
MICROSOFT PERSPECTIVES
EMPOWERING
THE DIGITAL BANK
DIGITAL EXPERIENCES
Reimagine the client experience for a digital world
DIGITAL WORKPLACE
Empower a high-quality, committed workforce
DIGITAL BUSINESS
Transform with open and connected systems
Microsoft

CONTENTS

FOREWORD

A vision for the digital bank

At Microsoft we are focused on empowering you as individuals and organizations across every vertical, across every size of business, in any part of the world to achieve more. We are in the empowerment business. We are in the business of enabling you to drive your business transformation through the power of digital technology. To that end we have three interconnected and bold ambitions.

First is creating a new era of more personal computing where you interact more easily, more naturally and more securely with all the devices surrounding you, to give you experiences that are about the mobility of your experience, not the mobility of the device. Second is reinventing productivity and business processes to empower people and organizations of all sizes with tools that you can rely on every day to be more productive, mobile, collaborative, and intelligent without sacrificing trust or security. Third is building the intelligent cloud, infused with automation and insights as a design point so it can take care of common tasks by acting on intelligence and pre-set parameters, and deliver useful business insights for better data-driven decisions.

Within the banking industry we believe we can empower you to become a digital bank. A new era of personal computing will help you deliver digital experiences to your customers, productivity and business processes will enable you to create a digital workplace, and an intelligent cloud will help you transform your business.

We have created this publication – *Microsoft Perspectives on The Digital Bank* – to share our thoughts and views on the challenges facing banks today, and the digital technologies that Microsoft is employing to help its customers address these challenges and move towards our vision for the Digital Bank.

I hope you enjoy the read.

Karen Cone
General Manager, Worldwide Financial Services
Microsoft

Going digital

If banks want to remain relevant in the digital age, it is time for them to change the way they serve their customers, as we find out in conversation with Microsoft's Marcelo Marquez

Today, people have more financial options available to them than ever before, leading to less reliance on and engagement with traditional banks. At the same time, globalization and regulatory complexity is driving a continued need for simplification and automation. How can banks transform and perform in this new environment, satisfying clients and shareholders alike?

According to Marcelo Marquez, Business Development Director, Worldwide Banking at Microsoft: "Adopting a digital-first culture is the key to sustaining growth, while simplifying processes and reducing costs. In their busy everyday lives, customers are always connected. They have options and they won't necessarily find your service – or choose it – if you aren't making the effort to reach out to them," he says. "Instead of waiting for the customer to come to them, banks now need to be much more proactive about anticipating their needs."

Rather than seeing this change in dynamic as a threat to their existing model, Marquez believes that it poses a great opportunity for banks. Now, they have a chance to reconnect with their customers and regain their position as financial stewards that are relevant in their customers' lives – a status that has been gradually eroded away in more recent times by the likes of startups, mobile payment service providers, supermarkets and payday lenders.

So how exactly can they do this? "Banks now have all the tools at their disposal to know exactly who their customers are and find out more about their needs and preferences; it's a big disruptive development in our industry," says Marquez. "Banks have been used to spending a lot of time focusing on the process – finding ways to cut costs, streamline their operations and be more efficient. Technology allowed them to grow by scaling. And while that's all important, they can now use technology to explore new business models and drive customer engagement."

To help banks manage this transition, Microsoft is working with them around three core competences: digital experience, digital workplace and digital business.

"The first area focuses on the customer experience itself," Marquez explains. "Going digital doesn't mean you can get away with being less personal. In fact, it's quite the opposite. Today, banks must look to deliver more value to customers through useful insights and relevant offers by engaging them in natural, highly personal and innovative ways throughout the customer journey. Because not all customers are the same and have the same needs, banks are beginning to realise that a single service model won't work anymore. Instead, they need to reimagine what the experience is for the digital world. They need to find out who their customers are and how they can best serve them. With the use of modern technology and data analytics tools, they need to evolve into digital advisors."

