Innovation in Retail Banking

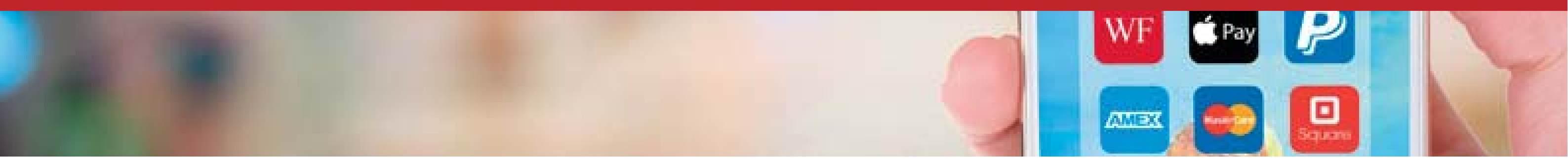
November 2015, 7th Annual Edition

Industry Disruption

Efma

Infosys® Finacle

Contents



Preface

Efma and Infosys Finacle are proud to present the seventh annual study of innovation in retail banking. The theme of this year's study is industry disruption and how banks can effectively work with start-ups to boost their innovation performance.

There is a general feeling that ongoing changes in the industry will have profound implications for established retail banks in the next few years. The rapid evolution of disruptive technologies and disruptive business models is now starting to have an impact on the day-to-day business of banks. We cannot predict when the tipping point will be but it is essential for banks to be prepared.

These developments, however, do not have to be only a threat. There are opportunities for banks to collaborate with innovative start-ups which can help to drive innovation and transformation. More and more banks are setting up accelerators/incubators, or are working with independent accelerators/incubators. There is also a trend towards investing in start-ups either through dedicated venture funds or on an ad-hoc basis.

Start-ups are not necessarily just competitors and we are also seeing more examples of banks partnering with start-ups to launch new products and services. This brings its own challenges and banks need to be flexible in their policies and recognise differences in culture and approach in order to make these partnerships work.

Investment in innovation has been increasing consistently for the last few years at most banks according to our surveys. There are signs that this investment is making a difference in that innovation performance is also perceived to be improving. Although many challenges remain, we have certainly come a long way as an industry from the dark days of the global financial crisis.

We have noted before that when it comes to innovation, there are common themes across all regions of the world, and across developing and developed countries. It does not matter if you are in Brazil or South Korea, you will see many of the same innovations in retail banking. Of course there are always national differences due to regulations, industry structure and consumer behaviour, but the overall trends are quite similar.

We hope that you find this study useful and look forward to continuing to monitor significant developments in retail banking innovation on your behalf in the future.

Patrick Desmares
Secretary General
Efma

Michael Reh
Executive Vice President and
CEO (designate), EdgeVerve

Executive summary

Threat of industry disruption is growing
Banks perceive that the threat of industry disruption in retail banking is growing and 72% regard the threat as high or very high from at least one group of potential competitors (tech companies, start-ups, retailers, insurers and telcos). The highest perceived threat is from tech companies like Google and Apple, seen as high or very high by 45% of banks. The next highest perceived threat is from start-ups, rated high or very high by 41% of banks. Much less of a concern is the threat from telcos, retailers and insurers.

Innovation investments are increasing
One of the responses of banks to these threats is that the proportion of banks increasing their innovation investment over the previous year is 84% in 2015, the same as in 2014, but an increase from just 15% in 2009.

Innovation performance is improving
Our survey has also found that 68% of banks believe they are becoming more innovative, with only 9% of banks saying they are becoming less innovative. Banks continue to say that they are most innovative in the area of channels, with 43% believing their innovation level is high or very high.

Increasing challenge from start-ups
We have highlighted the innovation from start-ups in retail banking in our previous innovation studies, and the investment in FinTech as a whole has taken off dramatically in the last couple of years. Some successful challengers have achieved very high valuations which encourages more investment. Not all of these companies are competing with banks and many are potential suppliers or partners.

Disruptive technologies and business models:
- Several new technologies have emerged in recent years which are starting to have a dramatic impact on the banking industry. The most important of these according to banks is mobility, where 59% of banks expect the impact to be high or very high, followed by advanced analytics/big data (57%), open API's (53%) and the internet of things (47%).

- The most notable disruptive business model which has impacted banking is Peer-to-Peer (P2P), already affecting product areas like personal and small business lending, and money transfers. 40% of respondents in our survey believed that P2P will have a high or very high impact on the industry.

Potential impact of start-ups:
- Among the disruptive technologies the proportion of banks expecting start-ups to have a high or very high impact is 65% for mobility, 57% for open APIs, and 48% for advanced analytics/big data.

- In the area of advanced analytics the proportion of banks expecting start-ups to have a high or very high impact is 58% for customer intelligence, 58% for social intelligence, and 56% for real-time analytics.

- In products and services, banks expect that start-ups will have the most impact on payments (where they could be competitors, partners or suppliers) and on digital marketing (where they are most likely to be suppliers). In payments the impact of start-ups is predicted to be highest in P2P payments.

Working with start-ups:

- Attitudes and benefits: Only around 40% of banks have a positive or very positive attitude to working with start-ups which highlights there are some reservations. However, 69% of banks believe that start-ups can have a high or very high impact on innovation by helping them to develop more innovative solutions, and 57% say that start-ups have a high or very high impact on their ability to get innovations to market faster.

- Consequently, most banks said they expect to increase their involvement with innovative start-ups. For example, 86% said they will increase their involvement with start-ups in digital marketing, and 78% said they will increase their involvement with start-ups in payments.

- Accelerators/incubators: According to our survey, around one fifth of banks now have their own accelerator/incubator or are partnering with an external accelerator/incubator, in order to work more closely with innovative start-ups.

- Corporate venturing: Investing in start-ups is slightly less common than the use of accelerators/ incubators, with less than 10% of banks having a corporate venture fund, and a further 10% making ad-hoc investments.

- Partnerships: We have noted many other types of partnership between banks and innovative start-ups including banks providing lending through P2P lending platforms, banks licensing personal financial management technology, and banks launching new mobile payments services.

Challenges of working with start-ups

The most significant challenges, according to the banks in our survey, are regulation and security, where 53% and 50% of banks respectively found the challenges to be high or very high. Following that the most significant challenge was differences in culture.

Geographic and other differences are clearly evident

- Banks in high income countries have made a positive movement relative to less developed countries in the last 12 months in terms of innovation objectives and performance. They are also more concerned about the threat of industry disruption and are more likely to be investing in start-ups or working with accelerators/incubators.

- The global banks with significant retail operations in multiple countries are most likely to be aiming for innovation leadership now and are most likely to have a corporate venture fund or an incubator which may give them an innovation advantage over their smaller domestic competitors in the next few years.

- Specific country differences are harder to identify but it does appear that banks in the United States are more concerned about the threat of industry disruption. This may be a leading indicator for other countries because it is in the US where most start-up FinTech investment is currently taking place.

Innovation case examples

We conducted interviews with senior executives at six companies and these case studies are featured from page 45: Commerzbank, Sberbank, Barclays, Axis Bank, Number26, and Stratos.

The following is a list of the case examples which are mentioned or described in the study.

Banks

Wells Fargo	US	Cross-functional innovation group with a focus on R&D and innovation strategies.
Barclays	UK	Accelerator in partnership with Techstars, now expanding open innovation globally.
DBS	Singapore	Accelerator in Hong Kong in partnership with NEST.
Citigroup	US	Accelerator in the US, Germany, Singapore and Brazil together with Plug and Play.
Santander	Spain	US$100m FinTech venture fund based in the UK but with a global remit.
National Australia Bank	Australia	A$50m FinTech venture fund in Australia, part of the NAB Labs innovation initiative.
State Bank of India	India	Partnership with Ezecash in India to launch a mobile ATM for local stores.
Metro Bank	UK	Partnership with Zopa in the UK to provide loans on Zopa's P2P lending platform.
TD Bank	Canada	Partnership with Moven in Canada to offer customers Moven's PFM front end.
Commerzbank	Germany	FinTech venture fund and an internal incubator in Germany.
Sberbank	Russia	FinTech venture fund and an internal incubator in Russia.
Axis Bank	India	Partnership with Fastacash in India to launch a mobile P2P payments service.

Start-ups

TransferWise	UK	P2P international money transfers, based in the UK but expanding on a global basis.
Square	US	Card payment acceptance on mobile devices, expanding into other payments products.
Lending Club	US	P2P lending platform, one of the first of its kind, which is now publicly traded.

continued...

Your Mobile Money	Peru	The first mobile money service in Peru, set up by Movistar and MasterCard.
Myanmar Mobile Money	Myanmar	The first mobile money service in Myanmar, set up by the state owned telco.
MYbank	China	Branchless bank in China backed by e-commerce giant Alibaba.
Number26	Germany	Mobile bank in Germany with innovative PFM capabilities.
BitPesa	Kenya	P2P remittance service based on Bitcoin for transfers into Kenya and Tanzania.
Yoyo Wallet	UK	Mobile wallet that combines in-store payments with loyalty using QR codes.
Affirm	US	Online, point-of-sale loans using innovative credit scoring techniques.
Activehours	US	Advances on upcoming pay with no fees or interest, relying only on donations from users.
Vaamo	Germany	Online investment solutions for individuals using innovative algorithms.
Digit	US	Service which makes it easy for users to save small amounts of money.
Tink	Sweden	Mobile PFM app which provides consumers with insights and fun facts about their money.
Squirrel	UK	Simple and intuitive tools to help save, budget and manage bills directly from users payroll.
Stratos	US	Payment card which consolidates users payment cards and managed via a mobile app.

Other companies

Tesco	UK	Launch of a current account to build on an existing range of financial services.
WalMart	US	Launch of an online and mobile banking service in partnership with GoBank.

Introduction

The global trends in retail banking remain the same as in recent years with low growth in high income countries on most measures, and high growth in low income countries (see Figure 1). We have noticed a marginal increase in the rate of decline in the number of branches in high income countries in the last couple of years and this is probably tied to the growth in mobile banking.

Mobile developments are having a significant impact but there is some way to go before it is widely used as a channel for banking and payments. For example, in the United States, the Federal Reserve reported that 39% of people with mobile phones had used mobile banking in 2014, an increase from 33% in 2013. Only 22% used mobile payments in 2014 but this figure will likely increase more rapidly with the launch of new services such as Apple Pay.

Figure 1: Banking growth measures by country income level

Measure	Units	Date	High income countries	Middle income countries	Low income countries
GDP per capita in PPS	Int$ per capita	2014	41,830	21,424	10,702
Branch growth rate	% per annum	2009-14	-2.3	0.6	5.3
Non-cash payments growth rate	% per annum	2009-14	4.2	12.1	17.5
Payment cards growth rate	% per annum	2009-14	0.4	6.9	13.5
Household debt growth rate	% per annum	2009-14	3.6	19.9	13.5

Note: The analysis is based on a sample of high, middle and low income countries where there is good historical market data. The figures shown are the average for those samples. PPS is Purchasing Power Standard.

Source: Efma Yearbook 2015

An analysis of the financial performance in the retail banking segment of some of the banks in developed countries which report on this segment illustrates the challenges. Across 4 large European banks (Barclays, Swedbank, Erste Bank and ABN Amro) the average growth in revenues for the 3 year period to the end of 2013 was 2.8% per annum. The average growth in operating expenses was -1.7% per annum, showing the focus on cost reduction. Nevertheless, profitability in some cases is quite high even though growth is low, for example at Swedbank where Return on Equity was 28% in 2013.

The rise of FinTech

In previous innovation studies we have highlighted the emergence of innovative start-ups in retail banking. We have focused mainly on those start-ups which are competing directly with banks for customers, but the broader category of FinTech includes a whole range of companies which could be suppliers to banks, partners with banks, and/or competitors.

Investment in FinTech as a whole has taken off dramatically in the last couple of years. According to CB Insights (a research firm which is tracking venture capital investment), the global funding for FinTech in 2010 was US$1.8bn, and in 2014 it reached US$12.0bn. While the number of deals has been increasing fast, the average deal size has also been increasing.

