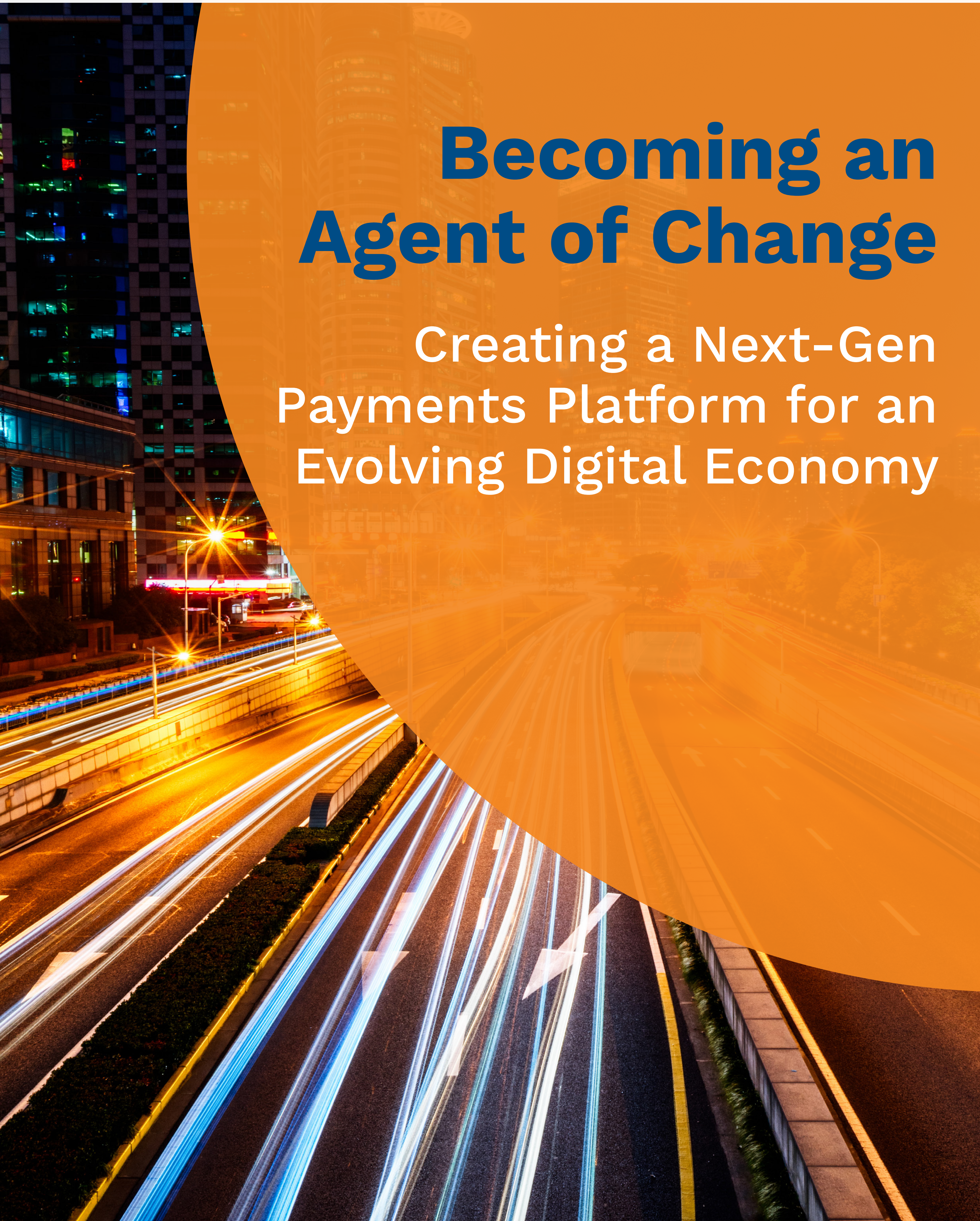
WHITEPAPER

Becoming an Agent of Change

Creating a Next-Gen Payments Platform for an Evolving Digital Economy



Executive summary

The convergence of Open Banking, PSD2 and instant payments is giving rise to new use cases in the payments industry on an almost daily basis - we are all aware of how quickly Alipay, 'Bank of Amazon' and Tencent have stolen market share by daring to reimagine how consumers interact with technology around normal activities. Tencent's corporate mission is to "enhance the quality of human life through Internet services" – as a consequence, banks need a strategy to respond to such bold disruptors, a strategy which demonstrates a refreshingly innovative approach towards their customers, and considers the technological revolution occurring in the world today.