Marquez cites developments such as machine learning as having huge potential to transform the way that banks have conversations with customers. "If banks find a way of taking all the information they hold about each customer and piecing it together, they can use it to pre-empt customer needs and drive the conversation," he says.

Banks must also look to give their workers better tools to interact with customers in the most effective way. "This ultimately comes down to the ability for workers to collaborate as a team from anywhere and on any device, and have seamless access to data, says Marquez. "By having the information they need at their fingertips, advisors can have much more meaningful conversations with customers."

Marquez adds that advisors don't even need to be in the same room as the customer any more to have those interactions. "Customers can book appointments and through the likes of Skype have a face-to-face conversation with an expert based miles away in another branch."

To enable all of this, banks must also look to digitise their operations and build open, connected infrastructures that give them the agility to roll out new services quickly, and securely link with other parties via application programming interfaces (API) to extend their value proposition. "When we look at what our data centres used to be ten years ago, it's a complete transformation," says Marquez. "Today, they're able to create secure but open infrastructures that enable them to better connect with clients and customers. Through the API economy, banks can now look to combine their existing data with third parties and create new service levels."

> "Customers can book appointments and through the likes of Skype have a face-to-face conversation with an expert based miles away in another branch"

Leveraging the cloud

We speak to Sean Foley, CTO of Worldwide Financial Services at Microsoft, to dispel many of the myths surrounding the cloud and to find out about the technology's potential to transform the way that banks operate

Perhaps the most challenging sector in which to do business in today, the retail financial services industry has evolved phenomenally over the last few years, creating a number of hurdles that only the strongest banks will be able to clear.

"Today's operating environment is a world apart from the pre-crisis years," explains Sean Foley, CTO of Worldwide Financial Services at Microsoft. "Margins are tight and regulations are strict. At the same time, the pressure from customers is huge. They are demanding new, innovative products and services and are not afraid to switch banks if they need to."

Foley believes that the only way that banks will become better equipped to meet all of these challenges is by becoming more agile. And this means a move away from the legacy infrastructures which many are still contending with. "A bank CEO recently said that most banks' technology systems are like Noah's ark; they have two of everything," Foley explains. "This is so true. Trying to get anything done when you have two CRM systems, five email systems, a number of ERP systems etc. is inordinately complex. Luckily, cloud technologies are presenting banks with an opportunity to rethink their technology profiles and move much more quickly in a bid to meet customer needs."

Indeed, with the promise of huge flexibility and significant economic advantages, it's easy to see why cloud computing is so talked about. A recent Celent report, 'Cloud-based financial services: a banker's guide', puts these potential benefits into context. It outlines that, for "US$5,000 – the cost of a mid-range web server – a cloud services user could rent the same server for 18 months or 12,000 servers for a single hour."

In addition to the economic benefits, the operational advantages are also attractive to banks. The traditional methods of deploying a new physical server can take months, whereas a new virtual server can be installed in a matter of minutes. The Celent report highlights that most traditional in-house data centres run at an average utilisation rate of 30% or less, as systems need to be sized to accommodate daily and seasonal spikes in demand. By resource pooling, however, cloud providers can offer banks unlimited, on-demand capability, which results in economics that few bank-run IT services groups could match. The cloud services model also presents clear advantages in terms of control and governance and new opportunities in terms of data management.

But despite these clear advantages, many banks are giving cloud technology a wide berth. "A number of misconceptions surrounding the cloud remain," Foley says. "The biggest challenge is in terms of regulation and compliance. Banks are very concerned that they will not be able to put data in the public cloud in any form. There is also a myth that data needs to stay within a bank's firewall and that it cannot go outside the boundaries of a specific country. When you speak to regulators you find that this isn't the case. It's saddening that many banks are making decisions about the cloud without knowing the facts."

Foley says that cloud providers today are raising the bar in terms of security, privacy and encryption of data. "Microsoft, in particular, is absolutely committed to ensuring the highest standards of security," he explains. "Microsoft's security measures address access controls, access restrictions, encryption, data integrity measures, segregation of duties, background checks, attack prevention and monitoring, response programmes and disaster recovery measures. These significant safeguards help financial services organisations meet even the most stringent regulator's security requirements."

