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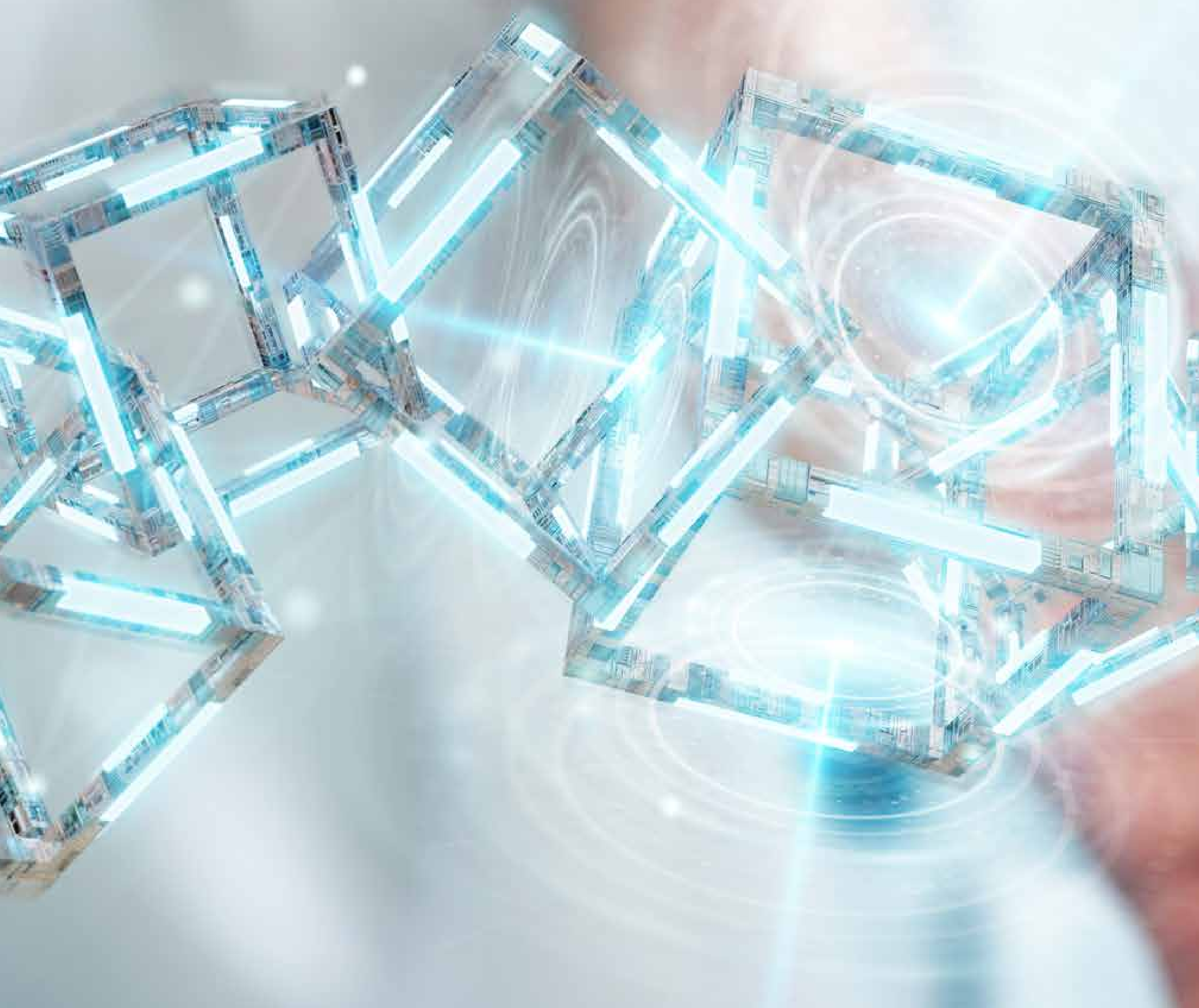
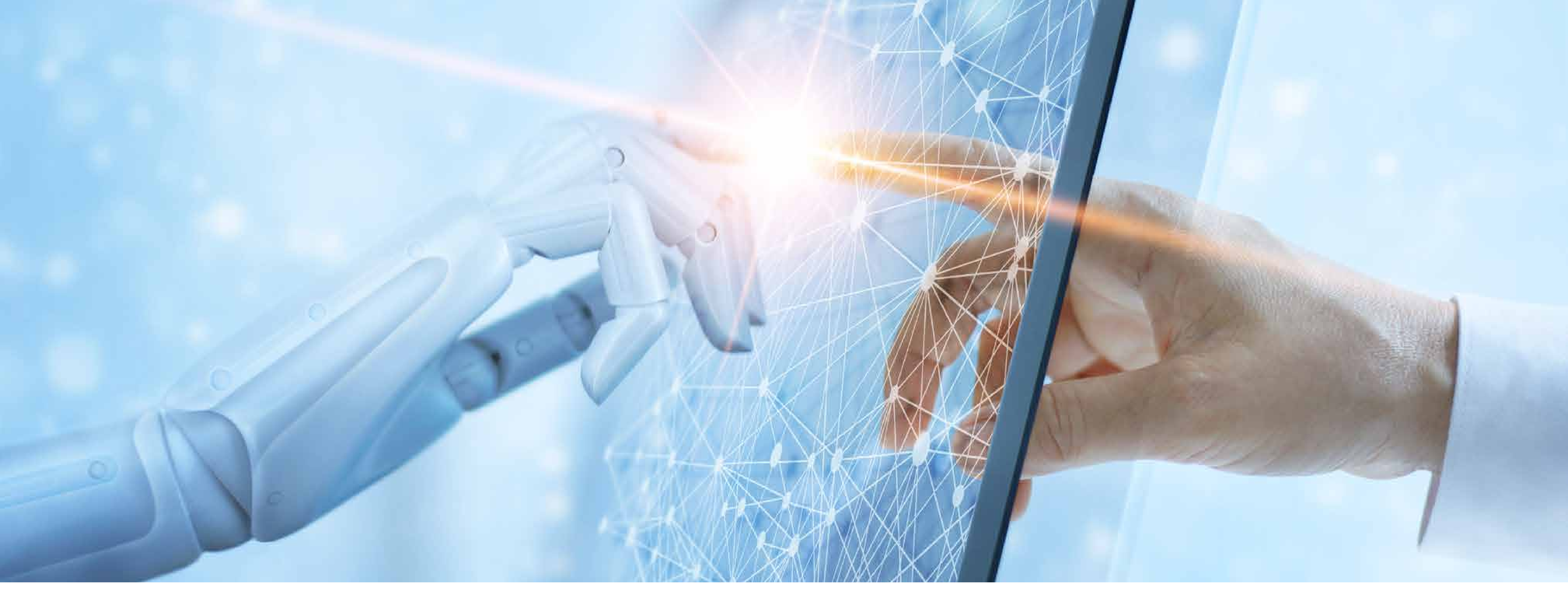
THE BANKING SOFTWARE COMPANY