However, to derive maximum benefits from these unparalleled changes, banks need to urgently review their service propositions and recognise that once acceptable norms no longer apply. And that both retail and commercial banking clients have an increasing choice of suppliers vying for their business by offering speed, convenience, accessibility and enhanced services – today.

In order to make up for lost ground, banks should make a series of simple but informed decisions, that will enable them to not only quickly update their payments platforms but also accelerate their path to offering frictionless value-added payment services. This translates into a planned and strategic approach to the upgrade of ageing and tired IT infrastructures that cannot easily accommodate these new revolutionary opportunities presented by Open Banking, PSD2 and instant payments.

The creation of new customer centric value-added services and the increasing shift of payments from cards to instant rails, presents a unique opportunity for banks to reinvent themselves, reduce costs and deliver benefits, such as tailored products and streamlined services to their customers at the same time.

This white paper focuses on:

Market disruption

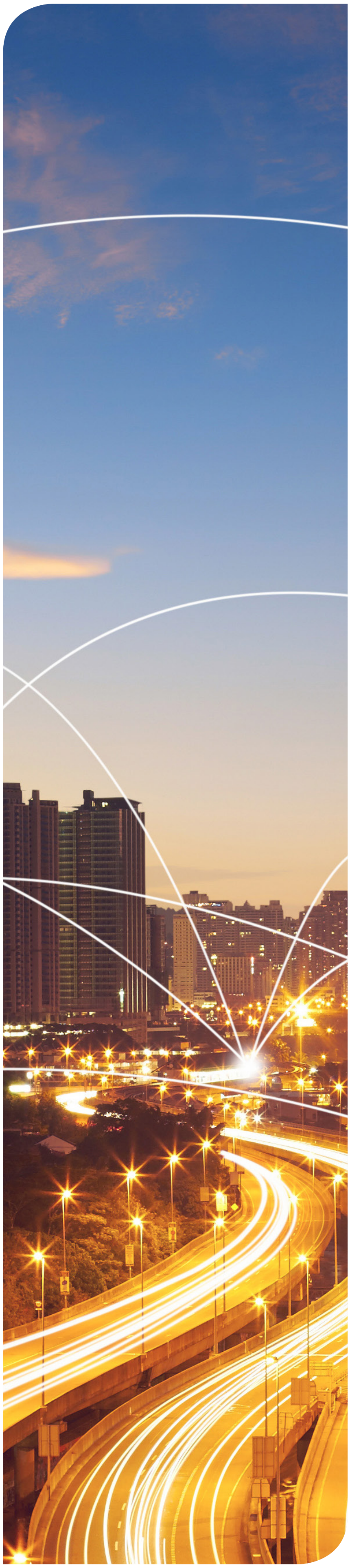
We examine a few examples of new ground-breaking services that are appearing around the world and discuss how financial institutions need to engage with blue sky thinking in order to stay relevant with their customers and their changing needs.

The decline of cards and cash

Research reveals the decline in card market share and cash volumes with the convergence of PSD2, Open Banking and instant payments. We look at how banks need to change traditional business models to account for this by reviewing and upgrading their current technology infrastructure now.

Considerations before committing to instant payments

How realistic are financial institutions in their expectations of what lies ahead of them? We look at seven key considerations and functions



COMPLEXITY SIMPLIFIED

that every bank will need to undertake to achieve implementation.

Cost considerations

Organisations should be aware of where hidden costs can occur during the implementation process. We review research from early adopters that demonstrates the three main drivers of costs during this process and how they can be mitigated.

Making the right technology choices

Most organisations have to determine whether they should upgrade their existing payments infrastructure or acquire new purpose-built solutions that operate independently but interface where necessary. We review considerations for both approaches.