What's more, Microsoft cloud offerings enable financial services customers the ability to customise the cloud to their needs. Customers can choose between a pure cloud environment, an on-premise solution and a hybrid environment that integrates cloud services into an on-premise IT infrastructure.

"Customers can move some users to the cloud and keep others on-premise for compliance or operational reasons," Foley says. "This hybrid model is experiencing the biggest growth in this sector. It's unlikely that any bank will move 100% of its business to the cloud but, in five years, I believe that every bank will host a significant part of its day to day business there. We're taking great steps to ensure that our cloud technology is integrated into the latest versions of our on-premise servers such as SQL Server so that our customers can work seamlessly between the two. It's about enabling customers to get the right mix to ensure that their desired environment, security constraints, compliance concerns, and risk tolerance are met."

Overall, Foley is confident that the impact of the cloud will be far-reaching for banks. "Since 2013 the number of our financial services customers leveraging the cloud has increased more than 100-fold," he says. "I have every confidence that it will continue to grow at such a rate. It's one of those rare disruptors that has the potential to change how we do business and how technology can play a role in our lives. It's facilitating a very exciting future for the industry."

Living up to expectations

The financial services industry has never had a better opportunity to embrace a customer-centric approach to doing business. Success, however, requires banks to build a more responsive digital offering that enables them to keep pace with customer expectations

We all know that marketing campaigns set out to present a product or service in the best possible light. You won't find a fast-food promotional poster featuring a burger with wilted leaves, or an advert for a holiday location showing overcrowded beaches or stormy weather. But there's a fine line between making something look really appealing and bending the truth.

This is certainly the case in retail banking. As Richard Peers, Business Development Director, EMEA Financial Services at Microsoft, explains, banks can present their services and products in the most positive manner, but if the reality doesn't match up to the marketing promise then they have a problem.

"It's all very well advertising a particular loan on a TV advert and saying that applications are approved quickly, or telling your customers that you'll support them through all of their important life milestones, but if this isn't actually the case, customers will become disillusioned quickly and may go elsewhere to get what they want," he says. "If banks want to engender loyal, profitable customers then it's something they need to get right."

One of the main problems banks face today is delivering the personalised level of service their customers have come to expect. "Online and mobile banking has certainly made it more convenient for consumers to manage their finances and interact with the bank, but we still have some way to go to get to the point where they're recognised as an individual – complete with their entire banking history – across all channels in a seamless manner."

For example, a consumer may go onto their bank's website and look up a particular credit card deal, but it won't necessarily be tailored for them; it'll be a generic offer. "At best, I may be able to go into my bank branch or contact a call centre to find out more, but it will take some time for them to look up my history and figure out what product will best suit my needs," says Peers. "I can't even be sure that the particular deal I've seen is available across all the different channels. It can be a frustrating process."

Many banks recognise the importance of delivering an omni-channel service to their customers – whereby their customers are recognised as an individual and offered a consistent level of service regardless of the channel they interact via – but operational and technological siloes still tend to stand in the way of making this a reality. "Technology siloes and departmental siloes (such as credit and debit divisions) mean that in most cases banks still struggle to identify who we are," says Peers.

Microsoft partner Five Degrees has a solution to this problem. Among its many clients is online bank Knab in the Netherlands, which it has been working with in recent years to roll out an innovative integrated service for customers.

Since it opened its doors for business in 2012, Knab (the name, which is bank spelt backwards, reflects the company's desire to turn banking upside down) – has been committed to giving its customers control of their financial situation in a clear and simple way. To do that, it presents all of a customer's financial information in one dashboard – even if this information is held with another bank. And this doesn't just include transactional information from bank accounts; it also covers mortgages, assets, liabilities and other relevant data. The result is that customers get a much clearer view of their overall financial situation and Knab is able to position itself as a trusted advisor.

