INTELLIGENT PAYMENT SYSTEMS

AN RS2 WHITE PAPER

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HOW THE WORLD PAYS

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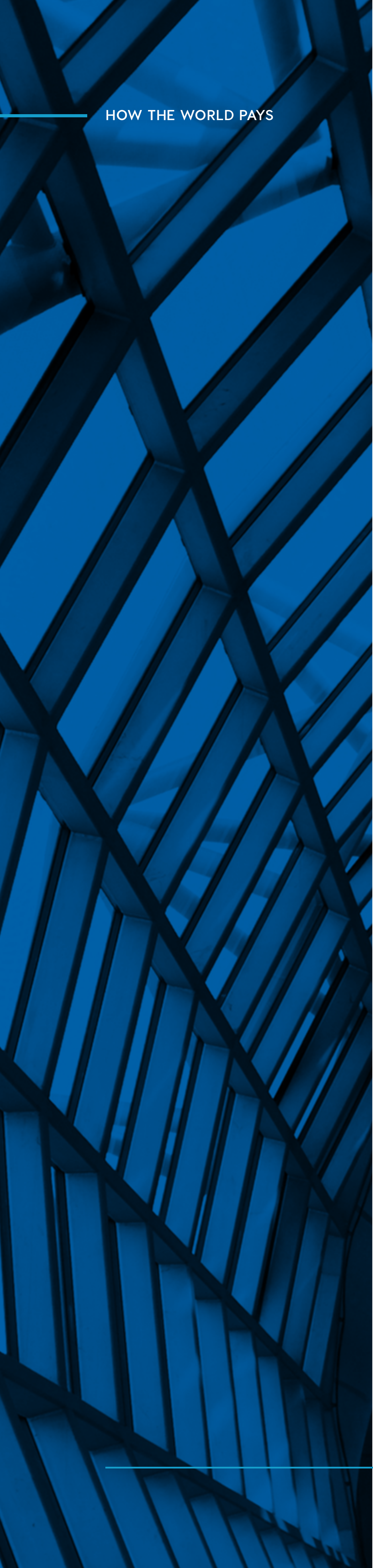

INTRODUCTION

How does the world pay? We examine current and future trends in how consumers and businesses make and receive payments.

We examine the rise of digital payment methods, real-time payments, bank account-funded payments and other so-called 'alternative payment methods', which in some countries are actually the default payment methods.

We reflect on the best ways to be open for business to the world, and how offering familiar payment methods is part of this. We examine how technology and changing consumer behaviour is helping to make the global local, and the local global – and even more local ('hyperlocal'), depending on context.

We also look at how RS2 helps power payments and is a solid partner, whether your ambitions are global, regional or domestic.

CURRENT AND FUTURE PAYMENT TRENDS

Change is in the DNA of payments, so it is always challenging to look ahead from the past. To an extent, pockets of the future also exist in the present. Payment is getting faster. It is becoming more alternative, more mobile and thus more fragmented. Payment is also becoming more personal or 'of the person' in the case of biometrics.

THE REAL-TIME FUTURE

Consumer-facing technology brands have done much to reset customer expectations around speed, convenience, value and choice. When you can send an e-mail across the globe almost instantly, why wait for a letter or fax? When you can stream digital content live, or summon a cab or meal within minutes, why wait until the bank opens in the morning to conduct your business?

Consumers, merchants and policy makers are all looking for faster payments, where funds are available on account instantaneously. There has been a resurgence of interest in real-time payment systems, which have been around in some form since the 1970s. In addition to speed, stakeholders are also looking for payments, which are more efficient, cost-effective and interoperable. Advancements in technology at both the consumer and enterprise level are making this possible.

Real-time payments have become a must-have rather than a nice-to-have for banks and payment providers. Work is underway in Australia, the Eurozone and the US on real-time payment networks, in addition to implementations live in nearly 20 other countries.

ALTERNATIVE PAYMENTS

Alternative payment methods (APMs) are expected to account for 55 percent of e-commerce turnover by 2019, with North America showing the biggest shift towards these methods, according to a Worldpay report. The growth of APMs will be driven largely by the increase in global e-commerce, and the inherent advantages of APMs over cards and other traditional payments.

APMs are typically 'push' payment mechanisms, where the consumer initiates the payment by 'pushing' it to the merchant, using details the merchant provides for this purpose. For card-based payments, the reverse is true. The merchant 'pulls' the payment from the consumer, who provides their account information.