A methodology for success

Before embarking on a technology path to instant payments and Open Banking, banks should first reflect on the route to success. We examine five key considerations when determining what functionality they should be looking for.

Leveraging 21st century technology

We examine four key technology considerations that every bank must factor in, in order to ensure that they make the most informed decisions they can when constructing their individual route to instant payments.

Introduction

Globally, banks are increasingly operating on shifting sands. Their once dominant and trusted brands have been impacted by innovative new entrants with no legacy baggage, offering more inviting, engaging and revolutionary services. This change is largely due to new regulations designed to empower the consumer and break the monopoly of financial services providers. PSD2 and Open Banking have opened Pandora's box and there's no closing the lid on the authorised access to customer data now. If regulations created the consumer superhighway, instant payments has provided the F1 vehicle to challenge all existing and outdated approaches.

Open access to account data enables innovative, well-funded competitors to predict consumer behaviours, spending patterns and needs, thereby providing valuable opportunities for new value added services, such as account aggregation, budgeting, investment tools and instant micro-loans.

The immediate impact of such openness is that it makes the FinTech/ Third Party Provider (TPP) mobile app or website the primary method of accessing account information and associated banking services. This turns the incumbent bank into a mere account service provider sitting behind the third-party app with no direct visibility of the consumer. This presents a direct threat to the bank's brand and as the TPP expands its service offerings, it has the potential to become the consumer's primary banking services provider.

Given this shift in market dynamics, it is important to fully appreciate the current options available to traditional FIs, the scale of the threat and future potential impact presented by new entrants, in order to be able to mitigate the inevitable change.

This whitepaper aims to identify the threats that new age banking service providers present, the new use-cases arising in the industry and the opportunities available for incumbent banks to not only face these threats head-on but to also emerge as winners through a more proactive longer-term and strategic use of modern technology.

Disruption is here and it's only going to increase

At EBAday 2018, panellists were united on one thing - it's not the payment itself that matters - or the speed per se. It's the overlay services enabled with new infrastructure which provides a better experience to consumers and businesses alike. With little margin to be made on payment transactions (i.e. the movement of money), banks and vendor communities need to be working closely with their respective customers to uncover latent and hidden needs.

The clock is ticking and revolutionary new services are appearing in the marketplace on a regular basis:

- **NatWest** recently announced a partnership with the Carphone Warehouse to trial an online shopping system that lets customers ditch their debit and credit cards and pay directly through their bank account, removing one link in the expense and time chain.

- **Deutsche Bank** has announced a pilot with the International Air Transport Association (IATA) to test a disruptive new payment model aimed at reducing processing costs between passengers and airlines. By collecting customer payments direct from accounts, payments can be processed and received in near-real time. The improved speed, security and transparency is matched by convenience for travellers. Airlines currently pay around $7bn pa to process payments, so the shift from cards to instant payments will provide massive cost savings to the airline industry.

- **Revolut**, the digital banking challenger, is working in partnership with SnapCar, the B2B French equivalent of Uber – and will shortly be providing instant automated pay-outs directly into drivers' accounts. Drivers incomes will become reliable and instant, with none of the delays currently experienced from a traditional and extended payments chain.

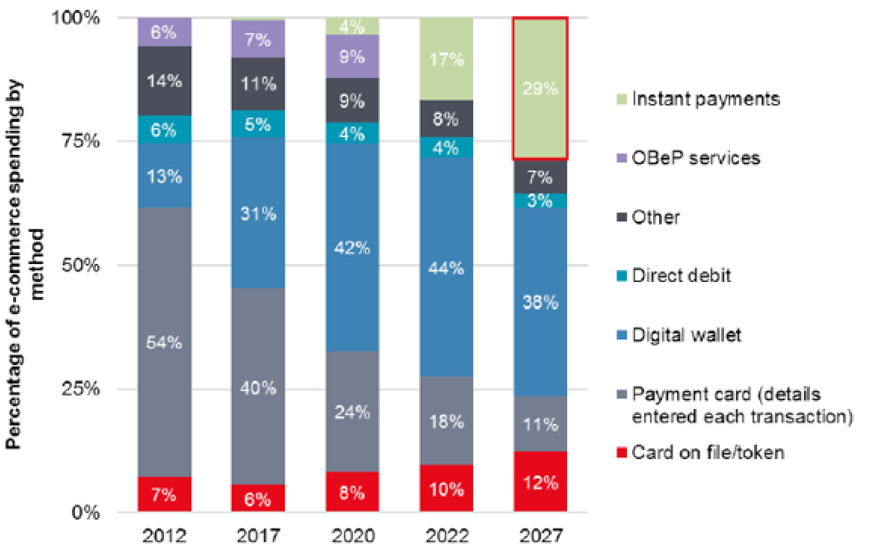
- **KBC**, the Belgian digital bank has three key goals around which its business model is based. Instant (account opening, decisions, and end-to-end digital documentation), Accessibility (always on, mobile first, 24/7 contact centre, web and video chat), and Proactive (knowing the right time, the right data and the right products). The digital strategy stretches to a digital debit card being delivered to the retail customer's phone on account opening.