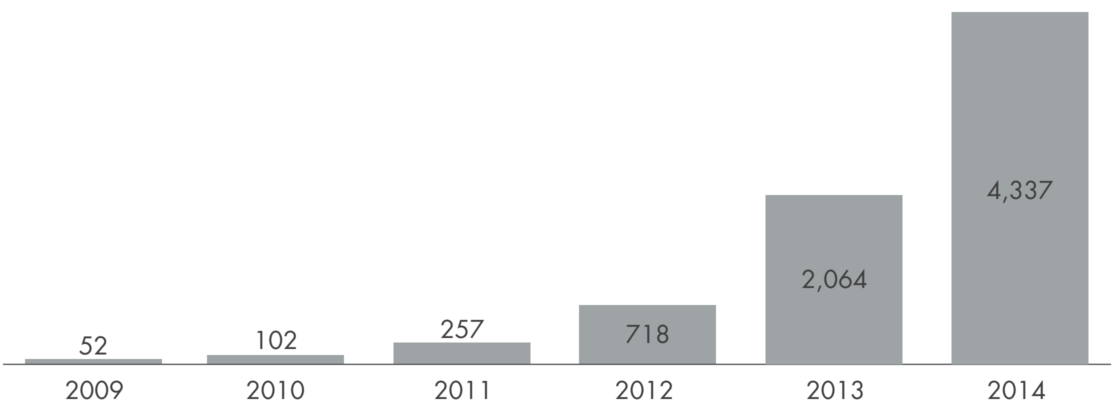
The largest sub-sector for investment in FinTech is payments, followed by lending and then wealth management. There has been a lot of media focus on some of the big success stories such as:

TransferWise (Payments)
TransferWise was founded in 2010 and is now believed to be worth more than US$1bn based on recent venture capital funding. The company uses a P2P model, where money exchange needs are matched so that money doesn't leave each country unnecessarily. It is able to undercut banks and other legacy competitors, such as Western Union, when sending money abroad.

Square (Payments)
Square was founded in 2009 and provides various payments products, including Square Register and Square Reader, and has expanded into small business services such as Square Capital and Square Payroll, and the consumer service Square Cash. The company is planning an IPO and is valued at several billion US dollars.

Lending Club (Lending)
Lending Club was founded in 2007 and is the world's largest online credit marketplace (see Figure 2), facilitating personal loans and business loans. Lending Club operates fully online with no branch infrastructure, and uses technology to lower cost and deliver a superior customer experience. The company had an IPO in December 2014 and is valued at around US$5bn.

Figure 2: Lending Club
Loan Origination Volumes 2009-14, US$m



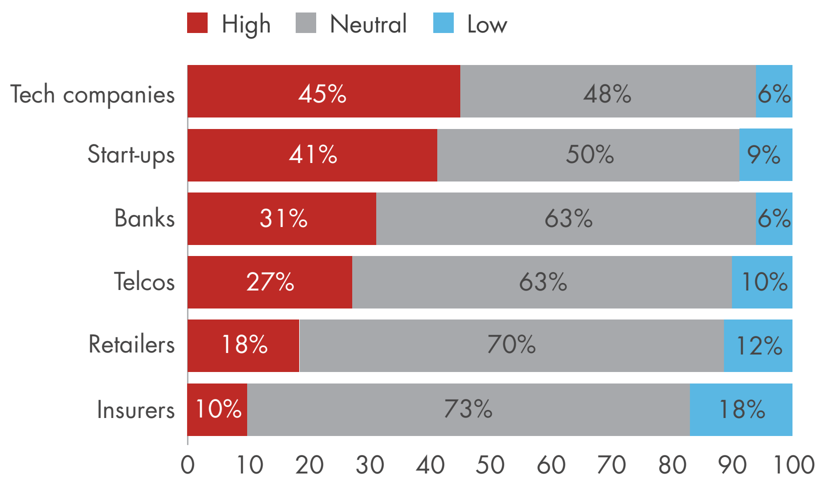
Source: Lending Club

The threat of industry disruption

Banks perceive that the threat of industry disruption in retail banking is growing and 72% regard the threat as high or very high from at least one group of potential competitors. The highest perceived threat is from tech companies like Google and Apple, seen as a high or very high threat by 45% of banks (see Figure 3). Google has been active in financial services for some time with Google Wallet, but has had relatively little success so far. A more significant development recently has been Apple Pay, but banks and card companies are actually working with Apple to make this service more useful for their customers. There are no signs yet of these companies trying to launch banks and attack the core markets of the established players.

Figure 3: Threat of industry disruption from new players

Using a scale of 1 to 7, the categories are High (6 or 7), Neutral (3, 4 or 5), Low (1 or 2)



Source: Efma-Infosys Finacle Innovation Survey 2015

The second highest threat is perceived to come from start-ups (41% of banks regard the threat as high or very high), although we know it would take some time for a start-up to disrupt the entire industry and generally they are focused on specific market segments. Even companies like TransferWise and Lending Club (described above) have had only a modest impact so far on the established players in the industry. The question may be when is the tipping point at which all of the new players in a particular area make it difficult for banks to compete effectively?

Less significant threats are seen from telcos and retailers, and even less of a concern is the threat from insurance companies. In fact it is hard to find any good examples of insurance companies launching retail banking services in the very recent past. Telcos are important players in mobile money around the world and hence will be competing with the banks in many markets. According to the GSMA[1], there were 255 mobile money services globally at the end of 2014, up from 233 services at the end of 2013. The number of active mobile money accounts reached 103m. Examples of services launched recently by telcos are:

Your Mobile Money (Peru)

With the goal of promoting financial and social inclusion in Peru, Movistar partnered with MasterCard to launch Your Mobile Money in 2015. This is the first electronic money service in Peru, which will offer users significant savings in their money transfers.

Myanmar Mobile Money (Myanmar)

Myanmar Mobile Money was launched in 2014 by Myanmar Post and Telecommunications and MECTel. It is focused on offering basic financial services through its network of agents and partners across the whole of Myanmar. The service enables person-to-person transfers, withdrawals and deposits, as well as salary disbursement and merchant payments.

There is less of a clear trend when it comes to retailers and financial services but there are some notable recent examples of expansion:

Tesco Bank (UK)

Tesco acquired a banking license and launched a current account in 2014 to build on the success of the existing Tesco financial services range. As of the end of 2014, the bank had UK£6.9bn of customer deposits in current and savings accounts.

WalMart (US)

WalMart entered into an exclusive agreement in 2014 with Green Dot to distribute the GoBank online and mobile banking service through WalMart stores. GoBank accounts can also be opened directly online, but WalMart is the only distributor of the service.

These two cases illustrate contrasting approaches. Tesco Bank has taken the harder route of acquiring a banking license and has set up its own systems for the current account and other financial services. WalMart is simply acting as a distributor for GoBank within the context of a broad range of financial services that WalMart is now offering to customers.

The banking industry response

The response of the banking industry to these new threats has been to increase innovation investment and to find new ways of working with start-ups. In the rest of this report we will be looking in more detail at where disruption is taking place – in terms of technologies and in terms of market segments, and the approaches that banks are adopting to work with innovative start-ups.

[1] 2014 State of the Industry – Mobile Financial Services for the Unbanked, GSMA

1 Innovation trends

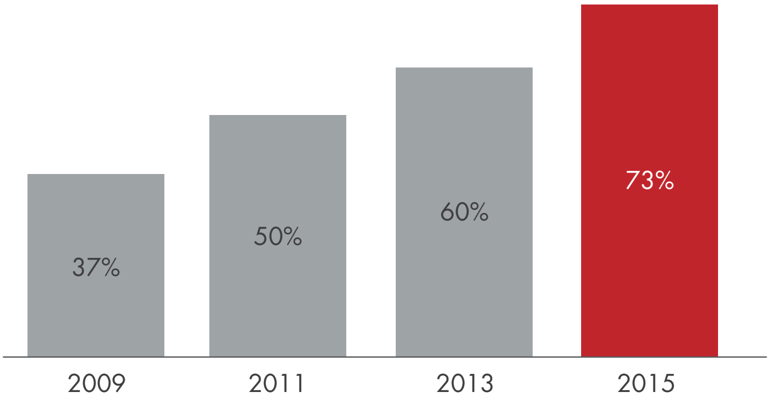
Innovation trends

Since the global financial crisis which began in 2009, there has been a strong increase in the importance of innovation at banks around the world:

- The proportion of banks with an innovation strategy (where we define an innovation strategy as having clear objectives, processes and measures of success for innovation) has increased from 37% in 2009 to 73% in 2015 (see Figure 4).
- The proportion of banks increasing their innovation investment over the previous year was 15% in 2009, but this has risen to 84% in 2015 (see Figure 5). It is clear that the big change occurred in the period 2009 to 2011 but since 2011 there has been a steady increase in this measure.

Figure 4: Innovation strategy

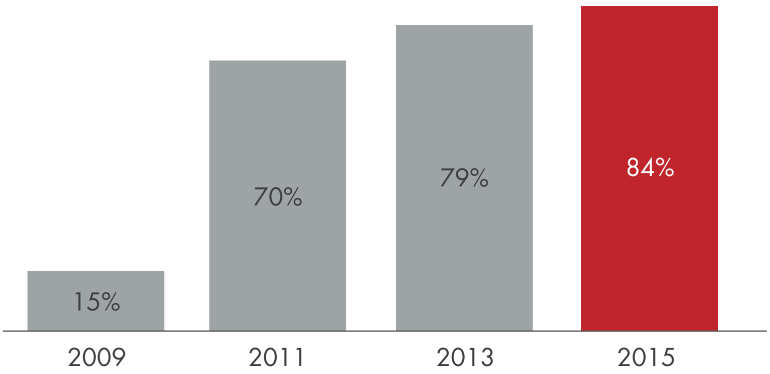
Proportion of banks with an innovation strategy



Source: Efma-Infosys Finacle Innovation Surveys 2009 to 2015

Figure 5: Innovation investment

Proportion of banks increasing innovation investment compared to previous year

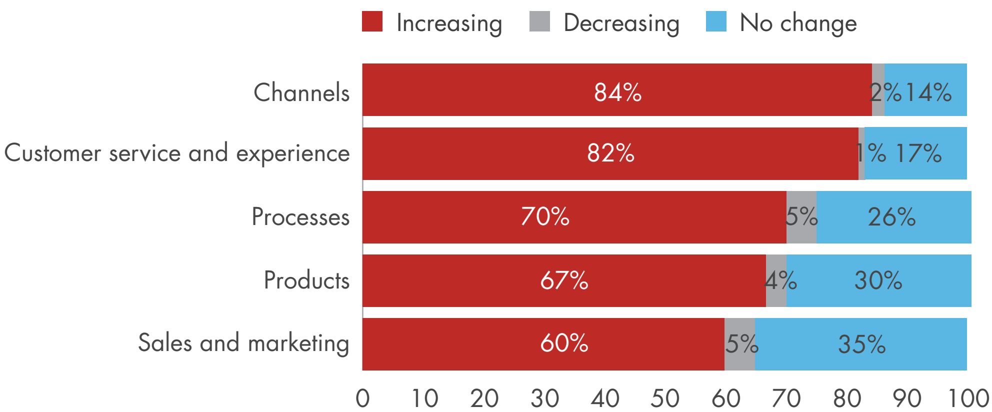


Source: Efma-Infosys Finacle Innovation Surveys 2009 to 2015

There has been no change in the fact that it is in the area of channels that innovation investment is increasing at more banks (see Figure 6). Following channels closely is customer service and experience. In fact the relative importance of the different areas has changed very little in the last few years.

Figure 6: Innovation investment by area

Proportion of banks increasing innovation investment compared to previous year



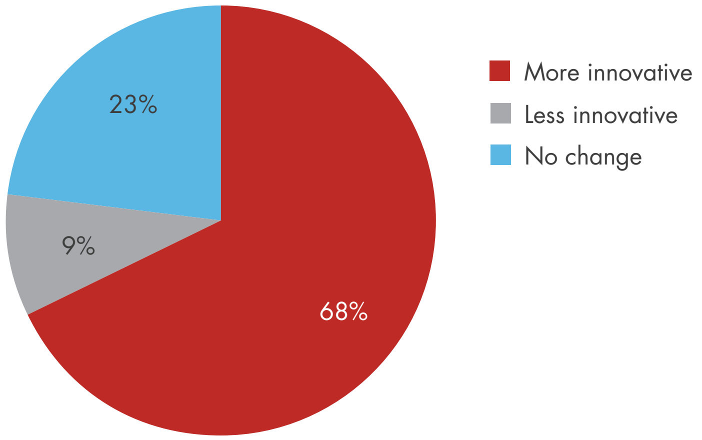
Source: Efma-Infosys Finacle Innovation Survey 2015

Our survey this year found that only 45% of banks are aiming to be innovation leaders and 36% are aiming to be a fast follower. Being a fast follower is not necessarily a bad strategy as the first to market is not always the most successful in the long term and you can learn from the mistakes of others.