"Five Degrees' vision is to automate as many processes as possible and to allow customers to be included in these processes if they want to be," says Peter-Jan Van De Venn, the company's Chief Commercial Officer. "After all, your customers are arguably your best employees. They are motivated to handle their own processes, they are informed about their own situation and, best of all, they're not on your payroll."

"Your customers are arguably your best employees. They are motivated to handle their own processes, they are informed about their own situation and, best of all, they're not on your payroll"

Banks recognise the need to offer an omni-channel experience to customers – where service is seamless and consistent regardless of the channel of interation

To provide customers with all of the information they need at their fingertips, Van De Venn explains that banks need to have a business process engine (the flow) combined with all relevant client data (the know). "We provide this combination of know and flow to our clients, helping them to keep their customers close and involve them in business processes," he says. "This leads to a good customer experience, low costs and, because it's all automated, full control – three KPIs that are impossible to achieve all at once with most other solutions."

As part of their efforts to create joined up omni-channel strategies, many banks are venturing into areas such as mobile app development too.

"Most banks now offer a mobile banking app to allow their customers to check their balance, manage their overdraft, transfer money and so on," says Peers. "Interestingly, it's completely changing the way customers are choosing to interact with their bank. In many instances, they check their app 10-20 times a week – sometimes more. This is quite different from the days when they would have visited their bank branch or gone online just once a month on average."

Peers highlights UK-based retail bank Barclays as being very progressive in this space. "Its mobile payments app Barclays Pingit came to market before peer-to-peer payments had really taken off. More recently, the company introduced its contactless payments mechanism Bpay, which allows customers to pay for goods under £20 using a special fob, wristband or sticker on their phone. Barclays recognises the importance of developing innovative functionality like this to make life as simple as it can for its customers and keep them interested."

Yet while these apps do provide customers with a new level of convenience, in the long term it's not practical to keep creating new apps to address certain functions or manage different parts of a customer's financial portfolio.

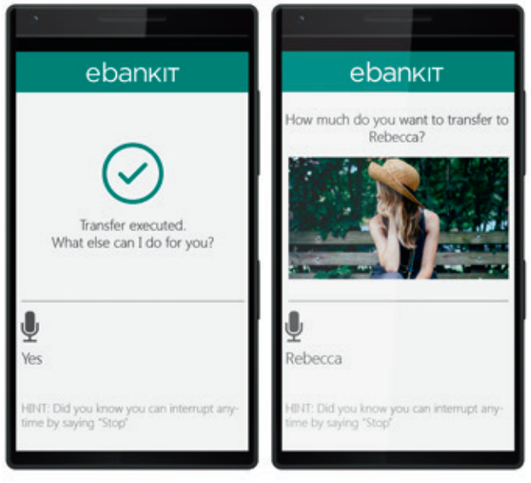
"Many of us have a whole bunch of apps that we use on a daily basis. But having an app for your online banking and a separate one for your credit card and another one to carry out mobile payments can actually make things more complicated," says Peers. "We're finding ourselves having to string more and more apps together to get the information we need. It's a rather laborious process."

Knab worked with Microsoft partner Five Degrees to provide a solution that gives customers a complete overview of their finances

According to Peers, the next stage, then, is for banks to turn to intelligent agents like the Microsoft digital personal assistant Cortana which, when combined with apps and the web, are capable of stitching together the fabric of our digital lives. So rather than us having to proactively search for the information we need ourselves, these agents find it for us instead – they interpret our world in a much more intuitive and natural manner.

"Cortana allows the customer to interact with their device and find the information they need using natural language voice commands," explains João Lima Pinto, Vice President and CCO at omni-channel banking solutions provider ebankit. "We have already adapted our mobile banking solutions to respond to voice, so that the client can chat to the application and achieve three different outcomes. The first is navigation, whereby the client gives a simple voice command, such as 'show my current account' to get to the option they are looking for. The second is getting information they need by asking a question, such as 'what's my balance?' And the third is getting the phone to automatically carry out an action by giving it a command such as 'top up my phone by £20.'"