These are just a few examples of services that are set to generate revenue streams and create genuine and lasting market differentiation through the intelligent use of data and technology.

Organisations need to embrace the decline of cards and cash with new alternative services

With the take up of new technologies, increasingly open data and consumers in need of speed at every touch point of life, it's not surprising that the once safe and growing card-based payment share is on a systematic decline.

As per Icon Solutions' research, conducted in conjunction with consultants Ovum, single card payments in Europe are set for a heavy decline from 40% to 11% market share by 2027 – with many believing this is a conservative estimate. While instant payments, driven by PSD2, are expected to become a top payment method across Europe by the early 2020s.



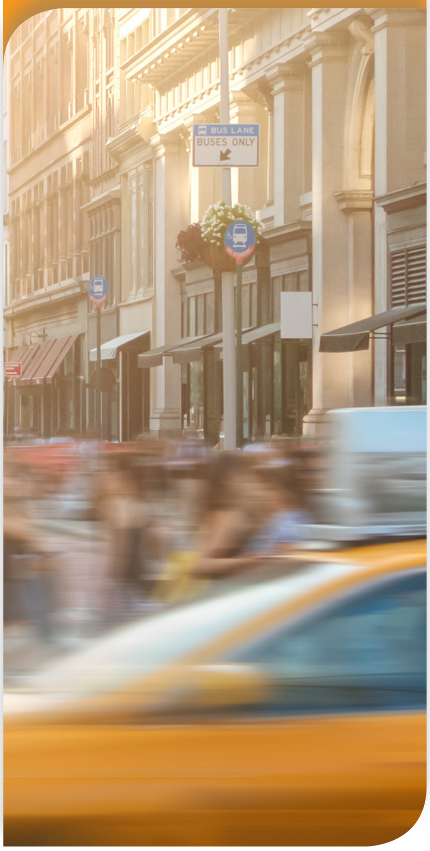
Source: Ovum

The combination of instant payments and open banking/PSD2 will significantly disrupt existing card-based payment volumes

It is increasingly clear to see that with the advent of new and limitless instant payment use cases against a backdrop of dwindling card usage and associated revenues, it is incumbent for banks to re-think their customer relationships, their business models and vitally their payments business strategy.

Without a more agile and longer term view of their customers' needs i.e. serve better and stay relevant, maintain the customer base and capture greater insights through data; banks will find it difficult to compete head on with their new competition. There is a very real danger that traditional banks are sleep-walking towards a loss in market share and revenues, owing to a failure to own a systematic process and timetable towards the upgrade of their technology. The task is compounded further by regulatory pressure, falling ROE and fast cultural shifts. While more nimble, responsive and less technology constrained partners will continue to generate new revenues from imaginative products and services that we cannot even imagine yet in 2018.