Is this increased focus on innovation paying off? We asked banks if they felt they were becoming more innovative and 68% said that they were (see Figure 7). Only 9% said that they were becoming less innovative although this is an increase from last year.

Figure 7: Innovation performance

Proportion of banks becoming more or less innovative

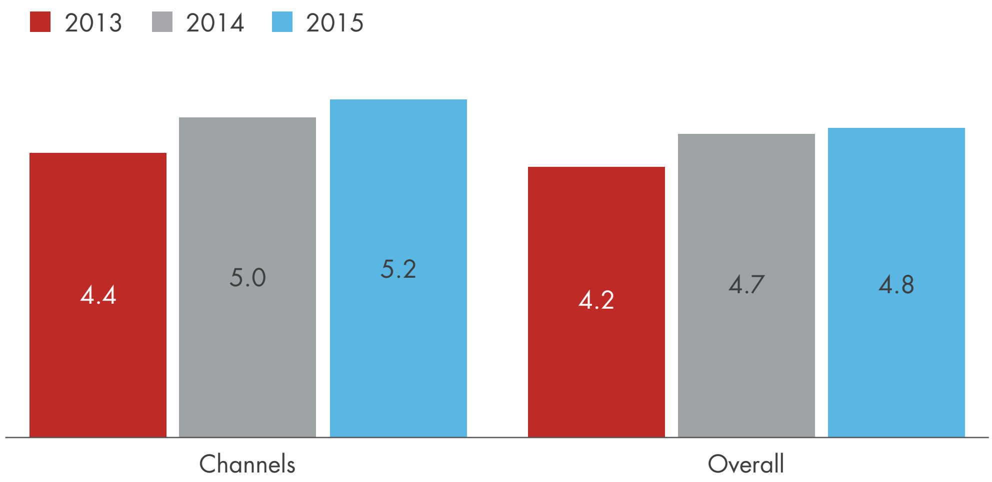


Source: Efma-Infosys Innovation Survey 2015

Another way of looking at performance is the self-assessment scores from the survey (see Figure 8). There has been an increase in the last few years in these scores for overall innovation performance, and for innovation performance in the area of channels. The overall score of 4.8 on a scale of 1 to 7, is not yet outstanding but is starting to look reasonable.

Figure 8: Innovation performance scores

Self-assessment of innovation performance on a scale of 1 to 7, where 1 is very low and 7 is very high



Source: Efma-Infosys Finacle Innovation Surveys 2013 to 2015

Innovation focus at Wells Fargo

There will always be a debate about whether or not a bank needs a central innovation team to help drive innovation. Some bankers argue that innovation needs to be devolved and not centralised, and most would agree that innovation cannot be top down only. However, an innovation team can help to co-ordinate activities and projects across functional and business unit silos, and can focus investment in some areas that would not otherwise be picked up by individual business units. Wells Fargo is an example of a large retail bank which has recently set up a team to drive innovation faster.

Wells Fargo is the largest retail bank in the United States, with more than 8,700 branches and 70 million customers. In July 2015, the bank formed a new innovation group which is a cross-functional organisation with the goal of keeping the bank at the forefront of technological innovation. The group will focus on R&D, innovation strategies, payments, design and delivery, and analytics. According to Steve Ellis who runs the new group, “the end goal is to serve as a catalyst for the company to quickly transform its business models, processes and programs, and user experience all while successfully managing within an enhanced risk and regulatory environment”.

2 Disruption and start-ups

Disruption and start-ups

We have seen the dramatic impact of new technologies on a whole range of industries from music to travel. In the case of banking, the level of disruption has so far been limited and banks have had time to adapt – for example with internet and mobile banking – before new players make big inroads. There are several reasons for that but probably the most important are regulatory constraints and customer inertia. However, there are so many new players now attacking all aspects of the industry, banks should be concerned that we could be at the start of a period of more dramatic change.

Disruptive technologies

Several new technologies have emerged in recent years which are starting to have a significant impact on the banking industry. One reason is that new players are using these technologies to launch innovative products and services, which threaten to disrupt the industry.

We asked banks what the most disruptive technologies were and we found that "mobility" and "advanced analytics" were the two most disruptive with 59% and 57% of banks respectively saying that the disruption level was likely to be high or very high (see Figure 9). These were followed closely by "open APIs" (53%) and the "internet of things" (47%).

- Mobility – we see examples of this in all sectors and sub-sectors of the retail banking business and mobile continues to be the hottest area of innovation focus for most banks

- Advanced analytics – innovation in advanced analytics can be seen particularly in areas like credit scoring for lending applications and in personal financial management applications

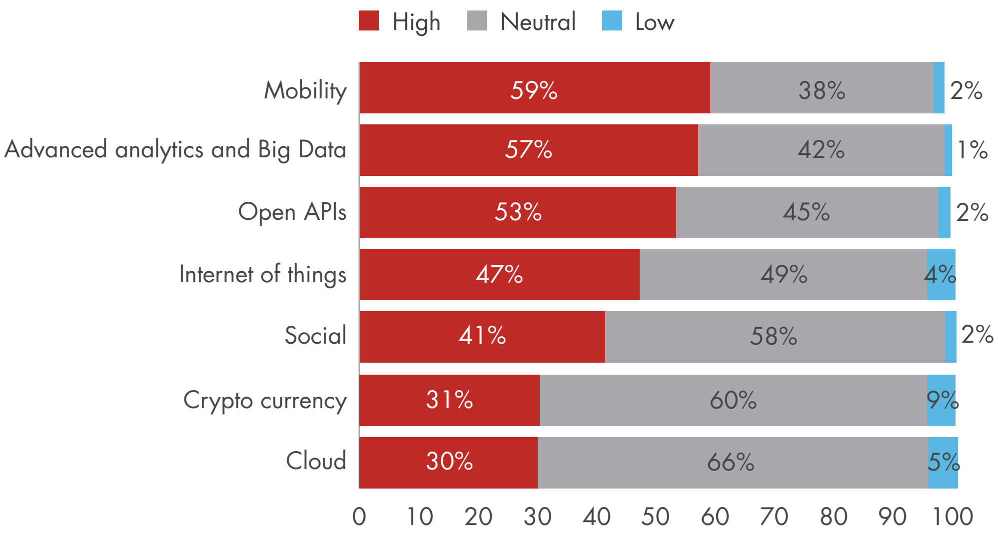
- Open APIs – this is an enabling technology which will make it possible for new applications to be built on older systems and this is now being applied to banking (see box on page 21)

- Internet of things – connecting devices in new ways across a wide range of applications creates the "internet of things", for example wearables, which has implications for banking

Cryptocurrencies were not expected by our survey respondents to be as disruptive as other technologies (only 31% rated the likely level of disruption as high or very high), although there are nevertheless many banks who believe that the underlying technology of bitcoin, which is the blockchain, could be very disruptive. The blockchain is the public and decentralized online ledger which verifies transactions in digital currencies such as bitcoin. It is an indelible record, where authenticity is verified by a network of computer users rather than a centralized authority. For example, UBS of Switzerland has set up a lab in London to explore how blockchain technology can be used in financial services. Some of the areas of impact being talked about are in wholesale markets like securities trading, but the big impact in retail financial services could be in the area of payments processing.

Figure 9: Disruptive technologies

Rating of the importance of disruptive technologies by banks
Using a scale of 1 to 7, the categories are High (6 or 7), Neutral (3, 4 or 5), Low (1 or 2)



Source: Efma-Infosys Finacle Innovation Survey 2015

Open APIs

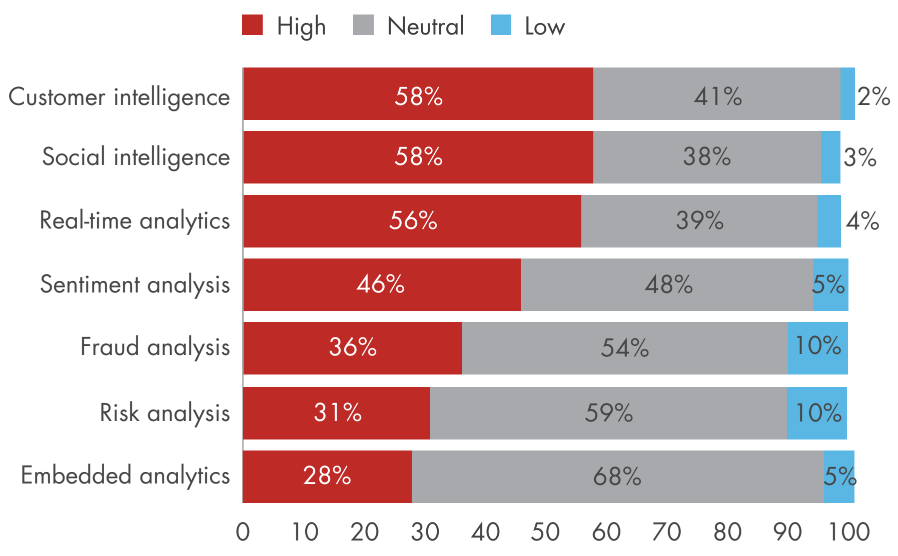
An open API is an application program interface that provides a developer with programmatic access to a proprietary software application. One company which is active in this area is The Open Bank Project. The company provides an open source developer friendly "API for banks" that developers and companies can use to build innovative applications and services based on the account holder's transaction data. The Open Bank Project approach exposes transaction data in a simple and consistent structure by abstracting away the peculiarities of each banking system. This is achieved by "connectors" that interface between the OBP API and each core banking system. It allows application developers to write an app once, and use it for many banks. The Open Bank Project enables banks to offer an ecosystem of 3rd party apps and services to their customers.

Within the analytics space, banks say that customer intelligence, social intelligence and real-time analytics technologies will have the most impact (see Figure 10). In each of these areas, more than half of the respondents in our survey believe that the importance is high or very high. Some recent examples of successful developments by banks in these areas are:

- Customer intelligence: Kotak Mahindra (India) used advanced analytics including correlation, association, segmentation, and geo-clustering to develop target segments for the revival of dormant accounts.
- Social intelligence: Nedbank (South Africa) developed a social media analytics tool to categorise and report on content and topics from various channels, and provide its social call centre with tools to manage conversations with customers, including complaints, compliments and leads.
- Real-time analytics: mBank (Poland) created a real-time marketing platform with a web analytics tool, a real time engine, and context marketing adjusted on the go. The platform utilizes data from different sources to present relevant advice-like offers and communication in real-time.

Figure 10: Analytics technologies

Rating of the importance of analytics technologies by banks
Using a scale of 1 to 7, the categories are High (6 or 7), Neutral (3, 4 or 5), Low (1 or 2)



Source: Efma-Infosys Finacle Innovation Survey 2015

Disruptive business models

In addition to disruptive technologies there are disruptive business models to consider. The most notable of these business models in recent years which has impacted banking is Peer-to-Peer (P2P). Interestingly, only 40% of respondents to our survey believe that P2P will have a high or very high impact on the industry, with most expecting only a modest impact.