Making Blockchain a Reality



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Summary

Until recently, the **world of finance** was seen as a highly technical, highly regulated industry dominated by giant banks that resisted disruption (other than the occasional global meltdown). However, the finance industry is now riding an entrepreneurial wave, with blockchain at the helm.

Demand for start-up services is now stronger than ever, piqued by widespread frustration with historically cumbersome big banks that were unable to move at the speed or direction that was needed to meet market need. However, as financial institutions realise that their only way to ride this wave is to embrace (and often partner) with these new start-ups, we are set to see a perfect marriage never before witnessed.

So, why have financial institutions been so slow to embrace technology, and in particular, blockchain?

No Responsibility, No Progress

Blockchain could represent the next big shift in technology over the next five years but the pace of innovation within financial institutions seems to be slow.

Lack of accountability is the main reason that hinders organizations in embracing innovation, and blockchain is not different from this perspective, as affirmed by 46% of respondents in a recent survey by Deloitte[1].

Patrick Laurent, Partner at Deloitte comments that "these results are not surprising, but give a clear indication of the immediate need to begin learning courses, workshops and develop Proof of Concepts (PoCs) in order to develop a good understanding of the technology and to mobilise staff with the capabilities to act on it."

From what Deloitte observe in the market, 2016 is the year which sees the move from the across EMEA to gain a clear understanding of their current plans and status with blockchain technology hype phase to prototype phase. They are predicting the development and launch of the first blockchain PoCs within the financial services industry at a company level and banks must respond to this. However, in this scenario, the majority of financial institutions interviewed seem unprepared to tackle the upcoming challenge.