"There is a very real danger that traditional banks are sleep-walking towards a loss in market share and revenues, owing to a proactive failure to upgrade technology"



Banks need to consider several factors before committing to an instant payments strategy

Before embarking on a new payments journey, banks need to ensure that they have considered and appreciated the completely new working practises that instant payments will require, as the traditional payments landscape and points of reference no longer have the same relevance:

- Instant payments are 100 per cent straight-through-processed with absolutely no room for manual intervention
- Banks are introducing a clearly defined order management layer to eliminate the ad-hoc, duplicated and often inconsistent processing currently built into channels
- Business and technical failures will need to be dealt with in an automated fashion in real time and with full certainty

"Banks must review the availability and performance of complete payments process chains, not ring fence them from instant payments"

- Manually intensive investigations and payment updates will need to be replaced with stringent rule-based automated decision making and processing
- The always-on (24x7x365) nature of instant payments will have a significant impact on core backend systems to ensure this high availability, typically upwards of 99.9%
- Tight SLAs will typically allow the bank just over one second to process a payment, before it is either forwarded to the counter party or a success/failure response is generated
- Regulatory activities like sanctions, embargo screening and fraud detection will need to be completed within milli-seconds.

Should these rigorous considerations put banks off from making the leap to real time? Absolutely not. However, it is imperative that banks choose a solution that not only protects their existing payments rails from any technical impacts, but also ensures that it can meet the future needs of an evolving payments landscape. Planning around your precise needs today means your solution will be incomplete and lacking by the time it's actually delivered.

To be successful, banks must review the availability and performance of all components in the payment processing chain, including channels, order management, core banking, risk management and control systems, rather than focusing solely on the payment engine and gateway.

Cost considerations when implementing instant payments

Icon's research conducted with Lipis Advisors demonstrated that in the initial stages of the project, the costs are dominated by upfront license and implementation, especially testing. The more complex the bank, the higher the implementation costs are likely to be. Choosing a system that is quick to implement offers significant savings, as the burn rate of the implementation project is sustained for a shorter period. Automated testing in particular saves considerable time compared with traditional manual test cycles.

After go-live, maintenance costs come to dominate the total cost of ownership. As well as regulatory upgrades, the cost of Change Requests to allow the system to support emerging business requirements can be high. A flexible solution that empowers the bank to make its own changes, without requiring software modification by the vendor, can yield major cost savings.

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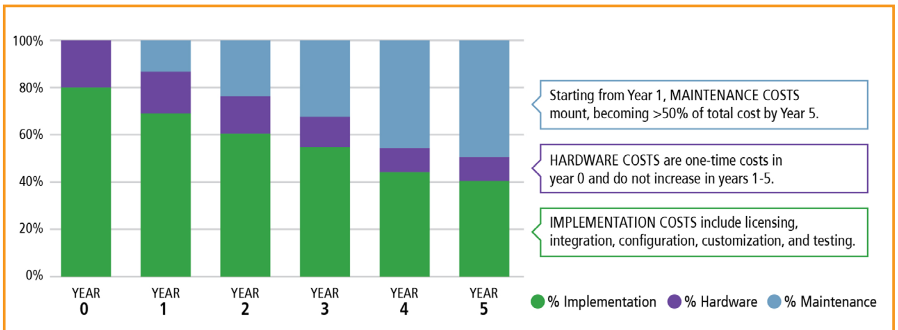
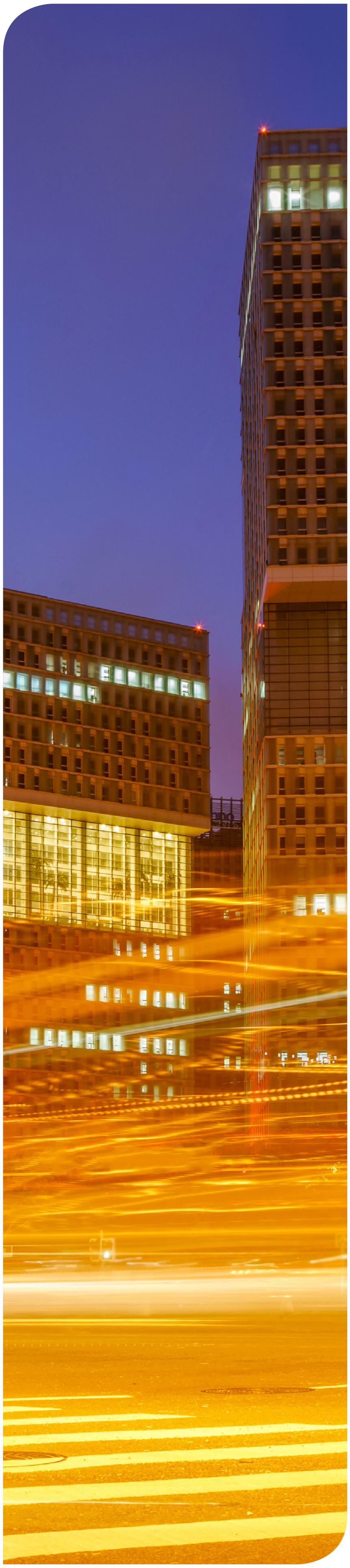