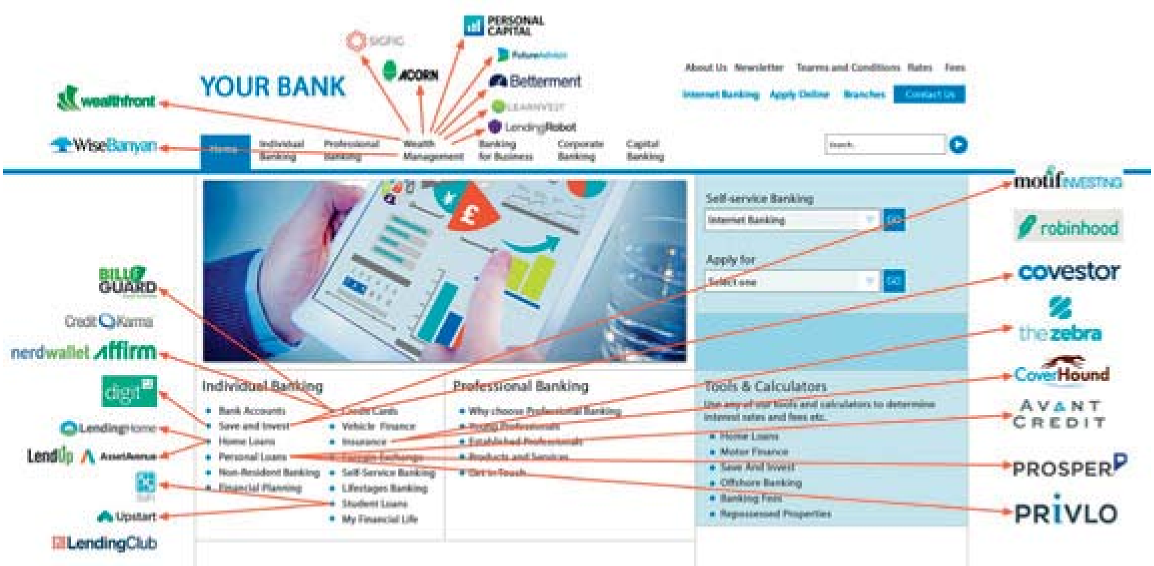
There are already P2P success stories like Lending Club, which was the pioneer of P2P lending in the United States. However, this is a global trend and it has been estimated that there were 1,575 P2P lenders operating in China by the end of 2014, with a cumulative total of US$10 billion lent since inception[2].

P2P money transfers are the other big development of this business model, either domestic or international. We have already mentioned the success of TransferWise which is now valued at more than US$1 billion, but there are many others operating in this space. One interesting example we describe on page 26 is BitPesa which is using a bitcoin-based business model to make money transfers between the UK and Kenya, bypassing the traditional money transfer channels completely.

Impact of start-ups on banking

The impact of start-ups is being felt across the whole range of traditional services provided by banks (see graphic below) including for example current accounts, cards, payments, lending, savings and investments, and insurance.

How start-ups are targeting traditional banking services



2 According to research by Chinese P2P lender Wangdaizhijia

The core business of most banks is providing a current account with associated payment services, and on the back of this cross-selling is used for a range of other products. It is more challenging for a start-up to target the core current account business of banks than other product areas, and hence the number of cases we see in this space is relatively small. There are, however, interesting and significant examples such as:

- MYbank (China): A new branchless-bank which has been backed by Alibaba, MYbank launched in June 2015 with capital of more than US$500m.

- Number26 (Germany): A mobile bank backed by venture capital investors, which operates on the back of the banking license of Wirecard (see Case Study on page 51).

MYbank is particularly interesting as an example of how an e-commerce company, in this case Alibaba, might enter the financial services business, which is the fear of many banks around the world.

The UK is an interesting market to consider because there are a number of venture capital backed, mobile-focused banks which are in the process of being established – including Atom, Starling, Lintel, Open Bank and Mondo. According to Jason Bates a co-founder of Mondo, the company is aiming to create the best digital current account in the world, built on a customer-driven organisation. All of these banks are setting out to "disrupt" retail banking so how they perform over the next few years will be a valuable case study for new banking models.

Other start-ups are adopting a "bank-lite" model which is based around a prepaid debit card linked to a mobile phone app. These companies are providing an alternative to normal banks but with a limited service, which might be attractive to certain customer segments. Examples include Anytime in France and Nubank in Brazil.

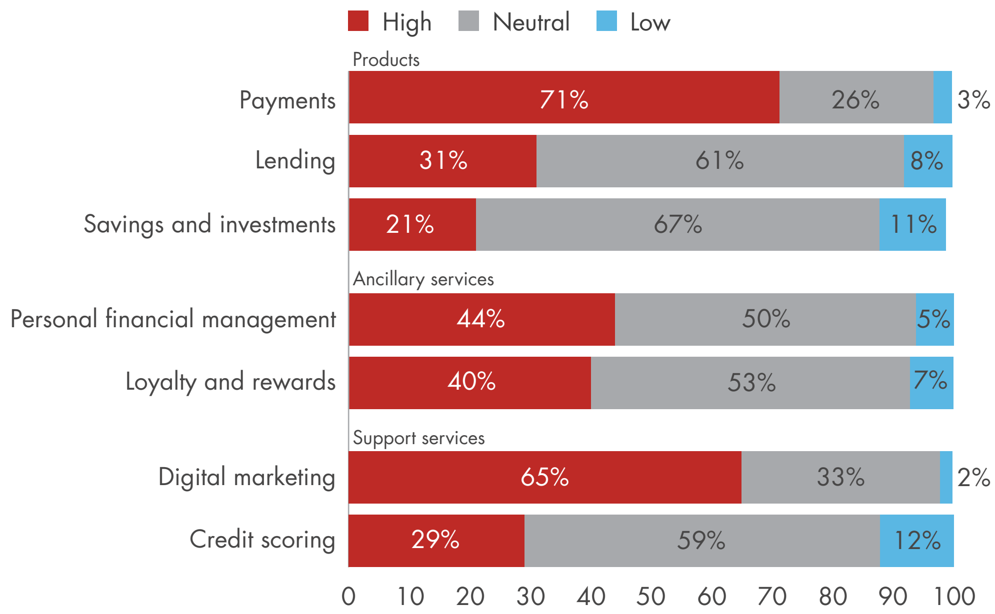
However, as mentioned above, the majority of start-ups tend to be more focused on a specific product or service, or a supporting technology. In our survey, we asked banks to consider the impact of new players on the following areas:

- Products – Payments, Lending, Savings and Investment
- Ancillary services – Personal Financial Management, Loyalty and Rewards
- Support services – Digital Marketing, Credit Scoring

From this list, Payments and Digital Marketing are the areas where banks expect start-ups to have the most impact (see Figure 11). In Payments, 71% of banks believe the impact will be high or very high, and in Digital Marketing it is 65% who expect the impact to be high or very high. In other areas like Savings and Investment, the impact is not expected to be high by most banks.

Figure 11: Expected impact of start-ups

Using a scale of 1 to 7, the categories are High (6 or 7), Neutral (3, 4 or 5), Low (1 or 2)

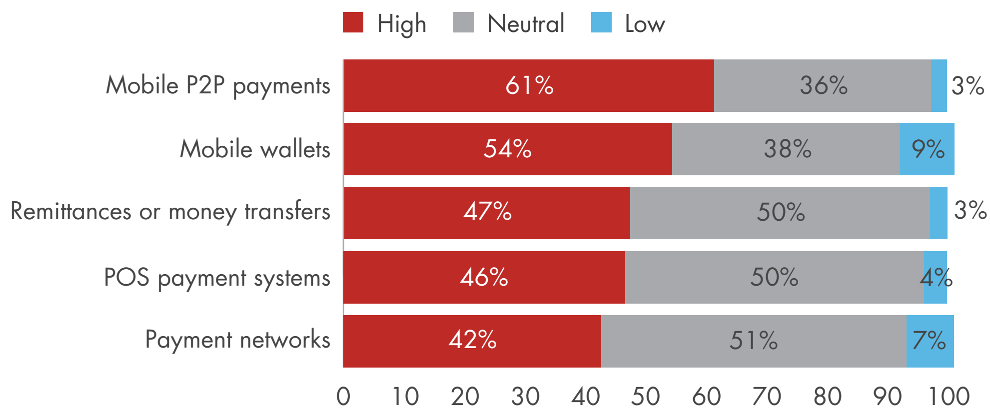


Source: Efma-Infosys Finacle Innovation Survey 2015

Within the payments space the segments where banks expect start-ups to have the most impact are Mobile P2P and Mobile Wallets (see Figure 12).

Figure 12: Expected impact of start-ups on payments

Using a scale of 1 to 7, the categories are High (6 or 7), Neutral (3, 4 or 5), Low (1 or 2)



Source: Efma-Infosys Finacle Innovation Survey 2015

On the following pages we describe a series of interesting start-ups that are targeting specific areas of the retail banking industry.

START-UP CASE EXAMPLES – PAYMENTS

BitPesa

BitPesa is a Kenyan company which allows individuals and businesses to send money to and from Kenya and Tanzania, using Bitcoin as the money transmission mechanism. The company was launched in 2014 and is backed by venture capital investors. The company will accept Bitcoin from nearly anywhere in the world and exchange it for Kenyan and Tanzanian Shillings. The recipient will receive Kenyan or Tanzanian Shillings into a Kenyan or Tanzanian mobile money wallet (e.g. M-Pesa, Tigo, Orange, Airtel, or Yu). Fees are only 3% of the transaction, much lower than traditional forms of money transfer, and the money is received in the account in minutes.

According to BitPesa, SME and Micro SME customers are using the platform to pay and receive salaries from abroad, access real-time payments for supplier shipments, and market their products globally. BitPesa's goal is to build a completely transparent, low-cost, instantly interoperable company that does not have a legacy of paperwork or outdated systems, despite presence in frontier markets. They have already built partnerships with payment and exchange companies in China, Canada, US, Europe, and India with less than a week of integration work, have incorporated in Kenya, Tanzania, Uganda, and Nigeria and are receiving an MRB Payments Institution License in the UK.

BitPesa is one of many companies now targeting the remittance space with Bitcoin-based services. These include Rebit (Philippines) and Abra (United States).

Yoyo Wallet

Yoyo is a UK company which in 2014 launched a mobile wallet that simplifies and speeds up in-store transactions by combining payment and loyalty via one easy scan. It also provides a marketing platform for retailers that enables digital customer engagement in-store. The company is funded by venture capital investors.

Yoyo was founded by Alain Falys and Michael Rolph who were frustrated with the growing number of ideas that tried to solve a problem that didn't exist – payments are not broken. They set out to build Yoyo Wallet as the solution that cuts through the 'mobile payment' noise and actually benefits retailers and consumers.

The question they set out to answer was "how do you make mobile relevant for retail"?

With Yoyo the user preloads money onto the wallet and then, at the point of sale, a unique QR code is generated for each transaction. The retailer then scans the code to receive the payment. It does not require proprietary technology, only a 2D barcode-scanner which is already found in around half of retailers. Yoyo has focused initially on university campuses and has spread to 15 British universities as part of its focus on "closed environments". Since receiving additional venture capital funding in 2015, it is now in the process of expanding into the United States.

Affirm

Affirm launched its consumer lending service in the United States in 2013. The company was started by Max Levchin, one of the founders of PayPal. It is funded by venture capital investors and has raised around US$45m in equity and debt finance.

Affirm's initial product allowed users to purchase online and then pay back the amount within 30 days – a sort of virtual charge card. Affirm's "Split Pay" service lets online merchants offer instalment payments to their consumers at the point of sale. Using Split Pay, online shoppers can make a purchase and pay across multiple months with simple, clear financing fees at a fraction of credit card interest rates.

Rather than rely on FICO credit scores, Affirm calculates the risk of borrowers based on a range of personal data including information gleaned from social-media profiles as well as the cost of the items being purchased. It then determines what rate and structured payment makes sense to offer the customer.

Like many start-ups, Affirm believe the financial industry desperately needs reinvention. According to the company "not only is the core infrastructure built with technology from the 1970s, but a dwindling number of people can say "I trust my bank to look out for me"". Affirm's mission is to fix this problem using modern technology to re-imagine and re-build core components of financial infrastructure from the ground up, delivering less expensive, more transparent financial products.

Activehours

Activehours provides an advance on upcoming pay to hourly workers using a smartphone app. The company was launched in the United States in May 2014 and is funded by venture capital investors, led by Ribbit Capital.

The mobile app works by letting users track the number of hours they have worked and allowing them to tap into their unpaid wages before the money hits their bank account on payday. Activehours is open to workers paid hourly, regardless of their employer. The service has grown quickly since launch to include employees from over 250 employers, from large retailers to top banks, universities and hospitals.

Activehours does not charge any fees or interest as they believe that bank overdraft fees are unfair. The company is therefore supported by voluntary tips from users. According to Ram Palaniappan, the founder of Activehours – "We're using technology already in smartphones to update a two-week pay process that hasn't changed in hundreds of years. If you've already put in the hours at work and earned your pay, you should be able to access it and use it when you want. Before, people didn't have a choice, but now we're putting the control into their hands."

Ribbit Capital itself is an interesting company which has received investment from BBVA Ventures. The Silicon Valley-based venture firm targets disruptive, early stage companies around the world that leverage technology to reimagine and reinvent what financial services can be for people and businesses.