The company is also building a similar capability for smartwatches. "This is a simplified version of the same technology so that the client can communicate using their voice to carry out key functions, including checking their balance and last transaction, carrying out pre-defined payments, top-ups and transfers, or navigating to the nearest bank branch," says Pinto.



Microsoft partner ebankit has adapted its mobile solution to use Cortana for voice commands

As this technology matures, Pinto believes that we will be able to build even more channels to suit our growing requirements. The user will then simply be able to choose the channel that best suits the situation they're in or the device they're using and, regardless of the channel they choose, they will be able to access the same information.

But we're not there yet. "A lot of banks still need to reach the point where they can deliver a good omni-channel experience first," says Peers. "To do that, they must address two key issues – their legacy infrastructure and their legacy mindset."

> "A lot of banks still need to reach the point where they can deliver a good omni-channel experience first. To do that, they must address two key issues – their legacy infrastructure and their legacy mindset"

Attitudes are changing, though. "What most are trying to do is wrap up their legacy in some kind of application program interface (API) management layer, which allows them to expose some functionality to the external world, particularly the fintech community," he continues. "This gives them the ability to accelerate innovation without having to necessarily build everything from scratch themselves. But this isn't a development that will happen overnight."

"When it comes to APIs, banks shouldn't just look to expose their services to the outside world, but also invest in connecting to other APIs to enrich their service offering," adds Van De Venn. "We see many niche services being set up in the financial services market (ID verifiers, new types of payments, personal finance management and mobile applications, for example) and they all add value to the overall customer experience. Banks should have a system that is capable of easily adding and replacing these kind of services to continuously adapt to customer requirements and future business models."

And what does the future hold if banks get it right? "Today, banks have access to a great deal more information about their customers than ever before," says Peers. "They can use this to offer a new level of value to their customers. Ultimately, the ones that will succeed are the ones who foster meaningful interactions that take into account each individual's complete financial situation and lifestyle."

Empowering the workforce

Banking professionals have access to a whole host of modern productivity tools to enable them to work more effectively. We hear from Peter Hazou about the opportunities available to banks – and their employees – if they make the transition from paper to digital

Microsoft's vision for the workplace centres around embracing digital innovation to maximise efficiencies, capabilities and processes of all emplyees

Microsoft has a vision for what the workplace should look and operate like today, and it centres around embracing digital innovation to maximise the efficiencies, capabilities and processes of all employees.

"As is the case in most industries, banking professionals are used to working in groups, across organisations and individually, and this requires a whole host of devices and collaboration tools to allow them to communicate effectively and get the information they need to accomplish their daily tasks and projects – that's the crux of what we're trying to enable," says Peter Hazou, Business Development Director, Worldwide Banking at Microsoft.

The key to this vision is giving employees the tools they need to understand what is required of them on a daily basis so that they may get on with their tasks without any barriers standing in their way. That means giving them full access to all the information they require and allowing them to communicate with their colleagues and customers, regardless of where they are.

According to Hazou, the technologies to enable this are all available today.

"Imagine someone at home at the start of their day," he says. "Before they even leave for the office or head off to their first meeting, they can go onto their home computer, tablet or smartphone, see what the agenda is for the next few hours and prepare themselves by accessing everything they need to know. Using Office Delve, Microsoft Social Engagement and machine learning capabilities in Cortana, they are able to surface relevant information about what's going on in the market as well as with their customers."

Once in the office, Hazou explains that the next step could involve working with peers to respond to market conditions and begin constructing feedback to customers. "Using tools such as Office 365, you can collaborate with your social/peer group, share information and ideas, and work together simultaneously on documents, providing feedback in real time," he says.

Combining insight with collaboration, productivity, communication and line-of-business tools, bankers also have an opportunity to transform the customer experience. Bringing together Microsoft Dynamics CRM and tools within Office 365, employees can pull up full customer profiles to engage in more meaningful interactions. Conversations can either take place in person or virtually via tools such as Skype for Business. Regardless of whether they are interacting with customers remotely or in the same room, they have access to all the relevant information they need at their fingertips.

Sounds great, doesn't it? The problem is that for many businesses these scenarios may as well be science fiction.