Source: Lipis Advisors Instant Payments: Insights from Early Adopters

Percentage of cumulative cost by type of cost

What is immediately apparent is that implementation costs are not mainly a Year 1 investment. This was often the result of extended testing and integration costs that had not been initially factored in.

Once implementation costs start to reduce they are quickly replaced by rising annual maintenance costs, which accounted for 50% of total costs by year 5. These maintenance costs include software updates and minor enhancements, including incremental software upgrades, scheme rule changes, configuration changes etc. Any new planned implementation should take this TCO model into account for a realistic projection of what to expect.



Making the right technology choice

Evolutionary Upgrade

Whilst existing payments solutions can be extended to accommodate instant payments, there are several challenges that simply cannot be met via retrofitting the existing payments hub or engine.

- These older systems were primarily designed for slow, end-of-day, batch-based payments processing that allowed a high degree of manual intervention for dealing with business and technical issues - at a time when real time payments did not exist.
- The underlying technology stack is therefore focused on end-of-day batch processes rather than fast, always-on real time processing. This difference in existing system capabilities is a crucial point and shouldn't be underestimated.
- Any change to the core architecture of legacy payment hubs and engines is likely to severely compromise the integrity of the whole payments system and have a direct impact on the existing payment rails being served by the system.
- The knock-on effects of upgrading existing systems are also huge and will include extensive system testing with associated unknown costs and extended unknown timescales to ensure compatibility. Additionally, there will be a requirement for new additional or replacement infrastructure and potentially additional software and hardware licenses.

"There are several challenges that simply cannot be met via retrofitting an existing payments hub"

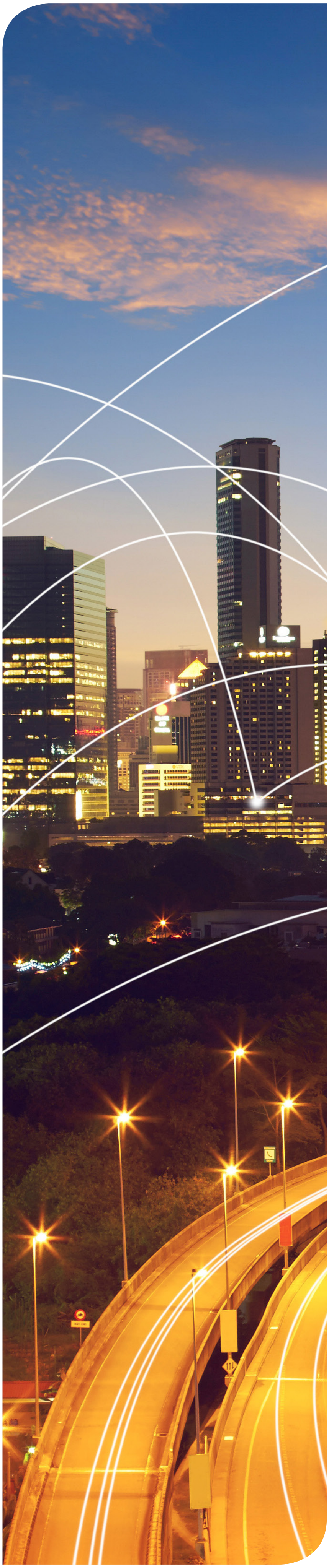
Emulating Market Disruptors

Internet scale payment service providers such as Google and Amazon have already emerged as the new challengers to the banks' payments businesses, along with smaller dynamic Fintech players. Many (e.g. Revolut) are already intertwining banking products into their spectrum of growing services, stealing market share and customers in the process.