CASE EXAMPLES – SAVINGS & INVESTMENTS

Vaamo

Vaamo is a venture capital funded start-up from Germany which launched in 2014. The company offers a new way for people to save and invest by providing the easiest and most intuitive online investment solution for private individuals. It is a good example of a new type of company which is described as a "robo-adviser".

Vaamo has set itself the task of enabling private investors easy access to private investment and private wealth accumulation. The focus is on the customer's personal savings goals, such as to purchase a home, children's education or private pensions, which they can plan and track via a web interface. The company uses a behavioural science approach, which supports the specification and visualization of the savings goals, and focuses on the ease of use for an easier start in the investment business and for more motivation on the way to the goal.

The underlying system concept was developed in collaboration with the Goethe University in Frankfurt and is based on passive investment across more than 15,000 international securities, with low fees. Vaamo customers can choose for each savings goal between three levels of risk that are composed according to a higher / lower share of equities or bonds. For safekeeping of client assets, Vaamo works with the fund platform FFB, while funds are sourced from US vendor Dimensional Fund Advisors.

Digit

Digit is a venture capital funded start-up in the United States which launched in 2014. One of its investors is Google Ventures which sees potential in this type of business. The Digit service is designed to make it easier for users to save small amounts of money, which can build up over time, without having to do complicated monitoring of their financial position using the typical PFM type apps that are now common.

The key features of the service are:

- Connect to a bank account: To use Digit, the customer needs to connect a checking account. This allows Digit to analyze income and spending, and find small amounts of money it can safely set aside.

- Digit saves a little every week: Every 2 or 3 days, Digit transfers some money (usually $5-50) from the checking account to a Digit savings account. Digit never transfers more than the user can afford, so they don't have to worry about over-drafting the account.

- Access the savings anytime: When the user needs access to the savings, they can send Digit a text message. Digit will transfer the money from the Digit savings account back to the checking account by the next business day.

One interesting aspect of the service is that apart from a basic website, Digit is designed to be managed exclusively through text messages. Digit allows unlimited transfers, with no minimums, and no fees. The company offers no interest on the amount that is saved in the Digit account (it is restricted from doing this) but it has started to offer a small cash reward as an alternative. This is an innovative model and it will be interesting to see if this type of business model is sufficiently attractive to customers in the longer term.

CASE EXAMPLES – PERSONAL FINANCIAL MANAGEMENT

Tink

Tink is a mobile personal financial management app that provides consumers with insight and 'fun facts' about their money. The company is based in Sweden. The app continuously collects, sorts and analyses everything about its users' personal finances and delivers a simple feed so users can organize, track and plan their finances.

Users cannot transfer money or make payments using Tink, but all data is encrypted with the same security requirements used by banks. The app is available on iOS and Android phones, and was created in Stockholm in 2012 by entrepreneurs Daniel Kjellén and Fredrik Hedberg. It is currently available in Sweden, where over 2% of the population have downloaded the app, and is expected to be rolled out elsewhere in Europe. In the near future, Tink expects to be able to make intelligent product recommendations based on the analysis of users' bills and transactions, from which the company can receive kickbacks.

Similar services are offered in the US by products such as Mint and Level Money, and in Europe by companies like Number26 (Germany), Bankin' (France) and Money Dashboard (UK). Tink's differentiation is its feed-based UI, designed to be extremely time efficient and to allow users to dip in and out of the app.

Squirrel

Squirrel is a financial wellbeing platform that empowers employees to regain control of their financial lives. The company was launched in 2014 in the UK, and was originally part of the Barclays Accelerator programme. Squirrel's mission is to address the causes of financial distress by giving people simple tools to regain control over their finances.

Squirrel works by partnering with responsible employers to provide simple and intuitive tools to help people save, budget and manage their bills directly from their payroll. Squirrel is designed to take away the financial anxiety that many people feel, by acting as a total savings, budgeting and bill management tool that's linked to the employer's payroll, helping people save directly from their pay, or get emergency funds straight from accrued wages if they need a cash injection. The service also helps people automatically switch to the best suppliers to save on bills.

The company charges employers a fee, considering the service as an employee benefit. For the employee, Squirrel:

- Negotiates, manages and settles bills
- Helps stagger disposable income into manageable amounts
- Sets aside money each month to achieve savings goals
- Provides an alternative to payday loans in case of sudden need

3 How banks are working with start-ups

How banks are working with start-ups

It is clear that start-ups are at the forefront of innovation in retail financial services. In some areas they are competing with banks, and in other areas they are developing products and services that can be used by banks. Either way, there is an opportunity for banks to work with start-ups, as partners or suppliers.

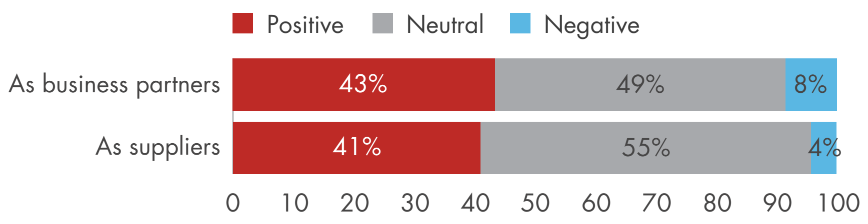
Attitude towards working with start-ups

In general, banks recognise this opportunity. Figure 13 shows that 43% of banks in our survey were positive or very positive about working with start-ups as business partners, and 41% were positive or very positive about working with start-ups as suppliers.

In one recent example, ING Group has appointed a Head of FinTech to be responsible for developing ING's strategy towards working with innovative financial technology companies. According to ING, the appointment illustrates ING's determination to accelerate its innovation programme which is one of the key elements of the group's strategy.

Figure 13: Attitude towards working with start-ups

Using a scale of 1 to 7, the categories are Positive (6 or 7), Neutral (3, 4 or 5), Negative (1 or 2)



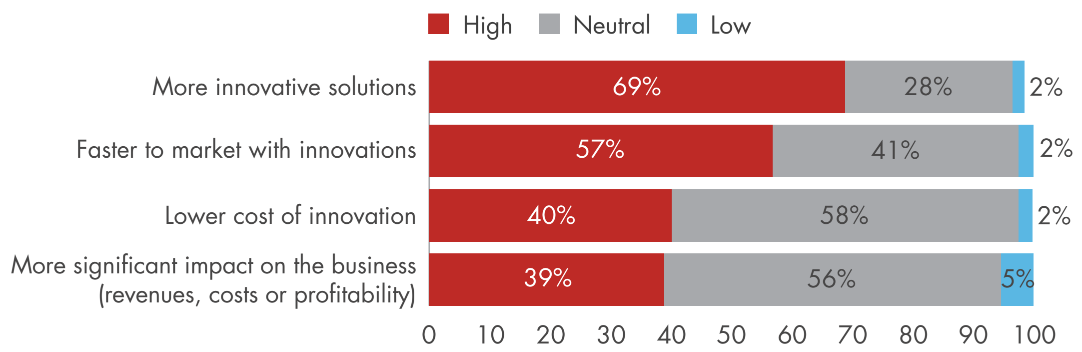
Source: Efma-Infosys Finacle Innovation Survey 2015

Impact on innovation capability

The impact on a bank's innovation capability from working with start-ups is believed to be significant (See Figure 14). Over two thirds of banks say it has a high impact on their ability to deliver more innovative solutions, and over half of banks say it has a high impact on their speed to market with innovations.

Figure 14: Impact on innovation from working with start-ups

Using a scale of 1 to 7, the categories are High (6 or 7), Neutral (3, 4 or 5), Low (1 or 2)

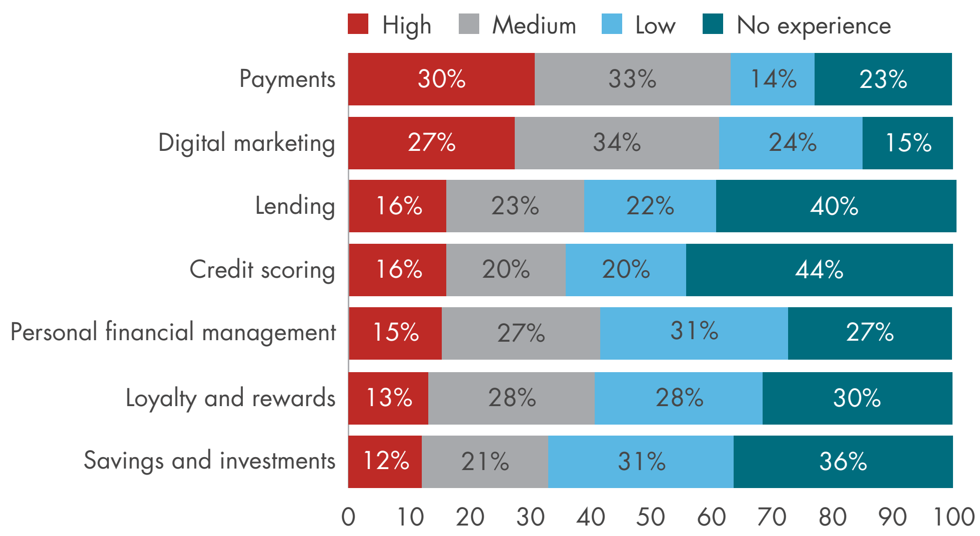


Source: Efma-Infosys Finacle Innovation Survey 2015

Experience of working with start-ups

Although attitudes are positive, the experience of working with start-ups across a range of products and services is still relatively modest (see Figure 15). The most common area of cooperation is in payments, where 30% of banks say they have a high level of experience of working with start-ups. Digital marketing is the next most common area with 27% at a high level of experience, but in the other areas the proportion of banks with a high level of experience is around 15% or less.

Figure 15: Experience of working with start-ups



Source: Efma-Infosys Finacle Innovation Survey 2015

This is set to change in the next few years with a high proportion of banks saying they expect to increase their involvement with start-ups (see Figure 16). For example, 86% of banks in our survey expect to increase their involvement with start-ups in digital marketing and 78% in payments.

Figure 16: Expected future involvement with start-ups

Proportion of banks expecting to increase involvement

Source: Efma-Infosys Finacle Innovation Survey 2015

Approaches to working with start-ups

There are two types of approach to working with start-ups where we have witnessed a significant increase in the last couple of years: through accelerators or incubators, and through investing in start-ups.

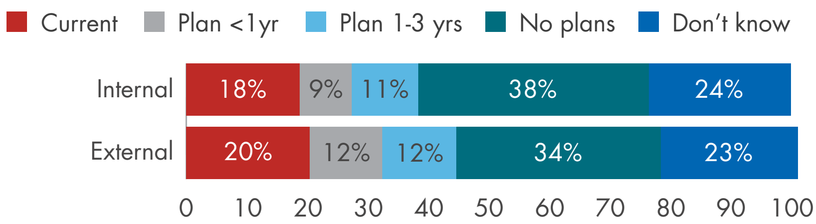
Accelerators/incubators

Our survey shows that around one fifth of banks now has their own internal incubator or is partnering with an external accelerator/incubator (see Figure 17). Sberbank (see case study on page 48) is a good example of a bank with an internal incubator which can also invest in or acquire start-ups and then incubate them for the bank outside of the normal corporate structure. There are numerous examples of banks which are now working in partnership with external accelerators and we have described a few of these from different regions of the world in the box on page 37: Barclays (UK), DBS (Singapore), Citigroup (US).

The purpose of the accelerator/incubator model is well summed up by Debbie Bracken, Managing Director and Global Head, Innovation Network at Citi Ventures which has partnered with Plug and Play to expand its existing accelerator activity from the US on a global basis. According to Bracken: "Citi Ventures actively seeks partnerships that marry entrepreneurial speed with corporate scale to successfully accelerate new solutions. Working with Plug and Play enables us to deepen our relationships with companies, investors and entrepreneurs that are passionate about the future of financial services".

Figure 17: Banks and accelerators/incubators

Proportion of banks with internal or external accelerators/incubators



Source: Efma-Infosys Finacle Innovation Survey 2015

Investing in start-ups

According to Josh Lerner, Professor of Investment Banking at Harvard Business School, the purpose of investing in start-ups, typically described as corporate venturing, is "to provide both an inside look at new technological fields and a path to possible ownership or use of new ideas, and corporate venturing can allow a firm to respond quickly to market transformations"[3]. According to Lerner, a corporate venture fund can also serve as an intelligence-gathering initiative, helping a company protect itself from emerging competitive threats.

