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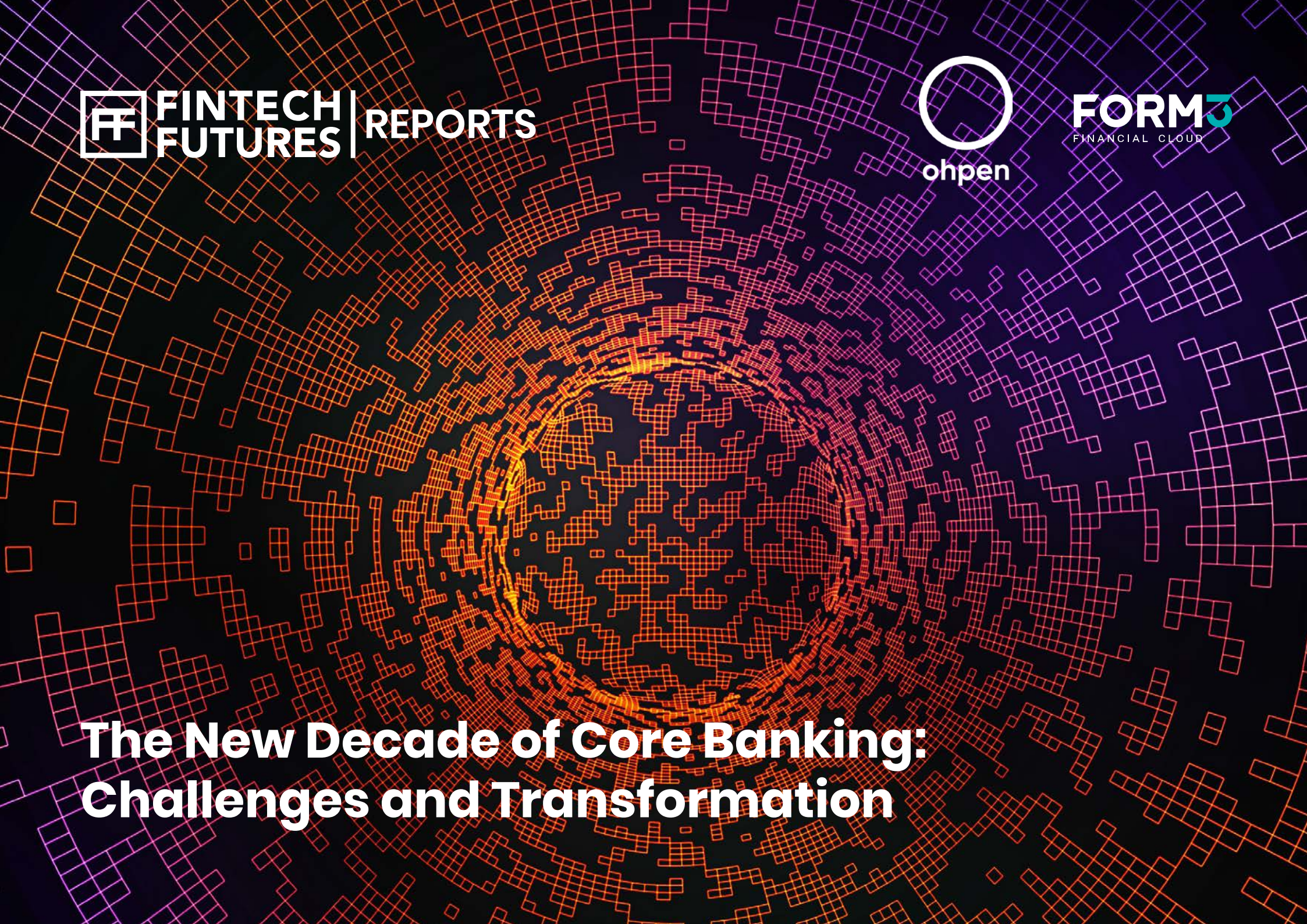

The New Decade of Core Banking: Challenges and Transformation

Introduction

In a world where headlines can be dominated by new technology like artificial intelligence, quantum computing, application programming interfaces (APIs) and more, it can be easy to overlook the long-time workhorse of the financial services sector.

The core banking system has sat quite literally at the heart of major banks the world over for decades. These platforms are so mission critical to financial institutions that they spend millions in keeping them maintained. A core banking system needs to handle a high volume of transactions all day, every day without interruption.

Legacy core banking systems have usually been value for money, in that their reliability can be assured no matter their age. Despite many of the world's largest institutions sitting atop software that can be traced back to the 1980s, outages are a relatively rare occurrence.

The issue is that when these outages do happen the consequences can be severe. A bank's services going down for extended periods of time can attract attention from regulatory bodies and government officials, lead to hefty penalties and loss of revenue, and result in a tarnished reputation in the eyes of the customer.