Access to bank's customer data via Open Banking APIs has further strengthened these market disruptors by enabling them to develop their services tailored around individual customer preferences and behaviours.

The business models of all these challengers follow a similar pattern:

- Leveraging cloud hosted payments platforms (providing high degrees of flexibility to launch new financial products at relatively low cost)
- Accessing rich consumer data (for the purposes of analysis and new product development)
- The creation of new personalised services available in real-time
- Adopting modern cutting-edge technologies enables them to respond to market changes quickly and offer improved customer services
- The increased use of open source technology allows them to significantly reduce software licensing costs
- Payment processing costs are genuinely low cost compared to incumbent banks on old rails.



Dedicated Solutions

Today's dedicated instant payment solutions have been purpose built using the latest sophisticated open source technologies and consequently provide a robustness and speed that batch systems were never designed to deliver.

Some of these technologies are being used by Twitter, WhatsApp, Facebook etc. to build core systems that never go down and cope with huge performance peaks and troughs along with massive message volumes. Automated testing programmes, graphical flow orchestration, interfaces design tools and real time system monitoring are just some of the off the shelf functionality available today. Other considerations include:

- Provides the opportunity to step away from dated legacy skillsets
- Highly flexible, message driven, resilient and future proof architecture
- Reduced time-to-market and limits risk via minimum disruption to existing payments processes
- Future proofed for convergence of instant payments and API banking (PSD2)
- Highly scalable and deployable on commodity hardware
- The phaseout of slow payment schemes in the future will have near zero impact on instant payment processing.

A methodology for success

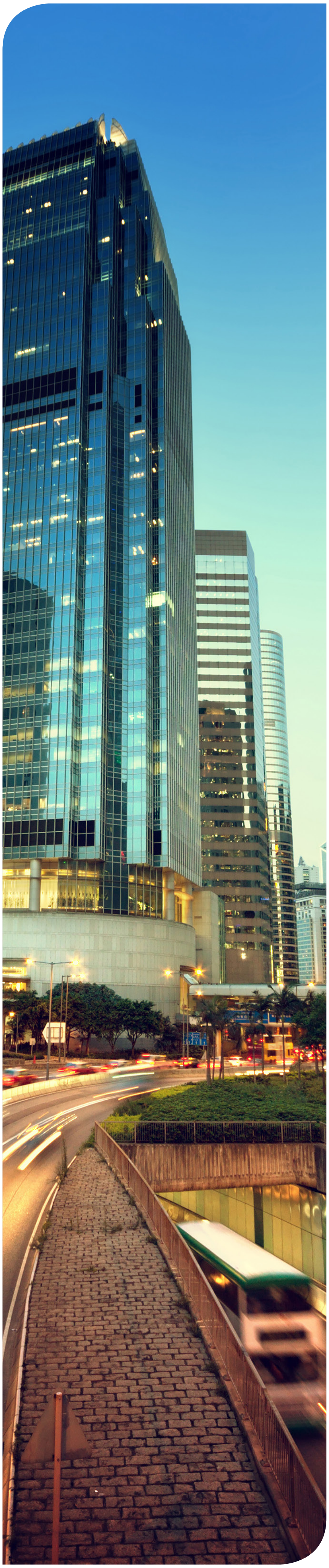
What is clear is that for traditional banks to compete in a digital world, they need to behave and think more like challengers - becoming agile, staying responsive to market needs and leveraging modern open source technology to bring down costs and offer better value-added services to improve customer experiences.

However, before embarking on a technology path to instant payments and Open Banking, banks should first reflect on the path to success:

- **Modern & Open Source Technology** – Banks need to embrace the same technologies as their competitors to level the playing field. Open source technology will not only enable a bank to manage the high performance and availability SLAs, but also prepare it to easily handle future developments in the payments market
- **Superfast Integration** – The world is increasingly turning to APIs. An API centric, micro-services solution will enable banks to quickly build new products and services
- **Commoditized Service** – The ability to bundle services and offer them as a package will allow a bank to offer it to trusted third parties at a nominal cost, thereby increasing - not just maintaining - its payments market share
- **Agility & Speed to Market** – The capability to build, test and deploy new, innovative products and services is a key differentiator between FinTechs and incumbent banks. And as such a key requirement to compete in the ever-evolving payments space
- **Scalable & Extendable** – Extending the solution to third parties and the migration of batch and card payments to instant rails will require a very high degree of scalability & processing capacity.