We estimate from our research that only 10% of banks have dedicated corporate venture funds to invest in start-ups and some good examples are described in the box on page 38: Santander (Spain), National Bank of Australia (Australia) and Citigroup (US). Ad-hoc investment in start-ups is more common but still only pursued by around 20% of banks.

Of course some banks are going further than making investments and are buying control of innovative start-ups, one of the best recent examples being the BBVA acquisition of Simple in the United States. Interestingly, BBVA is buying in other areas as well, having recently acquired Spring Studio which is a user experience and design company. According to BBVA: "The importance of user experience and design is growing exponentially in banking and with Spring Studio we can move into fast-forward mode with our design ambitions". Capital One has also recently acquired a design and product development firm to boost its innovation efforts.

[3] Corporate Venturing, Josh Lerner, Harvard Business Review October 2013

ACCELERATORS/INCUBATORS

Barclays (UK)

Barclays began its accelerator programme in London in 2014, in partnership with Techstars. Located in an area of east London known as TechCity, the London accelerator has already supported two cohorts of start-ups. In July 2015, Barclays and Techstars opened a second accelerator in New York, and rebranded the accelerators as "Rise". By the end of 2016, Barclays plans to have opened Rise hubs in North America, Europe, Africa and Asia. In each location, Rise will provide a physical site for innovative companies, offering a co-working environment, world-class event spaces, and meeting rooms. Rise will also house the Barclays Accelerator, a 13-week program for FinTech start-ups, run in partnership with Techstars. In addition, Rise will be a global digital network aimed at promoting online collaboration and participation in innovation challenges (see Case Study on page 49).

DBS (Singapore)

DBS launched its accelerator in June 2015 in Hong Kong, in partnership with Nest which is a local incubator. The DBS accelerator is designed to help innovators from across Asia and around the world realise the transformative power of FinTech-focused disruptive technology to ignite possibilities and create an impact beyond banking. The start-up participants will be guided through their business growth and development with the help of business mentoring from DBS Bank and Nest senior executives as well as other partners. The accelerator, which is called "The Vault", is based in a newly renovated and state-of-the-art 5,000-square foot workspace in Wan Cha. It is the first of its kind for the bank and will provide DBS Accelerator start-up participants with work and office space, vast resources and mentor support.

Citigroup (United States)

Citi created its first FinTech accelerator in Israel in 2013. The programme was expanded significantly in December 2014 with the launch of a partnership with Plug and Play Tech Center, a global investor and technology accelerator. Together with Plug and Play, Citi Ventures is creating accelerators in the United States, Germany, Singapore and Brazil. The program offers start-ups mentorship, feedback on product ideas and roadmaps, and introductions across the global networks of Citi Ventures, Plug and Play and other sponsoring partners. Over a 12-week period, the U.S. accelerator program will accept 20-30 start-ups in each of two classes in its 2015 inaugural program. These accelerators will be complementary to the existing labs being run by Citi around the world.

CORPORATE VENTURING

Santander (Spain)

The Santander InnoVentures fund was launched in July 2014. The US$100m fund is based in London, but has a global remit, and builds on the bank's philosophy of collaboration and partnership with small and start-up companies. The fund is 100 per cent owned by Santander UK, but is a self-standing, specialised, organisation, fully dedicated to the remit of supporting FinTech companies worldwide. Areas of focus include digital delivery of financial services, e-commerce and payments, e-financial investment services, online lending, and Big Data analytics. Investments to date include Monitise (mobile banking solutions) and MyCheck (mobile payments and loyalty services).

National Australia Bank (Australia)

NAB Ventures is an A$50m FinTech fund which was launched in July 2015. The fund is part of NAB Labs, a dedicated innovation capability which aims to build a culture of innovation and customer-led design at NAB. The fund will have two key objectives:

- Deliver accelerated access to new capability, technology, intellectual property, and businesses that could be deployed into NAB and its customer offering.
- Enhance NAB's insight into and connection with emerging business models and technology. Key areas of focus include mobile platforms, payments and data and analytics.

Citigroup (United States)

Citi Ventures was founded in January 2010 in Palo Alto (Silicon Valley) making it a pioneer in the recent wave of corporate venturing in financial services in the United States. Since then the company has made 21 investments, of which 2 have been exited so far. The areas in which Citi Ventures focuses are: Big Data & Analytics, Commerce & Payments, Financial Technology, Security & Enterprise IT. Betterment and Square are examples of companies in which Citi Ventures has invested. According to CB Insights, Citi has made more FinTech investments than any other major bank in the US in the period 2009 to 2015, and significantly more than the largest retail bank, Wells Fargo, which has made just 3.

Banks partnering with start-ups in other ways

There are numerous ways in which banks can work with or partner with innovative start-ups (who may also be competitors), apart from through accelerators/incubators or through corporate venturing. Some interesting cases to highlight are:

State Bank of India – Ezecash (India)

In October 2014, Ezecash and State Bank of India launched the 'Chota ATM'. The ATM device can be bought by a local store and it is also a point-of -sale terminal for collecting electronic payments from any debit or credit card.

Metro Bank – Zopa (UK)

In May 2015, Metro Bank announced a plan to lend funds through the P2P lending platform of Zopa in the UK. This innovative deal is the first of its kind in the UK. Zopa and Metro Bank believe the partnership is a great example of how disruptive financial challengers can collaborate to provide additional value and revolutionise the UK banking sector.

TD Bank – Moven (Canada)

In December 2014, TD Bank announced that it would partner with Moven to launch the Moven app in the Canadian market. The Moven app will operate alongside the TD mobile banking app and provide customers with the ability to manage their spending habits at every transaction by linking their TD banking activities in real-time to their savings goals.

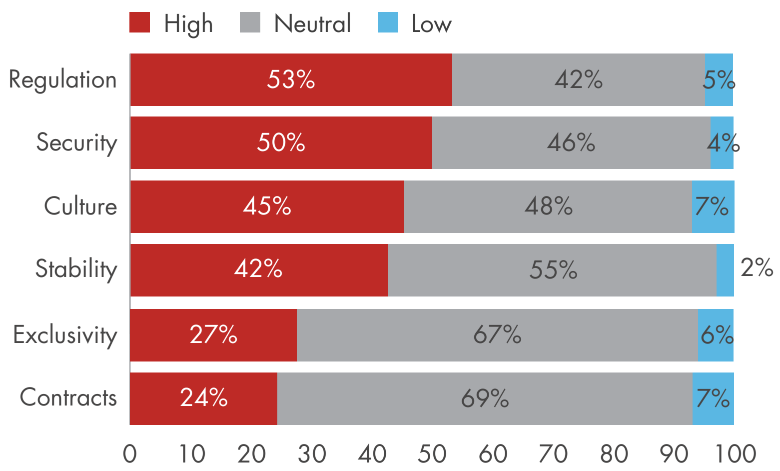
Challenges of working with start-ups

Of course it is not easy for large banks to work with start-ups for a host of reasons (see Figure 18). The most significant challenges according to the banks in our survey are regulation and security, where 53% and 50% of banks respectively found the challenges to be high. Following that in importance were culture and then stability.

According to Sohini Rajota, head of the Electronic Banking Group at Axis Bank in India, one of the big challenges of working with start-ups is making them understand the banking framework and regulatory environment. Another cultural challenge is that banks have a more traditional approach towards their products and services.

Figure 18: Challenges of working with start-ups

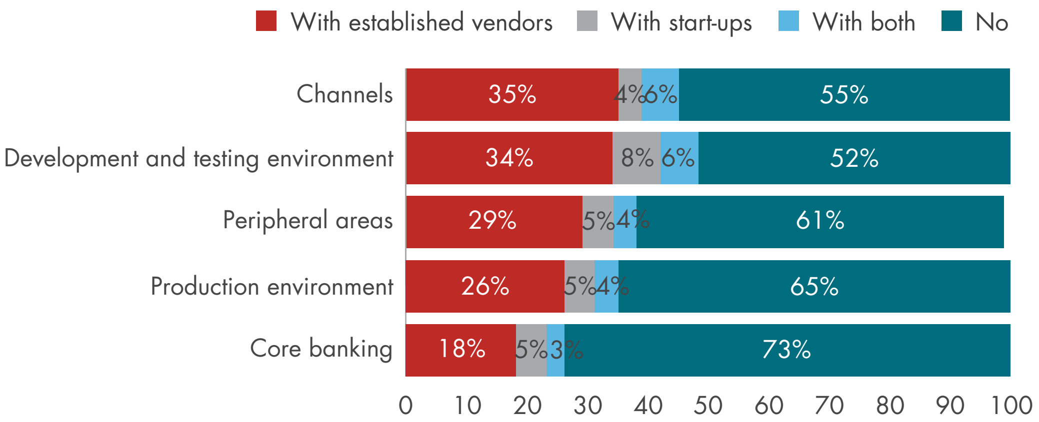
Using a scale of 1 to 7, the categories are High (6 or 7), Neutral (3, 4 or 5), Low (1 or 2)



Source: Efma-Infosys Finacle Innovation Survey 2015

An example of an area where there is little enthusiasm for working with start-ups is cloud computing services. We asked banks if they were considering partnering with established vendors for cloud computing services in several activities and it was established vendors who were overwhelmingly preferred (see Figure 19). This result illustrates the challenge for start-ups to penetrate critical operational areas for banks, as suppliers or partners.

Figure 19: Bank interest in partnering for cloud computing services



Source: Efma-Infosys Finacle Innovation Survey 2015

4 A regional view of the research findings

A regional view of the research findings

When we look at innovations across the world, it is more useful to compare countries which are at different stages of development rather than in different regions. At Efma, we typically consider three different country income groups:

- High income: GDP per capita > Int$30,000 e.g. United States, Australia
- Middle income: GDP per capita Int$15,000-30,000 e.g. Hungary, Malaysia
- Low income: GDP per capita < Int$15,000 e.g. China, Nigeria

This year we have found that there is relatively little difference between banks in the country income groups in terms of the likelihood of having an innovation strategy (see Figure 20). A notable change from last year is that the banks in the high income group, the most developed countries, now perceive their innovation performance to be better than banks in the other income groups. Banks in developed countries may have been slow to recover from the financial crisis but this suggests they are now starting to benefit from the increased focus on innovation we have observed in the last couple of years. The other evidence for this change is that 51% of banks in developed countries are now aiming to be innovation leaders, whereas in 2014 it was only 22% of banks.

Figure 20: Country income group survey response differences

	All	High income	Middle income	Low income
Percentage of banks with an innovation strategy	73%	73%	73%	74%
Self-rating of overall innovation performance*	4.75	4.83	4.73	4.61
Percentage of banks aiming to be an innovation leader	47%	51%	49%	35%
Threat of industry disruption*	4.52	4.71	4.49	4.14
Attitude to working with start-ups as partners*	5.06	5.20	5.22	4.54
Percentage of banks investing through a corporate venture fund	10%	15%	6%	7%
Percentage of banks with an internal incubator	18%	26%	13%	11%

* Scale of 1 to 7, where 1 is very low or very negative and 7 is very high or very positive

Source: Efma-Infosys Finacle Innovation Survey 2015

However, there is an interesting difference between the country income groups when looking at the perceived threat of industry disruption, the attitude to working with start-ups, and the involvement with accelerators/incubators and corporate venturing. Banks in the high income country group appear to be more concerned about the threat of industry disruption but have a much more positive outlook to working with start-ups than banks in the low income country group. Banks in the high income country group are also much more likely to have a corporate venture fund or to have an internal incubator which works with start-ups.

We can also see from the survey results that there are quite big differences between the large, global banking groups and their smaller domestic competitors. We found that the large banking groups (for example BBVA, Citigroup, UniCredit, BNP Paribas and others), relative to the average in high income countries:

- Are more concerned about the threat of industry disruption from tech companies or start-ups
- Are more concerned about the impact of industry disruption from P2P business models
- Are more likely to be aiming to be innovation leaders
- Are more likely to have a corporate venture fund or invest in start-ups ad-hoc
- Are more positive about working with start-ups as suppliers or partners
- Are more likely to have an incubator or a partnership with an external accelerator/incubator

Country differences are hard to analyse because of the relatively small sample sizes. The results from a few of the local (not global) banks in the US, Italy and India are shown in the table below. This highlights the fact that typically the smaller, local banks are not aiming to be innovation leaders. They are also less likely than average to be positive about working with start-ups as partners, and are unlikely to have a corporate venture fund or an incubator. The banks in the US seem to be more concerned about the threat of industry disruption than banks in either Italy or India.