> While we accept we are in the early stages of learning and adopting blockchain technology, we question why the vast majority of respondents who understand the profound impact the technology can have, are yet to appoint people within their organisation to get to grips with it.
>
> Patrick Laurent, Partner at Deloitte

Blockchain could represent the next big shift in technology over the next five years but the pace of innovation within financial institutions seems to be slow; for example very few banks have a blockchain lab. A radical change in culture is required to re-think banks' business models in order to prosper in the future. So banks must devote adequate focus and manpower if they are to keep up pace with the market, but, once established, focus must be on the true benefit rather than just exploratory. So which areas do banks see the most opportunity?

1) Deloitte EFMA KBC Blockchain Survey, April 2016 - an in depth survey to 3000 C-level managers within the finance industry across EMEA to gain a clear understanding of their current plans and status with blockchain technology

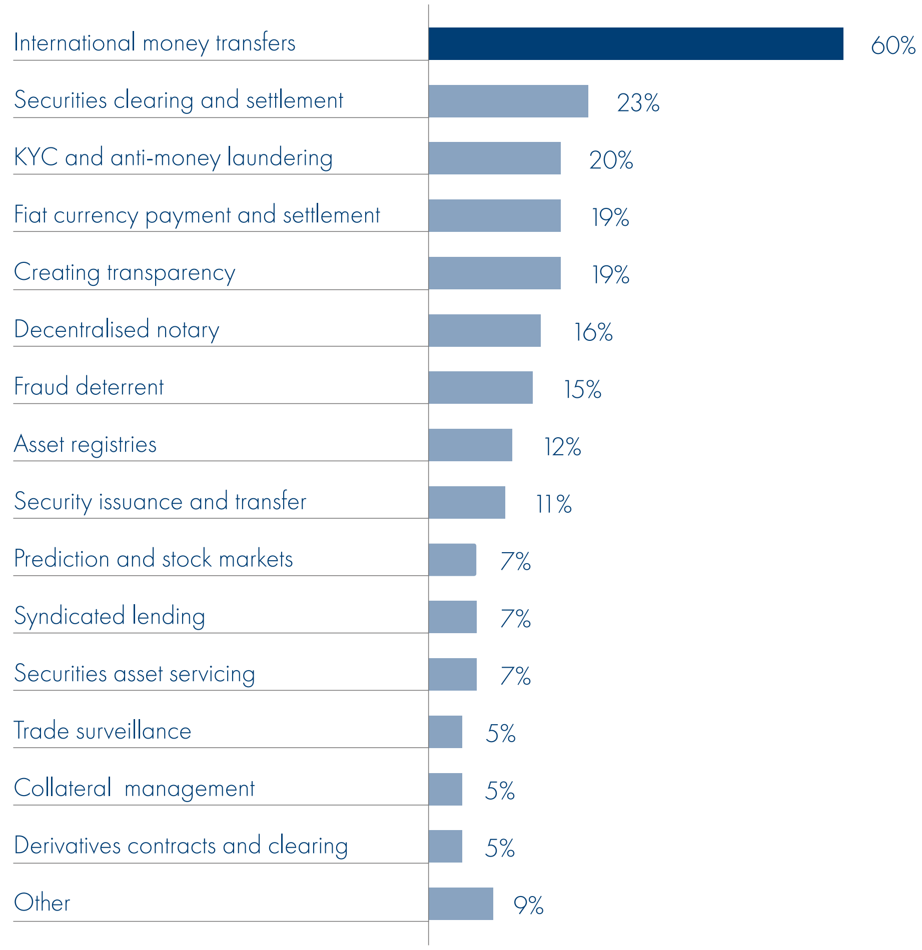
The Remittance Revolution

One factor that is driving this market disruption is the movement of money from a period of high dollar amount and low transaction volumes to low dollar amounts and high transaction volume. This is best exemplified by the explosive growth in international remittance and SME cross border payments, both equating to over $6 Trillion a year. Earlier this year Deloitte commissioned a survey to financial institutions across the globe to understand how Financial Services are reacting to the blockchain revolution and a staggering 60% indicated that this was the area where they are looking to focus on (fig.1).

