do not pay for making payments today. Nevertheless, a number of emerging propositions are highly desirable and consumers are prepared to pay a premium for them. These services are secure, easy and above all, convenient. The immediacy of the solution fits perfectly into today's lifestyle, where 'on demand' is critical. For example the Zapp proposition enables a seamless purchase experience, allowing greater choice and even enables consumers to check their balances before a purchase is made.

With the right products being made available by the banks, consumers are put firmly back in control of their spending. They can check fund availability, pay who they want, when they want and from wherever they are, all from their bank account, from a single mobile device. There is no need for cards, a cheque book, or to a certain extent cash.

A survey of 10,000 consumers undertaken by VocaLink in February 2013 identified that 35% would be more likely to use an alternative payment solution if it were offered by their bank and 63% of people familiar with mobile payments would trust a solution offered by their bank. The clear view that has been expressed is it is the banks that are trusted and expected to deliver these services.

The key hurdle for many banks and regulators however is how to make a successful move from a heritage environment to a new system – a manoeuvre that must be negotiated strategically, cost-effectively and with experts on board to help navigate this significant business change. Understanding how a real-time system can benefit the key stakeholders and what the commercial benefits are will be crucial to the business case. Real-time payments will be the backbone to successful innovation for banks and the adoption of this capability is a natural step in their evolution as they look to stand their ground against new and non-traditional entrants.

"Our customers' use of mobile banking is growing rapidly. Introducing Zapp to our mobile banking services will mean customers can benefit from convenient, fast and secure ways to pay using their mobile devices."

Brendan Cook, Head of Retail Banking & Wealth Management at HSBC

Zapp: a game changer for banks

Ian Sayers: Chief Technology Officer, Zapp

In 2014 the UK mobile banking and payments landscape is set for a dramatic change as a new service comes to market offering consumers and merchants mobile payment capabilities regardless of which bank they use.

The new service, Zapp, will allow all UK banks to add a digital payments initiation capability within their existing mobile banking app. Due for launch in 2014, Zapp has been adopted by HSBC, Santander, Nationwide, first direct and Metro Bank on the banking side and WorldPay, Optimal Payments, Realex, SagePay and Elavon on the acquiring side. These institutions represent more than a third of UK bank accounts and 60% of UK merchants.

Zapp will create the next wave of payment innovation, delivering significant benefits to the UK economy. According to the Centre for Economic and Business Research, 20 million adults will use their mobiles to pay for goods and services by the end of the decade with the value of purchases tripling from current levels to £14.2 billion in 2018. By offering Zapp, banks will help to reduce fraud, lower the cost of cash to the UK economy, put consumers more in control of their finances and help businesses across the UK with their cash-flow by providing an instant settlement payment method.

Zapp is a reaction to today's digital age, where everybody wants everything instantly: payments are no different.

Having a robust, real-time infrastructure greatly simplifies the layering of new services. It offers

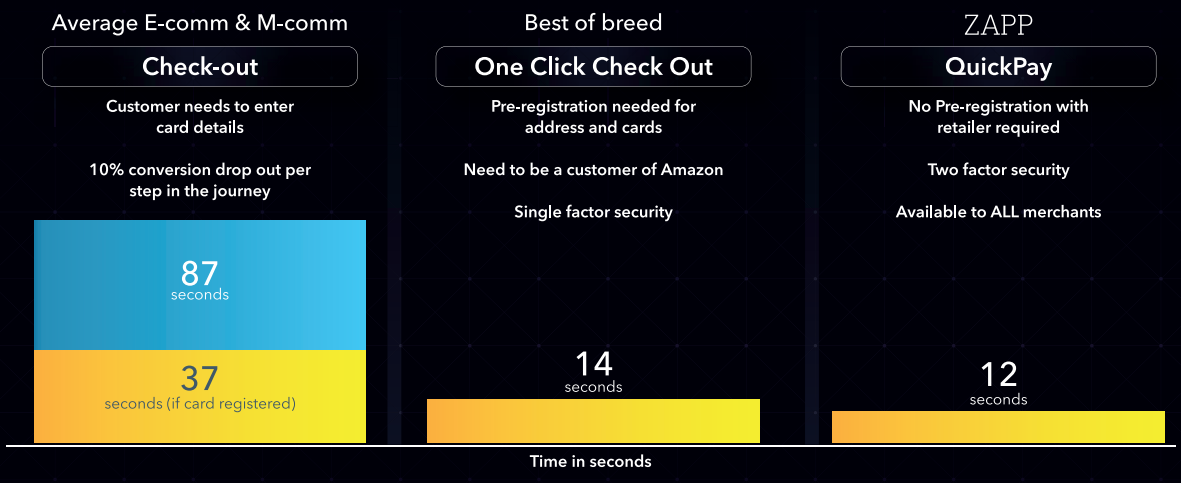
consumers a much simpler and more secure way of doing things. First generation mobile payment services tended to rely on users setting up connections to the people that they wanted or needed to move money to – effectively setting up bilateral beneficiary arrangements. This is analogous to a point-to-point communication, while the Faster Payments Service is the equivalent of an IP network, which facilitates universal communication.