"Banks have a great deal of legacy software to contend with," explains Hazou. "Although many see the value of these modern technologies, the reality is that many workers are still tied heavily to the office and remain greatly reliant on paper-based processes."

Even those who do have the technologies in place don't necessarily feel comfortable using them. "The extraordinary amount of security and compliance protocols in this industry means that banks struggle to know what's safe or unsafe to use – and that can be very limiting," says Hazou. "In their effort to keep data as secure as possible, many choose not to turn on tools such as Skype for Business – they lock them down. What they don't realise, though, is that with the Microsoft platform we can log, limit and control information."

Despite the challenges standing in their way, businesses are taking steps today to modernise their processes. And for those still considering the transition, Hazou recommends breaking the journey down into three manageable phases.

"The first step is to carry out a personae analysis, which involves understanding how various roles function, what certain workers already use to carry out their jobs today and what they will need in future," says Hazou.

> "As time goes on, you will feel more comfortable modernising larger workloads, such as e-mail workflow, business intelligence, risk management, data analytics, and so on"

Then, it's a case of looking at which workloads are going to be the easiest to modernise. "Consider trying out Office 365 or Skype for Business to manage smaller workloads. Start small and build up," Hazou adds. "As time goes on, you will feel more comfortable modernising larger workloads, such as e-mail workflow, business intelligence, risk management, data analytics, and so on. Take a gradual adoption and consumption approach, rather than rushing to digitise everything all at once."

Over the coming months and years, Hazou believes that attitudes will change as more and more organisations realise the benefits of becoming truly digital workplaces. "As more employees – and customers – call for access to the types of tools they're already used to having in their personal lives, the move will become inevitable," he says. "Change is already happening, but it's mainly occurring at the edge and endpoints. The truth of the matter is that people are becoming more and more productive in their personal lives and they expect the same types of experiences when they get to work; that's a wave that can't be ignored."

The shift towards the API economy

APIs are set to change the way banks bring to market new applications, drive innovation and better serve their digital customers, as we find out in conversation with Guillermo Kopp and Peter Hazou

What would have been considered unthinkable just a matter of years ago is now turning into a distinct reality: banks sharing their core functions with outside developers so they can build their own applications on top of them.

The premise is simple. By securely making their proprietary software available to third parties, banks can bring to market new, innovative apps and give rise to more choice and services for banking customers. All of this is being made possible by application programming interfaces (APIs) – software gateways that let different applications work together and communicate with each other, such that outside developers can create new apps that take advantage of certain banking functions without going behind their firewalls or accessing personally identifiable information.

Although APIs haven't exactly taken off in the banking world just yet, Guillermo Kopp, Business Development Director, LATAM Financial Services at Microsoft, believes they will soon, providing a cost-effective and easy way to tap into new sources of revenue and keep up with customer demands in today's mobile-first, cloud-first world.

"In the next five years, APIs will add trillions of dollars to the economy," he says. "In other industries, companies have moved quickly to launch APIs and give developers access to their source code. PayPal's payment API, for example, lets third parties design and host their own checkout pages. And while we expect the shift for financial services institutions to the API economy to be a more gradual one, it's something we will certainly see more of in the near future."

For many banks, APIs serve as an easy pathway to drive innovation through partnerships rather than having to build everything from scratch themselves. They allow them to tap creative partners and financial technology companies in order to generate new ideas, broaden their reach and offer new services that fall outside of their usual remit – all while keeping absolute control over their domain.

"The opening of APIs extends banks' client value chains by tapping external pools of expertise which are not available and not practical to fund internally," explains Peter Hazou, Business Development Director, Worldwide Banking at Microsoft. "The transformation in bank operating models means it is no longer an efficient use of resources to construct all elements of their desired end-state of digital business themselves. APIs are a natural modus operandi for extending reach and relevance."

Indeed, as some leading banks are already finding out, APIs are an ideal option for keeping pace with client digital expectations that they cannot support alone.