International money transfers are thought to represent a $6 Trillion annual opportunity and this may be the reason why so many interviewed saw their case for blockchain here, but why? Currently most consumers and SMEs choose to use money transfer intermediaries rather than their own banks because the costs structures are too high. If banks wants to retain their customers and earn extra revenues, they must adopt a lower cost system. And it is clear that banks are starting realise that blockchain may be the answer.

Blockchain technologies, like the Ripple Protocol , enable the creation of the lower cost system that banks need to compete. Because these systems use a distributed ledger approach, banks can utilise real-time settlement (RTS). This lowers the administrative and opportunity costs associated with the current correspondent banking system and as a result, customers can be retained. But how ready are banks to make this opportunity a reality and will SWIFTs Global Payments Innovation Initiative (GPII)[2] , designed to improve the cross-border payments experience, take the wind out of those sails?

Fig.1.
What will your initial blockchain use case be?



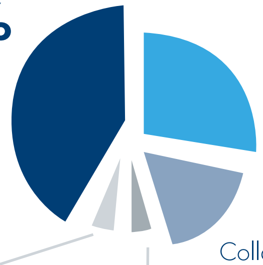
2) SWIFT have announced that 73 banks worldwide have now joined its Global Payments Innovation Initiative (GPII), designed to improve the cross-border payments experience. Recent banks to join the initiative include, Alfa-Bank, Axis Bank, Banco de Crédito del Peru, Banco do Brasil, Bangkok Bank, Bank of Nova Scotia, Banque Européenne d'investissement, CaixaBank, Canadian Imperial Bank of Commerce, Credit Agricole, CTBC Bank, E.Sun Commercial Bank, Fifth Third Bank, ICICI Bank, Itaù Unibanco, Mashreq Bank, Promsvyazbank, Rabobank, Svenska Handelsbanken, Swedbank, TMB Bank and U.S. Bank

> This year will see the development and launch of the first blockchain proof of concepts in FSI at a company level.
>
> Patrick Laurent, Partner at Deloitte

Fear of the Unknown?

It was recently claimed that 2016 Wall Street blockchain investment alone is set to top $1Billion[3], but how prepared are banks in general? Deloitte survey found that despite a rising awareness about the potential of blockchain, the majority of financial institutions are still at the beginning of their journey with this technology.

Where are you in the blockchain journey?



Despite the recent news that a number of leading financial institutions are exploring the technology through working groups, including R3, none of the respondent firms from the survey had developed their own centre of excellence, even though some leading players had set up incubators and started developing internal capabilities. Rather, the 71% majority are either learning about blockchain (43%) or have not yet started their journey (28%) and 50% have not yet appointed a blockchain business owner. Deloitte predict that 2016 is the year which sees the move from the hype phase to prototype phase.

They believe that this year will see the development and launch of the first blockchain proof of concepts in FSI at a company level. In this scenario, the majority of financial institutions interviewed seem unprepared to tackle the upcoming challenge. So how can banks quickly catch up to avoid missing this opportunity?

3) 2016 Wall Street blockchain investment to top $1bn http://bit.ly/28RvOk2

Collaboration at the Core

Technology achieves nothing new without trusted parties (including specialist partners) and networks where all participant can do business together. A good example can be found within South East Asia where some small banks, which have operations in multiple entities, are already undertaking cross border (RTS) through the blockchain using Ripple infrastructure.

The rationale is that the cost of running RTS was so much lower than using SWIFT with its associated costs. Because they are actively using blockchain already, they are ahead of understanding alternative ledgers, so when the inflection point does hit, they are ready.

By adopting this approach they can have real calculations on how the system benefits them rather than waiting for the ultimate R3[4] report to come out, then they can be ahead of the game by being able to develop products accordingly.

So cheap, efficient international RTS using blockchain works for small, banks with multiple entities but what about the majority?

> Small banks, which have operations in multiple entities, are already undertaking cross border (RTS) through the blockchain.
>
> Pavel Bains, CEO, Bluzelle

4) R3 (R3CEV LLC) is a blockchain technology company that leads a consortium of 45 financial companies in research and development of blockchain usage in the financial system.

Access the Infrastructure, Access the Opportunity

Historically, banks have relied on vendor-specialized experts to develop complex coded interfaces between all of their systems.