With card-based payments, consumers are often able to 'pull' the payment back via card scheme chargeback processes. This is a significant risk and disadvantage for merchants over 'push' payments, which often operate without such a mechanism. The increasing size and frequency of card data security breaches may also cause consumers and merchants to prefer 'push'-based APMs. Consumers do not have to provide their account details to effect payment – and merchants do not have to transmit, process or store these details.

MOBILE PAYMENTS

When the smartphone is the device of choice for accessing the internet – and the only means someone has of getting online in some countries – this cannot but change retail journeys and increase mobile-enabled commerce.

A Pitney Bowes study found that shoppers often used their mobile device for part of the shopping journey, even though mobile was only used to complete a purchase on a third of occasions. Roughly half the shoppers in Singapore, India, Mexico and China were likely to use a mobile device for browsing. When it came to order tracking, over half those in China, Hong Kong, India, Singapore and South Korea used a mobile device.

Browsing, researching and tracking goods aside, m-commerce will see a massive uptick, partly because there are so many different ways to pay using a mobile device. These include web-based mobile payments, mobile wallet payments from technology companies and retailers, person-to-person transfers, contactless payment via either NFC or QR code, and carrier billing.

THE RISE OF BIOMETRICS

Identification and verification has always been at the heart of banking and payments. With the rise of e-commerce and remote transactions, there is increasing interest in bringing together physical and digital identity. And doing so in a more convenient way than traditional passwords.

Fingerprints, face, voice and iris recognition, eye prints, finger veins and heartbeats. The use of biometrics or 'something you are' within financial services is on the rise. Biometrics are often felt to be more convenient and harder to fake than passwords. However, they are also harder to change if compromised, so securing their capture, transmission and storage is paramount.

Biometrics have been used in other industries for some time (e.g. for access management), yet the technology is probably towards the beginning of the Gartner 'hype cycle' within financial services. In this way, biometrics is probably five years behind the mobile technology hype. Advancements in technology will help bring down the cost of biometric sensors and devices, as well as improve response times and biometric use cases. The public acceptance of biometrics will also change over the next 5-10 years as the technology becomes more widespread.

BLOCKCHAIN

Stock exchanges, fund houses, central banks, consortiums of banks, private companies and venture capitalists – everyone is either investigating or investing in the Blockchain, or both. We seem to be right in the middle of the Blockchain 'hype cycle'. Distributed ledger technology is being touted as the solution for tracking assets, executing contracts and modernising payment infrastructure.

No-one has come up with the so-called 'killer app' for Blockchain payments yet. However, this does not mean that it does not exist. The idea of an open, public bookkeeping system on the internet, which functions without trusted intermediaries, is disruptive. Blockchain is included here as a current trend, not necessarily because it represents new rails for payments in the short-term, but because it is analogous to innovation. It stands for the drawing together of various concepts, which could yet have a disruptive impact on business models and use cases.

"We present five important future payment trends here. However, the future of payments may yet be more radical – it may not be about payments at all. Firstly, payments may simply disappear as they just happen seamlessly in the background. Secondly, the value of payments may be in the data that travels with payment, rather than the actual transaction message itself."

Radi El Haj, CEO, RS2

THE MORE DIGITAL, THE MORE LOCAL?

Consumers and businesses like what they know, and know what they like. Payments habits are strongly national, and no one is necessarily going out of their way to pay in a new way (with the possible exception of those in Scandinavia). In the case of both face-to-face and online payments, it seems the more digital the payment, the more local it becomes.

THE GLOBAL GROWTH OF DEBIT CARDS

The world is paying increasingly digitally. Global non-cash transaction volumes grew 8.9 percent in 2014 to reach 387.3 billion, according to the 2016 World Payments Report by CapGemini and BNP Paribas. This was the highest growth rate since the report was first published in 2005. The growth is being driven by developing markets, which recorded a 16 percent increase in the use of non-cash (digital) payment means. Mature markets recorded growth of six percent.

Cards are the fastest growing non-cash payment instrument since 2010. Debit cards accounted for the highest share (45 percent) of global non-cash transactions in 2014, as well as being the fastest growing payment instrument, the World Payments Report found. This growth is being driven by the expansion of the banked population globally and the fact that many first-time account holders are given a debit card when they open a current account.