"They permit banks to focus on and develop their core strengths rather than attempting to spread the peanut-butter too thinly in trying to be all things to all people across all technologies as current trends demand," says Hazou. "They also broaden the network effect of their services by connecting to external providers in the wider economy."

Banks are increasingly sharing their core functions with outside developers so they can build their own applications on top of them

Through bank APIs, customers could, for example, make use of apps that tell them how much their spending fluctuates over the course of a year; whether they should refinance a mortgage, given current interest rates; allow them to use the built-in camera in their phone to cash in a cheque; be sent personalised offers from all the retailers they shop with regularly when they're in the vicinity; the list goes on.

Importantly, APIs offer banks a significant opportunity to really get to know their customers and, in turn, provide the best advice on what they can do with their money.

"Rather than being relegated to utility services-like providers, banks have an opportunity to regain and elevate their position as trusted financial advisors that are able to anticipate their customers' needs and deliver relevant services to them," says Kopp.

For the first time, they can combine their existing rich data with public data and partner with specialists to create new service levels. Based on what they know about their customer's profile and banking history, they can guide customers through financial decision-making processes and be involved in all elements of their digital lifestyles, not just their transactions.

In the area of loans, for example, banks could look to partner with a car manufacturer or car sales website and, using an API, send customers targeted loan deals when they're browsing online and searching for a new car. Then, rather than the customer having to go directly to the bank to arrange the loan, the car dealer may be able to facilitate the loan from within their own app, offering a seamless experience for the consumer.

"For the banking industry, this is about acquiring customers at the point of presence through third parties," says Kopp. "Or, even better, allowing them to sell services from other industries – all embedded within the core banking function. Not only does this open up banks to new sources of revenue, but it embeds them more deeply in the

The cloud is a key enabler for banks sharing their technology and data

customer journey and information flow, allowing them to deliver relevant, timely and value-added services."

As Hazou explains, customers don't see financial services in a contained linear way anymore. "Rather, customers have a need, and a simple desire, to double click once to achieve fulfilment across a series of disparate functions to complete their transaction and move on," he says. "When booking a stay on the AirBnB website, for example, customers expect to be able to pay there and then, regardless of the bank they're with and the currency they're using. In this instance, a confirmed online booking invokes an API to guarantee payment and allows AirBnB to accept customers from all banks without the need to set up separate wallets. API interconnectivity is the simplest and fastest way to achieve this."

Essentially, APIs bring banks back into the centre frame of payment and settlement by positioning their core competency in banking, current accounts, risk, and cybersecurity management. "They make banks more relevant in a changing world by opening additional channels for business while at the same time giving the potential to unbundle certain aspects of their services where necessary, for specific requirements, to compete against new non-bank competitors in financial services," explains Hazou.

Kopp also notes that as banks provide customers with end-to-end, real-time services throughout the value chain, customers will be inclined to transact more and build up loyalty with their bank. "Conversely, banks that are remiss to extend themselves to non-banking services may lose ground to competitors," he says.

It's no secret that banks have not traditionally been sharers when it comes to technology or data, but in the coming years Kopp expects attitudes to change.

"We understand banks' concerns when it comes to sharing their proprietary software and data but, much like the revolution we're seeing happening with cloud computing, banks are beginning to trust in new technology developments to support their mission-critical operations," he says. "In fact, the cloud is a key enabler in making all of this happen. It would be unthinkable to have this level of interconnectivity and be able to carry out real-time transactions using legacy architectures. An API management architecture needs to run on the cloud – it provides storage for all transactions, seamlessly maps what goes with what, and much more. And the reality is that through APIs we can ensure a level of security equivalent to any other application it runs."

Going forward, standards will be key to ensuring that customer data is shared and used in the most secure and appropriate manner.

"To protect data privacy, customers should be allowed to opt-in and retain control of their own non-banking data and find tangible value in accessing integrated services through the bank," says Kopp. "Banks have a trusted relationship with their customers they must maintain. It is also essential that interconnected non-banking services abide by the same privacy and ownership criteria; customers need to be able to trust these new services. The digital glue is not the APIs, it's the standards."