Unfortunately, this approach means that banks struggle to integrate new business systems (including partners that enable banks to utilize blockchain functionality), fast and cost-effectively. In addition, this point-to-point integration approach that banks tend to adopt is more difficult to support real-time business across multiple channels, which makes supporting real-time settlement (RTS) impossible.

This level of flexibility, often through the use of an advanced payment hub, enables banks to integrate systems much faster, to realise this $6Trillion opportunity in a competitive world.

Back in May this year[5], Bluzelle Networks[6], a payments platform leveraging the Ripple Infrastructure, became available through the Temenos MarketPlace[7], and demonstrated the ease which RTS systems can integrate and run on established, yet agile, core banking systems[8]. With this particular model, Pavel Bains, CEO of Bluzelle recounts that "a bank teller performed a transaction in real-time by simply keying in the appropriate information to send Canadian Dollars (CAD) to another bank where the recipient was expecting EUR." Adding that "the transaction, foreign exchange and settlement all happened in seconds over the blockchain and all ledgers were updated concurrently."

This particular process has the potential to be seamless when integrated with the right infrastructure and the more banks uses the same core banking system (through an agile provider championing this approach), the bigger the network grows. The end result is an international payment network of thousands of trusted banks, doing things the same way, and seamlessly sending funds to one another. Used in the right way and through the appropriate model to ensure minimum revenue loss from a bank perspective, this approach could lead to new revenue streams and products that give more value to your customers.

> **Benefiting from RTS using blockchain can easily become a reality for banks of any size, but their core architecture and integration framework must be sufficiently agile.**
>
> Darryl Proctor, Product Director – Transaction Banking and Payments

5) At Temenos Community Forum (TCF) 2016, Barcelona
6) Bluzelle is an established Temenos partner available through the Temenos MarketPlace (marketplace.temenos.com).
7) Temenos Marketplace is a free web-based application. It allows you to use and manage business applications in one simple and secure site, from anywhere.
8) Bluzelle was run on Temenos Core Banking Platform for the demonstration. Banks currently using Temenos Core Banking can send payments to each other in real-time. This is done via Bluzelle Altitude which allows for payments to go over the blockchain in the secure and authentic way banks are used to.