All major developed markets in Europe also continued to show significant growth in the number of debit card payments, according to the PCM European Payment Cards Statistical Yearbook 2015-16. There were 42.9 billion payments or €1,918 billion spent on debit cards across Europe alone in 2014, increases of 9.4 percent and 8.6 percent on 2013 figures respectively. Financial inclusion aside, debit cards are increasingly being used for everyday payments, often at the expense of cash or cheques. Technology is also playing its part in the move towards lower-value debit card payments. More and more issuers are equipping their debit cards with contactless payment functionality. Meanwhile on the acquiring side, there are mandates for contactless acceptance in many markets.

Payment habits are strongly local. They have developed over time and have been shaped by various cultural, political, economic and technological factors. Debit cards exemplify local payments because there is nothing more local to a customer personally than the debit card connected to their bank account.

With debit cards, it really is a case of the more digital the payment, the more local it is. However, local payment mechanisms also bring with them the difficulties of country-specific configurations and domestic protocols. It is widely acknowledged that ISO 8583 (financial transaction card originated messages) is probably one of the most heavily-modified standards at a country and scheme level so much so it has almost become a 'non standard' standard.

"Any business looking to expand outside its home market should assess the local and global credentials of its prospective partners. Acting local is not as simple as it sounds. At RS2, we understand that the practical, sleeves-

up experience of local payment methods and protocols count for more than abstract, ivory-tower knowledge."

Radi El Haj, CEO, RS2

ONLINE ALTERNATIVES

The internet changed everything. It changed how we shop, bank, date and deal with everyone from family and friends, to businesses and governments, customers and suppliers. Because the internet links two endpoints on a network, it conflates both distance and time. It makes the global local, and the local global in real-time.

The internet brings the world to the user's home, office or wherever they are via their mobile device. Similarly, it brings the user and whatever is happening with them locally to a global audience. Concepts such as web mapping and geolocation have also helped to make the local hyperlocal. Whereas before we turned the pages of a map or atlas, now we can pan or zoom our way across an area to discover shops, bars, restaurants and places of interest. This new hyper-locality has kick-started new applications and business models (e.g. Tinder and Groupon), and re-animated the classified adverts of old online (e.g. Craigslist and Gumtree).

However, this electronic 'global village' is not one unified community. This is particularly apparent with how people choose to pay and be paid online. The US and UK love credit and debit cards in the bricks-and-mortar world and happily use them online, too. Outside of these card-loving countries, the payments landscape is more mixed, more alternative. The growth of e-commerce is driving take-up of local alternative payment methods (APMs) not running on international card scheme rails.

There are currently more than 300 APMs worldwide. They range from real-time bank transfer, e-wallets and mobile wallets to direct debit, cash-on-delivery and e-invoices. For example, merchants selling online in Brazil have to accept the post-pay Boleto Bancário option, which accounts for around 15 percent of online payments. Merchants selling into the Netherlands have to accept iDEAL, as the Dutch make 56 percent of their online payments (€18.1 billion) using this real-time bank transfer method. In Russia, acceptance of e-wallets such as Qiwi, WebMoney and Yandex is simply a must.

"If I had to generalise, I would say that with a high banked population, online banking-based APMs are popular in Europe. In Asia e-wallet are popular, in Africa mobile wallets and e-cash in Latin America," comments Radi El Haj, CEO, RS2 .

According to a Worldpay report, APMs overtook card payments in 2015, claiming 51 percent of global e-commerce turnover. APMs are actually the default way to pay in many countries, so much so the term 'alternative' is a misnomer. One thing is clear though: the more a business diversifies outside its home market, the more it must adapt to local conditions, which includes local payment options.

"Whether you are trading face-to-face in stores, online or both, payment is becoming more digital and more local. Banks, PSPs and merchants must accept that unless they can localise payment, they will miss out on sales."

Radi El Haj, CEO, RS2

SELLING EFFECTIVELY CROSS-BORDER

Selling effectively cross-border could be the subject of an entire thesis in its own right. There is no generic one-size-fits-all template because the devil really is in the detail. Nevertheless, in a technology-orientated industry such as payments, it is easy to jump to a technology solution. While technology is important and has to be fit-for-purpose, there is no substitute for really understanding local consumer and merchant needs.

What do consumers really prize? They value product variety which is easy to shop, whether they are visiting a physical or online store. They value being able to pay in a manner that is familiar and secure. If they are shopping online, easy and low-cost options for shipping and returns are important, as is reliable and quick delivery. These are the broad principles, but naturally, this will look different country to country.