Figure 21: Selected country survey response differences

Responses from local (not global) banks in each country

	All	US	Italy	India
Percentage of banks becoming more innovative	68%	50%	0%	100%
Self-rating of overall innovation performance*	4.75	4.25	4.67	5.33
Percentage of banks aiming to be an innovation leader	47%	25%	0%	0%
Threat of industry disruption*	4.52	5.42	4.33	5.00
Attitude to working with start-ups as partners*	5.06	3.75	2.67	4.33
Percentage of banks investing through a corporate venture fund	10%	0%	0%	0%
Percentage of banks with an internal incubator	18%	0%	0%	0%

* Scale of 1 to 7, where 1 is very low or very negative and 7 is very high or very positive

Source: Efma-Infosys Finacle Innovation Survey 2015

FinTech Innovation Hubs

One of the factors which may impact a bank's involvement with start-ups is that there are certain locations which are becoming innovation hubs for financial technology. These locations include:

- Europe: London, Berlin, Stockholm, Dublin
- Middle East & Africa: Tel Aviv, Nairobi
- Asia Pacific: Singapore, Hong Kong, Sydney
- Americas: Silicon Valley, New York

This is not to say there is no innovation taking place elsewhere, but banks located in these hubs, or with outposts in these hubs, may be at an advantage when it comes to accessing innovation and working with start-ups.

The hubs can form naturally from a combination of various factors, but support from government can also have a big impact. For example, The Monetary Authority of Singapore announced in July 2015 that it is setting up a FinTech and innovation group, and S$225m has been committed for the next 5 years to build a vibrant ecosystem for FinTech in Singapore.

Collaboration between various stakeholders is also important. London is one of the best examples of where a concerted effort is being made to build a hub and a group called Innovate Finance has been established as a membership-based industry organisation that aims to advance the UKs position as a leader in FinTech innovation. Innovate Finance seeks to address some of the key issues affecting the growth of the sector, from attracting greater inward investment to helping shape the development of proportionate and effective regulation. According to Innovate Finance, success will require a dedication to attracting smart capital and investment, continuing to build strong linkages across the diverse financial services ecosystem and increasing the quality and quantity of support institutions, investors, accelerators, incubators, corporates and others.

Innovation case studies

Commerzbank

Corporate Venture Capital

Commerzbank is the second largest privately owned retail bank in Germany and is also a major shareholder in mBank a very innovative bank in Poland. Commerzbank has established both a FinTech Venture Capital business and an incubator to ensure that it is at the forefront of innovation in banking:

- CommerzVentures is the Commerzbank FinTech investment vehicle. It was established in October 2014. The fund invests upwards of €2m, initially in growth investments (B and C rounds) rather than pure start-ups (seed and A rounds), using standard venture capital terms. The geographic remit is open although the focus will tend to be on Europe, the United States and Israel.

- The Commerzbank incubator, known as Main Incubator, was set up in March 2014 and tends to focus on seed-stage opportunities.

Stefan Tirtey, Managing Director, described to Efma how a clear focus on financial return is a pre-requisite to be successful as a strategic investor: it creates a clear alignment of interest with other investors and management. The objective of CommerzVentures is, therefore, to invest with a clear focus on financial returns. At the same time CommerzVentures aims to facilitate discussions between the bank and start-ups, for mutual benefit. However, CommerzVentures does work with the rest of the bank to create value and the transmission of information has benefits in both directions. Business units are alerted to interesting companies in their space and even if ultimately CommerzVentures decided not to invest, the bank may go on to have a relationship with the start-up. The flow of information can be achieved either by a business unit seconding someone to work with the fund, or the managers of the fund will simply work on an ad-hoc basis with each business unit, finding relevant people to talk to as opportunities come up.

Examples of FinTech investments made by CommerzVentures are:

- eToro – Based in the UK, eToro is the world's largest social investment network, enabling 4.5 million users in more than 170 countries worldwide to manage their funds through an innovative online investment platform and active trading community. CommerzVentures participated in a Series D funding of US$39m in April 2015.

- iwoca – Based in the UK, the company provides unsecured short term credit to small businesses across Europe, using a revolutionary risk model that understands any small business based on its trading data. CommerzVentures participated in a Series B funding of US$20m in July 2015.

According to Tirtey, FinTech start-ups target the most profitable business segments in banking. Banks, losing market share, could be left with a high cost infrastructure to service, while losing some of the margin pools to support it. However, banks can also benefit from some of the trends in FinTech by partnering with start-ups. Examples of some of the areas that Tirtey expects start-ups to have the most impact are:

- unbundling the functions performed by banks, exposing them in a platform-as-a-service (PaaS) approach, by way of a developer centric API
- alternative lending for consumer and small businesses
- advisory services for the mass affluent market
- compliance and AML services for banks

Nevertheless, Tirtey believes there will be challenges for start-ups when they

continued...

try to partner with banks. It is often very hard for a start-up to understand how big banks work: they do not "speak the same language" making communication more difficult than it should be. Perhaps more importantly, start-ups are often talking to the wrong people in the bank they are dealing with, which can cost them time and money. Finding the right person in a bank to make a decision about a partnership or investment is therefore crucial, and a fast "no" is much better than a slow "no". Additionally, by definition, a large corporate typically cannot operate at the same speed as start-ups do. So working with a bank, while often times necessary, also can imply high opportunity costs in an environment where cash is scarce.

Sberbank

Internal Venture Incubation

Sberbank is the largest bank in Russia with over 17,000 branches and more than 110m clients. A former savings bank, the company has been through a dramatic modernisation programme and part of that has been an effort to become more innovative. The bank's Chairman & CEO, Herman Gref, set out to change the culture of the bank, and he has been the driving force behind the creation of both a FinTech venture fund and a digital ventures team:

- SBT Venture Capital is a US$100m venture fund investing in FinTech which launched in November 2013. The current focus is on early-stage growth companies that are generating revenue, in need of financial/intellectual capital and access to the right network in order to rapidly scale.
- Sberbank Digital Ventures was set up to support the development of digital initiatives within the bank, either by incubating projects or acquiring teams and small companies on which to build new services. Sberbank Digital Ventures works out of an incubator style space in Moscow known as "Digital October".

We spoke to Igor Khmel, a Managing Director at Sberbank Digital Ventures, about the rationale and approach for the initiative. The unit is functionally part of the IT department although relatively independent. It is set up as a profit centre, not a cost centre, and is aiming to make positive returns in 3 to 5 years. Khmel explained that their operating model was based on the successful Capital One Labs and other innovation spaces of Silicon Valley and Stanford, where Khmel spent some time earlier in his career.

Examples of companies which Sberbank Digital Ventures has invested in and which will be built up as platforms by Sberbank are:

- In January 2015, Sberbank acquired 50% of mobile checkout company Platius, which enables customers to make payments at cafes, restaurants, and stores via a mobile phone. Platius provides shops and restaurants with unique customer technology, client base segmentation, and precise targeting of product and service offerings in the right time and place. The system currently has more than 2.2 million users in Russia. Sberbank's goal for the Platius project is the creation of a nationwide mobile payment system that will become the standard for the majority of retail businesses.
- In March 2015, Sberbank acquired a controlling stake in RuTarget which is an "adtech" company providing digital marketing services. RuTarget's "Segmento" product uses artificial intelligence and real time big data processing in order to perform highly accurate targeted advertising based on information about the target person's behaviour. According to Sberbank, the key aspect of the deal was the unique technology that was acquired.

Khmel sees that some of the challenges when implementing this strategy of working with start-ups are:

- Acquisition process – this can take too long (up to a year) for a relatively small company, so the challenge is for large banks to move more quickly.
- Technical integration – banks are used to working with big vendors on long sales cycles, and start-ups cannot always provide the full level of support required.
- Cultural integration – the people working in internal venture teams and start-ups would not typically want to work for large and bureaucratic banks, even at higher salaries, and therefore it is necessary to provide some independence.

Barclays

Accelerator and Open Innovation

Barclays is an international financial services provider engaged in personal, corporate and investment banking, credit cards and wealth management with an extensive presence in Europe, the Americas, Africa and Asia. Barclays operates in over 50 countries and employs over 130,000 people.

In 2013, the company launched an accelerator in London in partnership with Techstars. The success of the accelerator programme has led to the creation in 2015 of "Rise". Rise is a physical space and virtual global community designed to pioneer the future of financial technology. By the end of 2016, Barclays plans to have opened Rise hubs in North America, Europe, Africa and Asia. In each location, Rise will provide a physical site for innovative companies, offering a co-working environment, world-class event spaces, and meeting rooms. Rise will also house the Barclays accelerator programme which will continue to be in partnership with Techstars. In addition, Rise will be a global digital network aimed at promoting online collaboration and participation in innovation challenges.

We spoke to Arian Lewis, Director of Open Innovation at Barclays, about the development of open innovation at Barclays and the importance of working with start-ups. According to Lewis, Barclays has come to the realisation that the world has changed and that technology start-ups have a huge role to play in financial services innovation. The accelerator programme is therefore no longer just a limited project but a core part of the overall Barclays innovation strategy.

Each company that enters the accelerator has a Barclays business unit as a sponsor. In addition more than 400 mentors from across the bank have worked with the companies in the accelerator. Barclays does not invest in the companies but makes commercial arrangements with the ones it chooses to.

From the second cohort in London, 7 of the 10 companies have gone on to work with the bank. Lewis believes that partnering in this way with start-ups provides a much lower risk way of testing new ideas and technologies than trying to run internal projects. By getting products and services into the hands of customers faster, there is more real data on which to make key business decisions.

A good example of a success story from the accelerator is dopay, whose mission is to become the 'day-to-day' bank in markets with largely unbanked and financially underserved populations. dopay helps to break the cash cycle through a payroll and cash management service for companies, combined with a full mobile banking experience for consumers. The company is working with Barclays in Egypt and recently raised US$2m of venture capital investment which will further the launch of the company's services in Egypt and help drive expansion into new markets.

The Rise initiative goes further than the accelerators by co-ordinating innovation projects being set up across Barclays. The Rise core team will provide business units with an open innovation "menu" of options e.g. participation in a hackathon, or brainstorming sessions with start-ups.

Working with start-ups is not without challenges. Decision-making in large companies can be complex and slow, and the measures of success that banks focus on are not necessarily the most appropriate for a start-up. This is particularly the case where an initiative involves creating a new market, rather than just providing cost savings. However, Lewis believes that banks have no choice but to work more closely with start-ups because the enablers of growth have changed making it easier for start-ups to disrupt the industry more quickly. There is also a growing threat from large tech companies looking for new avenues of growth.

Axis Bank

Partnerships with Start-Ups

Axis Bank is the third largest private sector bank in India and offers the entire spectrum of services to all customer segments. The bank has 2,589 domestic branches (including extension counters) and 12,355 ATMs across the country.

In May 2015, Axis Bank launched 'Ping Pay', a unique multi-social payment solution to enable customers, especially the youth and smart phone users, to transfer money and mobile recharge, person-to-person, including to non-Axis Bank account holders, using social and messaging channels like WhatsApp, Facebook, Twitter, email and phone contact lists. The person-to-person fund transfers through Ping Pay happen via NPCI's Immediate Payment Service (IMPS) and currently the transaction limit is at INR 50,000 per day (approximately US$750).

The launch of Ping Pay is seen as a strategic step by Axis Bank in bringing superior customer convenience, embedded in a seamless and secure process, to funds transfer which is one of the most important online financial transactions. This will help fast-pace India's progress towards becoming a cashless economy. India is largely a prepaid mobile market so the Ping Pay app also enables sending person-to-person mobile recharges, tapping into a huge opportunity.

Ping Pay has been developed in association with Fastacash, a Singapore based start-up. According to Sohini Rajota, head of the Electronic Banking Group at Axis, the bank is always on the lookout for new and innovative solutions to enhance customer experience, and working with start-ups like Fastacash can support this objective. Fastacash is a venture capital backed company which has received around US$20m of funding since it was founded in 2012. The company provides a global platform which allows users to transfer value (money, airtime, other tokens of value, etc.) along with digital content (photos, videos, audio, messages) through social networks and messaging platforms, enabling secure and cost-effective transactions domestically and internationally.

Sohini Rajota believes that merging the spirit of start-ups with the deep customer understanding that banks have is a winning combination for coming up with innovative solutions very quickly for the customer. Both parties have unique strengths and the key is to harness them together. Start-ups may have a product centric approach and what's required is a holistic customer centric approach along with speed of delivery and best in class user experience.