Zapp is not a mobile wallet. Zapp payment functionality resides within the banking app on the consumer's smartphone. When the user clicks on the 'Pay by Zapp' button on a retailer's website or in store their banking app is automatically launched and the customer is presented with a choice of accounts, their current balance and details of the transaction. The balance function is something that has gone down well with consumers during the extensive primary research and product testing phases.

In the background, a token is passed between the merchant, Zapp and the bank, representing a request to pay. Once authorised, by the bank, the only customer information sent to the merchant is the name and (optionally), the customers address held by the bank, which can be used as the delivery address for the goods being purchase. This means that the merchant does not have any customer account data to process, removing one

"Listening to, and responding to customers and their needs is at the heart of what we do at Santander. Our customers want the choice to be able to pay on the go using mobile technology and the Zapp proposition is second to none with its capabilities. Santander is delighted to be involved with this initiative as we think our customers will be, when they start to use it. Zapp helps us meet the growing demand from our customers to use their mobiles to pay for goods and services swiftly and securely. With the vast majority of UK merchants on board, we expect to see the rapid take up of payments powered by Zapp."

Steve Pateman, Executive Director, Head of UK Banking, Santander



more security issue. Compared to a typical card transaction, where all the information a fraudster needs is passed over, the potential for fraud is greatly reduced. The user only has to deal with their normal log-in for the banking application, removing the need for additional passwords and other security steps – overall fraud levels could be considerably reduced.

The key to success will be in the user and merchant uptake of the service, which is why the company has concentrated on getting a critical mass of banks and acquirers signed up before taking it to consumers.

"I am truly excited to announce our lead financial institution partners: HSBC, first direct, Nationwide, Santander and Metro Bank. Together with our already announced acquirer partnerships, Zapp will go to market with real scale offering simpler, more secure and efficient payments to millions of customers and businesses. I am delighted that these financial institutions and acquirers have chosen to innovate to deliver value to their customers, lead the market and deliver huge benefit to the UK economy."

Peter Keenan, Chief Executive of Zapp

This network effect is likely to lead to a rapid uptake. Again, there is an historical parallel with SMS text messages, which went through similar adoption phases, only really taking off when users could contact users on other networks. The upsurge in adoption of SMS was driven by universal interoperability - in the early days usage was low and then suddenly it skyrocketed. The real value of networks lies in their speed of connectivity and reach.

This conceptual separation works both ways, in that the Zapp model has a high degree of future-proofing and portability. The model has been designed to be independent from the payment transport mechanism, concentrating on what it does, not how it does it. This also allows for seamless exportability of the service into new territories.