Getting Ready

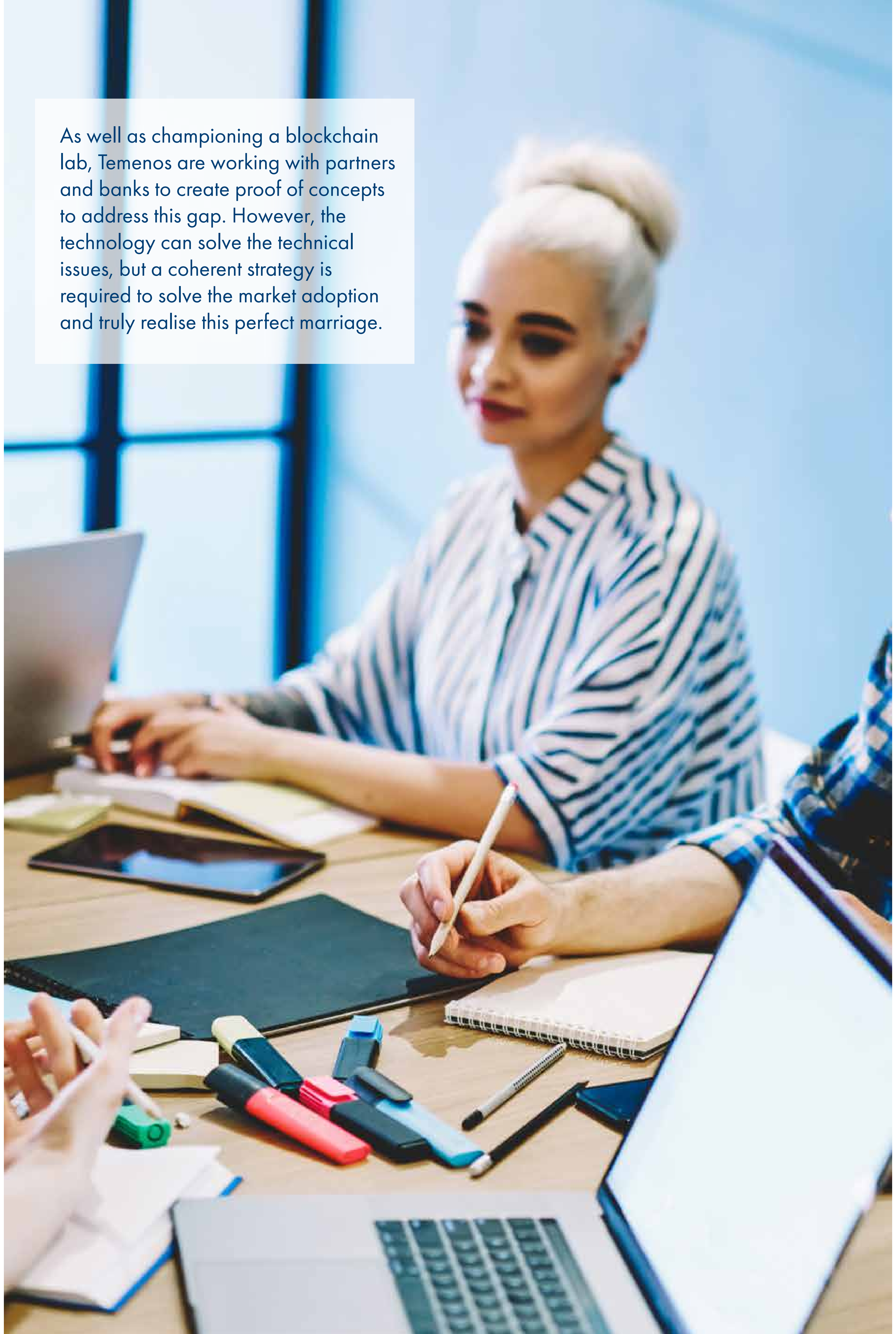
The global financial services market is proving it is ready for this technology in a number of ways. Investment in blockchain has now exceeded $1Billion and more than 30 pilot projects are completed. However, a high proportion of the research undertaken to date has looked into the capability of blockchain to modernise costly and inefficient legacy systems/old processes. Several leading banks including Intesa Sanpaolo and Unicredit, and the leading e-commerce payments institution in Italy, Banca Sella, have published several white papers and articles about blockchain and are actively recruiting blockchain developers and promoting initiatives in this space.

Sponsoring or organising blockchain hackathons is just one way they are promoting the technology[9]. Other groups include R3 and Caisse des Dépôts[10]. Eventhough these initiatives are important for the industry, these consortia operate in a 'lab' environment, not taking into account the full ecosystem required for the operationalization of a viable use case.

Whilst there is no doubt that research and transferring knowledge is essential, we must not forget that there are opportunities to benefit now. 60% of banks interviewed by Deloitte said that International money transfers were their main focus from a blockchain perspective, and we have heard that benefiting from this market through infrastructures using Ripple by working with agile partners really can be a reality.

So banks can benefit now from an international money transfer perspective, however, to progress it must not stop there. To see this technology embraced we need to complete the network with parties at both ends integrated to the common platform.

9) Prime examples to note are Fidelity and Citi in Dublin, and BNP Paribas in Paris, Brussels, Rome, Istanbul and San Francisco
10) Caisse des Dépôts was launched in France to bringing together 11 partners from insurance, banking and FS industry groups, working to leverage their research in exploring blockchains potential and investigating the ethical, regulatory and normative aspects of the technology.



> As well as championing a blockchain lab, Temenos are working with partners and banks to create proof of concepts to address this gap. However, the technology can solve the technical issues, but a coherent strategy is required to solve the market adoption and truly realise this perfect marriage.

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About Temenos

Temenos AG (SIX: TEMN), headquartered in Geneva, is the world's leader in banking software, partnering with banks and other financial institutions to transform their businesses and stay ahead of a changing marketplace. Over 3,000 firms across the globe, including 41 of the top 50 banks, rely on Temenos to process both the daily transactions and client interactions of more than 500 million banking customers. Temenos offers cloud-native, cloud-agnostic front office and core banking, payments, fund management and wealth management software products enabling banks to deliver consistent, frictionless customer journeys and gain operational excellence. Temenos customers are proven to be more profitable than their peers: over a seven-year period, they enjoyed on average a 31% higher return on assets, a 36% higher return on equity and an 8.6 percentage point lower cost/income ratio than banks running legacy applications.

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