The technologies which are likely to be the most disruptive for banks are mobile-based technologies in Rajota's opinion. In the upcoming decade, mobile Internet technology will generate tremendous economic gains through its impact on productivity, delivery of services, and from the addition of new users to the online world. With the technology becoming increasingly affordable, a significant proportion of economic growth will be attributable to it. Hence it is imperative for banks to adopt these technologies to stay ahead of the curve and be more relevant to their customers. Start-ups will have a big impact on the mobile eco-system and especially apps as they help reach out to a large set of users with focus on e-commerce and payments.

Number26

Mobile Banking Start-Up

Number26 is an innovative new company based in Germany which operates a mobile-focused current account and debit card combined with a sophisticated set of personal financial management apps. The company was founded at the beginning of 2013 and then launched in January 2015.

A key feature of the service is that the sign up process for new customers takes less than 10 minutes and identity is verified by a video conference which allows the customer to show a copy of their identification documents. The banking partner behind Number26 is Wirecard Bank in Germany, which protects customer funds. There are no account fees and also no fees on foreign transactions. Some of the other features of the service are:

- Real time banking – every time there is a movement on the account (transfers, card payment, etc.), the user receives a push notification
- Financial management – there is automatic clustering and analysis of spending
- The customer can send money to friends by email or text message
- The customer can cancel or reactivate the card in real time using the mobile app

The founder of Number26, Valentin Stalf, explained to Efma how he started with a desire to rethink the banking experience from the ground up. After working in investment banking and strategy consulting, Stalf spent some time at Rocket Internet. Here he became involved in a couple of payments start-ups being backed by Rocket Internet, and developed his ideas for a new type of bank. In particular he felt that banks needed to understand much better how customer service really works. Making the sign up process very easy and giving more control to customers with features like the ability to block the card via the app, are examples of an improved customer experience. In theory, banks can also provide this kind of service but in practice they do not move very fast and Number26 intends to continue to innovate to stay ahead.

The approach that Number26 takes to innovation is quite simple but effective. They have brought together a young and diverse team – from 17 nationalities – and have an open culture and open communication. Stalf thinks that we are at a tipping point for disruption in retail financial services and that banks are underestimating the speed of change. Services like Number26 are particularly attractive to younger customers, but he is sure that older people will also change eventually. Other market segments which will be disrupted by start-ups are personal loans and mortgages, money transfers and investment products.

Post-launch, in April 2015, Number26 raised a US$10m Series A round of financing and by August 2015 had gained 30,000 customers without spending any money on marketing. The team has reached a size of 55 people and around 50 more will be added in the next 12 months. Stalf's plan is to develop on a pan-European basis rather than globally. Of course, Number26 relies on the banking license of Wirecard Bank, but it does not have plans to partner with other banks, for example to white label the software. Stalf believes it would be difficult for an established bank to integrate a service like Number26 into an existing product portfolio due to their old technology stack.

Stratos

Card Payments Start-Up

Stratos is a United States based payments company, which was the first to begin shipping a Bluetooth Connected card in April 2015. The Stratos Card consolidates a user's debit, credit, gift, loyalty and membership cards into one smart, secure card. The company is funded by venture capital investors and has received around US$8m of investment. Companies with similar products to the one developed by Stratos are Coin (launched in April 2015) and PlastC (pending launch).

The Stratos card comes with a mag-stripe reader that snaps into a smartphone. Customers load the Stratos mobile app and swipe cards using the reader to add them to the app. The card's key information is not transmitted to the Stratos servers and the only data the company gets is the contact information associated with the card, which they use to fulfil a legal requirement to verify the owner. Card information is encrypted from reader to the mobile app to Stratos Card. Through a novel lock screen interaction, any of the cards can be quickly selected and loaded onto the Stratos card when needed and without having to load the app. The Stratos Card can then be swiped like a normal credit card. A "chip and pin" version is being developed.

We spoke to Thiago Olson, the co-founder and CEO of Stratos, about the company's development. Olson had been working at National Labs on plasma physics and then at the Department of Defense when he began thinking about a new solution for payments. His approach was therefore to look at the problem of having multiple cards from a hardware point of view and his initial ideas for an "iPod" like device evolved into the Stratos card today.

The key challenges in the development process have been making the product reliable, secure, easy to use, and achieving scale manufacturing. Creating prototypes was relatively easy. The engineering background of Olson and his team has therefore been critical – not skills you would necessarily find in most banks. Developments underway are for EMV chip compatibility and NFC contactless functionality.

Olson believes that the most important factors for innovation are to understand customer pain points, and think about the different approaches that can be adopted to address these – do not just take the same path to solve the problem that everyone else is taking. With an engineering background, Olson also likes to use "roadmapping" to align research and investment with goals and strategy, constantly evaluating and testing different technologies.

Areas where Olson believes that start-ups will have a big impact on retail financial services are in wearables and connected devices and in particular their application to payments. For example, communicating with customers in-store is a big opportunity, using beacon technologies. In these areas of mobile technology and connected devices it is start-ups that are currently leading in terms of innovation. While the card networks (Visa, MasterCard etc.) have shown some progress with innovation, banks are tending to lag behind in the payments space and are often more focused on regulation. In Olson's view this is likely to change as there are signs that banks which are investing more in innovation are starting to grow faster than their peers.

Conclusions

This year's innovation study shows a continuation of the trends we have seen in recent years – increasing focus on innovation, increasing investment in innovation, and some signs of improving innovation performance. The combination of disruptive technologies and disruptive business models, together with increasing venture capital investment in FinTech start-ups, is raising the perceived level of threat to established retail banks. The competitive impact of all this is limited so far to certain product areas and geographies, but the sense is that we are at the beginning of a period of significant change.

However, it is clear from our research and interviews that there is also plenty of potential for banks to work with innovative start-ups in order to boost their innovation efforts. There are numerous ways of doing this and it is not yet possible to say which will work best. Banks will need to assess their own situation carefully and decide what approach to take. This could include investing in start-ups on an ad-hoc basis or through a corporate venture fund, setting up an accelerator/incubator internally or in partnership with a specialist, or simply partnering with innovative start-ups to launch new products and services. We have shown examples of all these in the study.

We are seeing the same innovation trends in all regions of the world, and across both developed and developing countries. Banks in developed countries have started to make a bigger innovation effort in general, and this appears to be having an impact. It is the same banks who are most concerned about the threat of industry disruption. FinTech innovation hubs have formed in certain cities and banks which have significant operations close by may be in a better position to take advantage of working with innovative start-ups. We have seen some major banks expanding the accelerator/incubator activities on a global basis to tap into what is happening around the world.

Our previous innovation studies have highlighted the growth of "open innovation" and this study confirms the importance of working with an innovation ecosystem rather than with just an internal focus. Some key lessons for banks are:

- Having a sound innovation strategy is still the basic starting point for any bank because there are numerous options available for investment and partnerships which need to be prioritised.

- It is essential that banks work with start-ups either as partners or suppliers, because start-ups are responsible for most of the radical innovation in financial services. Banks need to find ways of addressing the regulatory and cultural issues when working with start-ups.

- At the very least, all banks should be monitoring the progression of innovative start-ups in financial services, and should be aware of how other banks are taking advantage of these trends globally.

- Banks need to focus particularly on understanding and reacting to developments in the most disruptive technologies (e.g. mobility, advanced analytics and open APIs) and where start-ups are likely to have the most impact (e.g. payments, personal financial management and digital marketing).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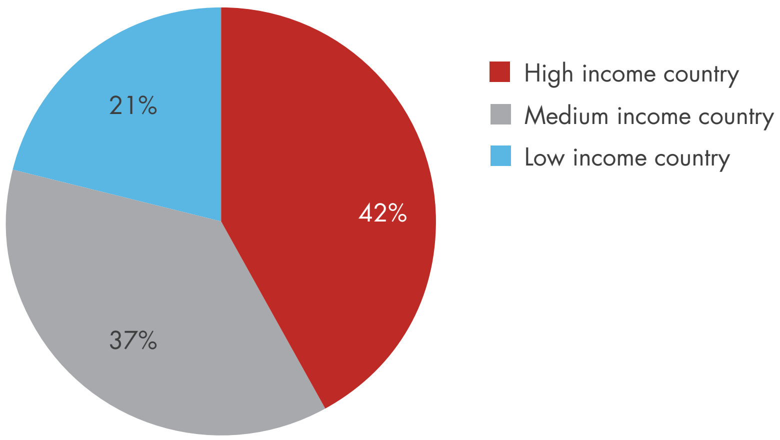
About the research

There were 140 respondents to our online survey in 2015, representing more than 70 countries around the world. Overall, 42% of respondents were from high income countries, 37% were from middle income countries and 21% were from low income countries. We define country income levels as follows:

- High income : GDP per capita > Int$30,000 e.g. United States
- Middle income: GDP per capita Int$15,000-30,000 e.g. Hungary
- Low income: GDP per capita < Int$15,000 e.g. China

Figure 22: Survey respondents by country income level



Source: Efma-Infosys Innovation Survey 2015

Online survey questions

1 Does your bank have a clearly defined innovation strategy?

2 Do you expect your bank to increase or decrease the level of investment in innovation in 2015 compared to 2014?

3 Do you think your bank has become more or less innovative in the last 12 months?

4 How do you rate your bank's innovation level in each of these areas and overall?

5 How do you rate your bank's innovation level in each of these channels?

6 Is your bank aiming to be an innovation leader or fast follower, or is it content to be a follower?

7 How significant is the threat of disruptive innovation from different actual or potential competitors?

8 What impact do you think "peer-to-peer" business models will have on the banking business?

9 What is your bank's attitude to working with innovative start-ups?

10 In which product and service areas do you expect innovative start-ups to have the most impact?

11 What experience does your bank have of working with innovative start-ups in the following areas?

12 How significant in your opinion are the challenges of working with innovative start-ups?

13 Do you expect your bank to increase involvement with innovative start-ups in the next 3 years?

14 Does your bank make investments, or plan to make investments, in innovative start-ups related to retail banking?

15 Does your bank have an internal incubator/accelerator for working with innovative start-ups, or a partnership with an external incubator/accelerator?

16 What impact do you think working with innovative start-ups is having, or could have, on your bank's innovation efforts?

17 Within the payments space, in which areas do you expect innovative start-ups to have the most impact?

18 In which activities and technologies do you expect innovative start-ups to have the most impact?

19 How disruptive are the following technologies for retail banking?

20 Is your bank looking to partner with external vendors to move a portion of your services to the cloud?

21 Within the analytics space, in which areas do you expect innovative start-ups to have the most impact?

Notes

About us

As a global not-for-profit organisation, Efma brings together more than 3,300 retail financial services companies from over 130 countries. With a membership base consisting of almost a third of all large retail banks worldwide, Efma has proven to be a valuable resource for the global industry, offering members exclusive access to a multitude of resources, databases, studies, articles, news feeds and publications. Efma also provides numerous networking opportunities through working groups, webinars and international meetings. True to its vocation, Efma has recently developed an Innovation portal which aims to identify and award the most innovative projects in the retail financial services arena.

For more information: www.efma.com

Finacle is the industry-leading universal banking solution from EdgeVerve Systems, a wholly owned subsidiary of Infosys. The solution helps financial institutions develop deeper connections with stakeholders, power continuous innovation, and accelerate growth in the digital world. Today, Finacle is the choice of banks across 84 countries, and serves over 547 million customers – nearly 16.5 percent of the world's adult banked population.

Finacle solutions address core banking, e-banking, mobile banking, customer relationship management (CRM), payments, treasury, origination, liquidity management, Islamic banking, wealth management, and analytics needs of financial institutions worldwide. Assessment of the top 1000 world banks reveals that banks powered by Finacle enjoy 50% higher returns on assets, 30% higher returns on capital, and 8.1% points lesser costs to income than others.

For more information: www.finacle.com

About the author

Michael Pearson is a strategy and corporate development expert with 25 years' experience working for and advising financial institutions worldwide, developing new ventures, and investing in start-ups. Michael founded Clarus Investments in 2006 to advise financial institutions on strategy and to invest in early stage ventures. Michael is also the author of the Efma Yearbook, which is an analysis of trends in the global retail banking industry, and monitors the emergence of new players in retail financial services on behalf of Efma. Michael has an MBA from Harvard Business School.

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