Leveraging 21st century technology to your advantage

While evolutionary changes to the existing payments platform may seem the easiest option, this approach runs a major risk of compromising the bank's existing business processes by leveraging a legacy architecture built for slow and manual processing. To really be able to compete with the new market disruptors and generate returns, banks need a modern approach that can level the playing field or even tilt it in their favour.



Two Speed Architecture

It is critical that batch and instant payment rails are kept separate. As batch payments inevitably move to instant rails overtime, there will be a clear need to 'freeze and wrap' the existing batch payment engines within the bank. By choosing a Two Speed Architecture, i.e. continuing to run slow batches on the existing platform and installing a separate dedicated solution for instant payments, banks can minimize disruption to their current payments processes and vitally prepare for the shift to instant rails.

Enabling Rapid Change

The new dedicated solution must be based on a forward-looking technology stack that meets the requirements of an API economy and encourages the unification of software development and software operation. This would bring a high level of automation and monitoring in payments processing and enable the 'Rapid Development and Rapid Deployment' of new products and services. Such Agile development practices will enable banks to stay ahead of market disruptors by being 'first to market' or at the very least enable them to compete head-to-head by launching similar services in sync with them.

Open Source

The shift to an open source technology stack is highly critical to the bank's ability to process payments cheaply while ensuring the service levels of internet scale providers. Open source offers the best of breed tools while significantly reducing the bank's software licensing footprint and overall business costs. The choice of container technology such as Docker and Kubernetes enables deployment on standard commodity hardware which would further reduce the overall costs of running the platform, while providing very high levels of scalability and service availability.

Cloud or On-Premise?

With Cloud capability, private or public, even the smallest banks can leverage scale and cost effectiveness at close to big bank levels. However, we believe that Cloud deployment is only good for execution. It provides flexibility to spin up new environments/nodes easily within a very short space of time, but the challenges corresponding to integration with core backend systems still remain. Additionally, it is difficult to personalise services to meet customer specific needs because by nature Cloud based services are ubiquitous and 'non-differentiated'. It is therefore crucial to identify the list of services that the bank wishes to offer and then host only generic services (e.g. purely payment execution) on the Cloud while unique proprietary services (order management, customer centric offerings, etc.) must be maintained on-premise.

Summary

Organisations that aren't adapting their entire business models to meet changing consumer and business demands are jeopardising their prospects and shortening their lifespan. Technology can be both a disruptor and an enabler. It can also be the catalyst for more traditional financial institutions to risk extinction at the hands of more responsive and lithe competitors.

There is a broader disruption taking place in global banking around new emerging and sophisticated technologies, new eager participants are keen to utilise consumer data via APIs and participate in banking services. Compared to traditional banks, the balance of efficiency is highly skewed towards the new entrants as they operate with carry-on rather than restricted and expensive hold baggage. The success of these new entrants will result in diverted revenue streams from traditional banks.

As interactions between the consumer and the bank are increasingly becoming digital, there is a clear need to offer differentiating and customer centric services that can allow banks to not only protect their existing payments business but also create new and alternative sources of revenue. Banks need to react quickly and counter the competition with similar or even better services.

The combination of Open Banking, PSD2 and instant payments provides a rare opportunity that can enable banks to provide alternative methods of payments to bypass expensive card interchange fees as well as gain higher trust from their corporate customers. Banks can no longer remain followers or late entrants to new digital business models, they need to take the lead and be the agents of change in the digital world to remain their customer's 'trusted partner'.

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A seasoned Global Payments SME and Sr. Business Analyst, Aniruddha has extensive experience in solutioning payments transformation and compliance projects for banks - enabling the shift from legacy systems to modern payment platforms. He has a keen interest in understanding the trends & upheavals in the payments business and provides regular thought leadership to help banks overcome these new challenges.

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