What do merchants really prize? They value an approach that is omni-channel by default, even if they do not trade through every channel immediately when they diversify into new markets. Merchants value geographic and acquirer coverage or reach. It is often overlooked within the payments industry, but merchants' core business is not payments. Even the largest international merchants may not have huge numbers of staff dedicated to payment operations and implementation. They value solutions that are easy to integrate and as out-of-the-box as possible. And they like value-added services that help them increase revenue, cut costs and improve their business.

"When it comes to selling cross-border, localising language, price, currency and applicable taxes are pretty much table stakes. Merchants also have to accept local payment methods. This may also include having some way of dealing with post-pay or cash-on-delivery if this is applicable within a particular country,"

says Radi El Haj, CEO, RS2.

"What's more, merchants also have to manage fraud effectively. Booking more sales is relatively straight-forward. But booking the right type of sales, right-first-time is trickier. You really need to take account of fraud differences by country, channel and sector at the very least. Adapting other business and operational processes for local needs is also critical. This includes everything from supply chain and logistics to staffing and training. No one should underestimate the time and effort required for local adaptions,"

concludes El Hadj.

HOW TO ENABLE GLOBAL PAYMENT

Multiples of payment methods, currencies, sales channels on the customer-facing front-end are important for clinching sales. However, this can magnify complexity, cost and lead-times on the back-end. Here's how we strike the right balance for our customers between choice and customisation, and speed and cost-to-market.

FRONT-END

PAYMENT METHODS

Convert browsers into buyers wherever they are in the world by accepting a wide range of payment methods. Our APIs make switching on new payment methods pain-free, either at launch or later in the project.

CURRENCIES

Payments is almost international by default. We offer domestic and international clearing and settlement of payments with full multi-currency facilities in more than 167 currencies to power your business internationally.

SALES CHANNELS

End-consumer don't really think of themselves as omni-channel shoppers. Nor do they care to which sales channel the merchant or acquirer books revenue. We help our customers with fuss-free trading across various offline and online channels. Revenue and Expenses are booked on the designated accounts for easy reconciliation

LOCAL KNOW-HOW

Localising the offer via the language, sales channel, device and so on is not an abstract concept. We deliver this in practice to our customers on the ground wherever they are. We have more than 20 years' experience serving the diverse needs of our customers worldwide.

BACK-END

PLATFORM

We have a global acquiring platform to match your global growth ambitions. Irrespective of the country or region, there is only a single version of our platform. This is how we can implement projects 40-50 percent quicker than our competitors.

MODULAR AND WORKFLOW DRIVEN

Take the modules you want, leave the ones you don't. With our parameter-based modular structure, it really is that simple to tailor existing modules and add new ones with minimum time, cost and effort. Define your workflow to simplify and control your business from the service and operation perspective.

AGNOSTIC

No matter what terminal hardware or applications your merchants run, our systems are agnostic. They integrate with everything and everyone for maximum efficiency. This makes it quicker, simpler and cheaper to roll out to new stores, countries and channels.

MANAGED SERVICE

Outsourcing to a trusted partner via a managed service saves all around. We help our customers save on internal investment in technology and staff recruitment, training and retention. We take care of things, so our customers can concentrate on their core business.

SUMMARY

Payment habits are strongly national. No one is necessarily going out of their way to pay in a new way. So, as the rise of local debit card payments in the face-to-face environment and alternative payment methods in the online environment proves, the more digital the payment, the more local it is.

However acting local is not as simple as it sounds. There are country-specific configurations, domestic protocols and standards that are so heavily modified that they become almost 'non-standard' standards.

Any business looking to expand outside their home market should assess the local and global credentials of prospective partners. Payments is an important part of the mix. A long-term partner should have a fit-for-purpose global platform to match your growth ambitions. Their approach should be modular and hardware agnostic, preserving choice and customisation on the front-end, while cutting speed and cost-to-market on the back-end.

ABOUT RS2

RS2 Software plc is the publicly-listed company behind the BankWORKS® payment processing software used by major banks, payment service providers and other financial institutions. The company has a head office in Malta and offices in Germany, Jordan, the Philippines and the US.

Established in 1988, RS2 Software plc has continually focused on developing and implementing highly scalable, reliable and flexible card payment processing solutions. As an industry-leading, end-to-end solution provider for card acquiring, card issuing and ATM services, we support all aspects of authorisation and message switching, transaction routing, domestic and international clearing. Full multi-currency facilities in more than 120 currencies are available for the cross-border clearing and settlement of payments.

BankWORKS® is the transaction processing power behind some of the world's most innovative and fastest growing payment companies. It is deployed by more than 100 banks, payment processors and financial institutions around the world.

For more information visit **www.rs2.com**