Ultimately, though, Hazou expects the flexibility that comes with use of APIs will become too good an opportunity to turn down.

"From a business model point of view, other service industries are experiencing quantum growth by opening their interfaces through APIs," he says. "Banks can now do the same."

A data-driven business

In conversation with Rupesh Khendry, we discover how Microsoft is helping financial services professionals garner actionable insight from vast data streams

A new generation of business systems is shaping how banks approach and carry out transactions, and it's a revolution that's being driven by data.

At the 2015 Convergence event, Microsoft CEO Satya Nadella explained that the combination of unlimited computing capacity of the cloud and data platforms that can reason over data in real time is enabling Microsoft to build what he calls 'systems of intelligence'.

"These systems of intelligence don't sit in isolation," Nadella said. "They, in fact, build on the entire digital fabric that we have with the systems of record and systems of engagement, and create one feedback loop. This feedback loop helps us take all of the digital information we have and make it much more real-time in terms of how we can drive both performance and efficiency."

With information now coming in a variety of forms and from a variety of sources, it's vital companies use systems of intelligence that are built around processing vast amounts of disparate data.

"In financial services data is the business, so it is extremely mission-critical to have the right data to delight your customers, manage your risks and run your business," says Rupesh Khendry, Business Development Director, Worldwide Capital Markets at Microsoft.

Because much of this data is no longer static, businesses must be prepared to handle vast amounts of information in flight, with a point in time relevance. And with the 'electronification' of the markets, trading and payments information is crossing borders with much lower latency, meaning the importance of immediately actionable predictive insights cannot be underscored enough.

"The days of deploying a plethora of disparate toolsets operating in silos are over, especially in a highly-regulated industry such as financial services, where relevant and timely insights can be the difference between garnering market share growth and incurring huge penalties," says Khendry. "Financial

institutions need to instil a data-driven culture that creates a platform for building the strategy. They also need to leverage a seamless set of solutions that offer an end-to-end offering, from data capture to predictive analytics, which can be provisioned and consumed anywhere in a truly mobile world."

Microsoft is recognised as a leading player in the advanced analytics space. Gartner recently ranked the company as a visionary in its Magic Quadrant for Advanced Analytics Platforms report, stating that Microsoft has "unparalleled

More customers are asking their financial advisors 'what have you done for me lately?'

reach into most organisations" with its product offerings, as well as a cloud offering that brings together "best-of-breed components, deep integration with R, and R packages and solutions from an entire ecosystem of third parties."

"We have made huge investments to support our customer initiatives with a best-in-class machine learning offering that is fully managed, integrated and enables customers to collaborate effectively and deploy in minutes," Khendry explains. "Our acquisition of Revolution Analytics, the leading commercial provider of software and services for R – the world's most widely-used programming language for statistical computing and predictive analytics – is already helping customers to use the power of R and data science to unlock big data insights with advanced analytics. When combined with solutions such as Azure Stream Analytics, a hosted service that processes large volumes of streaming event data with low latency, our customers can derive insights, draw conclusions, and trigger actions in real time."

In particular, Khendry identifies three areas in which Microsoft's advanced analytics stack can play a vital role in helping financial services companies put data-driven insights at the centre of their business.

The first is fraud detection and risk management – "the ability to manage and grow business directly depends on how well you are able to predict and manage your risk," he says. The second is advisory services, with more customers asking their financial advisors 'what have you done for me lately?' And the third is customer service, where banks can look to anticipate and manage customer churn, as well as offer next product recommendations.

> "In financial services data is the business, so it is extremely mission-critical to have the right data to delight your customers, manage your risks and run your business"

"With intelligent systems and the intelligent cloud, it's really about having machines that learn and understand the business and the customers," Khendry says. "Business users can predict risk and provide the solutions or portfolio strategies that are most relevant to them. Everything we're doing fits into the strategy of empowering our financial services customers to develop a competitive edge by finding new value in predictive and proactive insights with an end-to-end advanced analytics stack."


microsoft.com/banking
Microsoft