Consumers	Businesses
It's from your bank Your card details don't need to be shared. No account information is passed to the businesses you want to pay. Just download your bank's mobile app and you are ready to Zapp.	**Sell more** Zapp helps your customers go from shopping to successful payment in just a few clicks with no new passwords to remember or long numbers… simple!
See your balance Zapp puts you in control – see your bank account balance before you pay for anything, so that you can buy with complete confidence. Choose which account to pay from (even a credit account if available).	**Real-time** Zapp moves money instantly so that you get paid by your customers on time, every time.
Pay instantly Zapp is faster – we move money instantly from your bank account to the business you are paying with confirmation to all parties.	**Lower costs** Zapp costs less than many other payment services. No intermediaries mean lower fees.

The platform to underpin government agenda

Andrew Morss, IPS Director, VocaLink

Government plays a key role in payments systems as either a user or a regulator. Governments are among the largest users of the financial system in any modern economy. Tax collection, welfare payments and government services, from healthcare to defence, all use the financial system and this equates to approximately 30% of most countries ACH volume. Government relationship with the providers and operators of the financial systems, as both a legislator and regulator, has been a major driver of change within payments infrastructures. In recent years, governments around the world have been focusing on the structure of the financial services industry and the value it delivers to the economy. Some of the key themes that governments are grappling with range from financial inclusion initiatives, modernisation of payments systems, decreasing the use of cash and cheques and lastly, possibly most importantly in the current climate, the need to foster innovation, deliver efficiencies and business growth. Essentially it's about how citizens and businesses interact, through information and payments, in an efficient, economical and convenient way.

The introduction of the Faster Payments Service in 2008 delivered a modern real-time system at a time when the UK Government itself was implementing a unified strategy of online services, culminating in the launch of the Government Digital Strategy in 2013.

Many governments around the world have struggled to keep up with the digital age, but this is changing, driven by a growing realisation that significant cost savings can be achieved whilst meeting the needs of its citizens. In the UK this need for improved digital services is highlighted by the fact that 82% of adults are online, and while 74% of people use the internet to purchase car insurance, only 51% renew their car tax online[1]. Furthermore, findings from The Digital Efficiency Report identified that transactions online can be 20 times cheaper than by phone, 30 times cheaper than postal and as much as 50 times cheaper than face-to-face. The UK Cabinet Office believes that by redesigning its digital services, to make them easily accessible and simple to use for individuals and businesses, will result in savings of £1.7 to £1.8 billion[2] each year. Taken together, the Faster Payments Service and the Government Digital Strategy initiative represents an opportunity for a fundamental rethink in the way that governments use the banking and payments systems to interact seamlessly with citizens and businesses.

Supporting government agenda

A national payment system is the backbone of the monetary and financial system and it plays a critical role in a country's economic development. Traditionally the financial services industry relied upon a payments system to alleviate challenges of risk, liquidity, efficiency and uncertainty. However, more is required from payments systems to meet the current and emerging

needs of stakeholders. Supporting the financial services industry is essential for all governments around the world, especially as the contribution to the economy is vital. In 2011, the financial and insurance services industry contributed £125.4 billion in gross value added (GVA) to the UK economy equating to 9.4% of the UK's total GVA. Alongside supporting the growth of the financial services industry, a key ongoing theme amongst many governments revolves around how innovation and entrepreneurship can be fostered within an economy and how small and medium sized businesses can be given support for growth.

In the UK, one such initiative, Level 39, is seeking to fuse London's finance and technology sectors to create a transformation towards digital innovations. Accenture's Fintech Innovations Lab is seeking to do something similar by providing support and guidance from leading financial institutions to help start-ups to refine and test new propositions. An essential ingredient to support this community of start-ups is a modern payments infrastructure which enables frictionless access through different channels, 24/7. For example in the United States of America, card products have provided the underlying network for a plethora of new businesses and innovations from mobile wallet providers to mobile PoS solutions to value added service providers (such as loyalty and offer based propositions based on digital technologies). In the absence of an efficient real-time ACH system to provide the underlying rails, these services have fallen on the card infrastructure, which is expensive and inefficient. Card infrastructures, introduced in the 1980's, were designed specifically for the physical point of sale, retail market and not to meet the needs of mobile and online commerce. A modern real-time infrastructure enables seamless and frictionless connectivity to and from the mobile and online channels, which provides a strong backbone to enable new innovations. In the UK, the Faster Payments Service, is beginning to witness the creation of new propositions to consumers which utilise immediacy of transfers and 24/7 availability, providing differentiation against incumbent propositions. This is just the start, as new payment solutions utilising the online and mobile channels begin to enable greater access to the underlying infrastructure and provide the opportunity for new ways to interact with both consumers and businesses.

Towards new use cases

Improving access to payments systems for people, businesses and even banks plays to the government agenda of innovation and competition. For instance, overlaying new ways to digitally initiate payments could allow a more conducive environment for the promotion of financial inclusion initiatives and enable a move away from cash and cheques in both directions (government-to-person and person-to-government). The resources required to manage the process used in cheque payments is costly, not to mention hugely inefficient. As the penetration of smartphones across all demographics is very high, it serves as the perfect channel to reach consumers.

"Speeding up the UK economy as we get back to growth is now crucial to our nation. We are proud to be collaborating with financial institutions and retailers to spearhead the creation of a new payment system, which gives all of us easy access to the money in our bank accounts by using cutting-edge, secure technology through the mobile phone. The UK financial system has a rich history of speeding up the movement of money and 'Zapp' is the next evolution.

David Yates, Chief Executive Officer, VocaLink

Zapp, a person-to-merchant and person-to-business digital payments initiation service using a real-time infrastructure, begins to capitalise on the benefits for the economy. A recent CEBR study[3] highlights four key areas where it is expected mobile payments will benefit the UK economy and key stakeholders; reducing fraud, lowering transaction costs, putting consumers in control (through instant bank account balance checking at the point of purchase) and reducing cash flow issues.

The next wave of ideas will also generate substantial benefits. For example, building upon the person-to-business use case could yield large benefits through the automatic capture of tax data, which can be aggregated and used for reconciliation and end of year tax assessments. This could improve accuracy, productivity and a reduction in the current manual processes.

Much more than a mechanism for emergency payments

The immediacy of payment transfers is one of the strengths of a real-time payments system. With funds being transferred across the central infrastructure within seconds, it is ideal for making urgent payments efficiently. Where funds are needed quickly but traceability is important, real-time payments provide a sophisticated solution, especially combined with other devices, such as a mobile handset or even a pre-paid card. Where some traceability or control over how the funds are used is important, the mobile channel enables an electronic audit trail of usage. Simply by avoiding the use of cash and cheques, time and cost is removed from the process of making payments. Emergency payments, in the case of a national disaster or an immediate personal need, can be made directly and instantly into bank accounts. This allows the recipient to make payments via mobile, online or even to withdraw cash from an ATM. Digital technologies enable convenience for users and more specifically the benefits of instant notification and confirmation, budgeting, financial management and scheduling.

Richer data for efficiencies

In the case of Universal Credit, an initiative to simplify the welfare system in the UK, payroll data accompanying a payroll payment can be used to inform the Government in real-time on exactly what benefits to pay. There are also obvious benefits in terms of fraud and error reduction but the fundamental aim is to ensure that people are getting the benefits that they are entitled to. While payments are often at the centre of the interactions between government and the governed, data is a key component of a modern payments system and this is the crucial ingredient in realising the efficiencies government is looking for as much as any profit-driven enterprise. There is an amount of data that is required before a payment is effected and data that is acquired after a payment is made. By extracting the data or shaping reports to examine specific variables, government stands to drive greater efficiencies, over and above the benefits of liquidity. Better understanding of the patterns of usage offers several advantages. Richer data that highlights the activities of individuals and organisations can provide policy-shaping insights for economic benefit and the means to enhance forecasting and planning activities. Richer data, coupled with real-time payment transfers, have instant benefits of improved cash-flow, enhanced reconciliation and better business decision making.

The question for government, as both the regulator and largest user of the payments infrastructure, is whether it is able to realise the opportunity that a real-time platform delivers.

1 https://www.gov.uk/government/publications/digital-efficiency-report
2 https://www.gov.uk/government/publications/government-digital-strategy
3 http://www.cebr.com/reports/mobile-payments-to-boost-uk-economy/

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