What is perhaps most worrying for banks is that as we enter a new decade the workhorse of the banking industry is being saddled with greater responsibilities and duties. A core banking system is expected to adapt alongside and connect to API services, digital banking portals, and all manner of value-added services.

An ever-more demanding customer base has led to an expectation that banks process their transactions in real-time, connect to the latest fintech services, release new features on a (comparatively) lightning fast schedule, and compete with emerging competitors who aren't dragging 30 years of legacy technology behind them.

> "The performance of the whole is determined by the weakest link - the least digitised link, most expensive link, least flexible link, or slowest link. The core system will, of course, have an important role in the future, but it's the flexibility that the core and its APIs offer which will be the most important

Joost Reijnen, chief technology officer, Ohpen

In this new world the old reliable core banking system is looking more and more like a weight around a bank's neck. A 2018 Financial Conduct Authority (FCA) report found that that the maintenance and updating of legacy IT systems is costing banks between 18 and 26% of total operating costs[1]. The same report also found a marked difference between banks incorporated before 1993 and those after: the UK's older banks spent 0.5% of their total lending assets on maintenance, the newer ones 0.2%.

2020 is proving to be a landmark year in more ways than one. The COVID-19 pandemic has shifted already-nascent digital strategies to the forefront. The need to provide always-on digital services to a customer base no longer turning up to the branch or the ATM has had plenty of financial institutions glancing over their shoulders at the back office. But how can a bank know the time is right for change, and how do they go about it?

> "The importance of the core platforms is, if anything, increasing as focus moves beyond digitising customer experience to full end-to-end process digitisation and API enablement. Modernisation of the product, and the servicing capabilities of the platforms are becoming more front of mind than ever.

David Knott, chief architect, HSBC

The core replacement checklist

A core banking system replacement has earned many monikers over the years: open heart surgery, changing the engine at 300mph, or replacing the wings on a plane mid-flight. Indeed, there are plenty of examples of well-meaning core banking changes which have caused catastrophic results. They can grind to a halt after years of progress and millions of dollars[2], or fail at the final hurdle and cause near-irreparable damage to a brand[3].

A decision to press the big red button and make the switch is one that should not be taken lightly, but there are a series of checks that a bank can undergo to test whether their institution is one that may benefit from taking the risk.

> "The system needs to be set up in such a way that it is easy to make adaptations and host new types of financial products within the same core. FIs should be looking for a core that allows them to configure the different types of financial products as they go along, with an easily accessible API where you need one call to get what you want.
>
> Joost Reijnen, Ohpen

[1] FCA, "Strategic Review of Retail Banking Business Models", December 2018 https://www.fca.org.uk/publication/multi-firm-reviews/strategic-review-retail-banking-business-models-final-report.pdf

[2] https://www.independent.ie/business/irish/aib-settles-action-over-problematic-it-systems-26795452.html

[3] https://www.fintechfutures.com/2018/07/tsbs-april-it-crash-leads-to-107m-loss

Functionality in the face of innovation

Traditional core banking systems were originally designed to contain a range of product and process functionality, making them deployable at institutions of all shapes and sizes. Yet when the designers put these platforms together, they can be forgiven for not having the foresight to prepare for mobile and internet banking, API integration, open banking, and the rise of fintech added services.

The organic development of a core banking system can lead to an ever-growing amalgamation of new services and systems being built on top of it. This can create a "ball of mud" or "spaghetti" infrastructure which can make it difficult for supplementary services to be connected to the heart of the bank.

If a core system is beginning to struggle to interface with either modern communication methods, or with new technologies like APIs, it may be time to look at options to untangle the Gordian Knot sitting in the back office.

> "The modern customer expects a seamless digital experience, continuous availability and a continuous roadmap of new features. These expectations stretch the capabilities of many traditional core banking systems.
>
> Digital demands move beyond mere flexible and intuitive UIs, and now extend to capabilities such as social media integration, innovative payment capabilities, and flexible product and pricing engines. Core banking platforms will have to adapt in new ways to support these expectations.
>
> David Knott, HSBC

Technical considerations

> "One of the biggest challenges is simplification in order to be more efficient and effective. Banks normally have many technologies and solutions in their core systems. The current transformation in the industry and the digitization that affects every aspect of our lives demand more simplicity, in order to be faster and more efficient, resulting in a better service to our customers and society.

Alejandro Arroyo, head of CTO governance and strategic initiatives, Santander

The original designers of COBOL created the programming language to be one that enabled software to be cheaper, easier to write, and easier to integrate with. Despite its age it is still in place across multiple business verticals. The average person still interacts with COBOL ten times every day[4], while more than 12,500 companies rely on the language in the US[5].

[4] https://www.ft.com/content/9c40ed12-569c-11de-9a1c-00144feabdc0#axzz3gtUCRR00

[5] https://enlyft.com/tech/products/cobol

No matter the usefulness of the underlying language, bottlenecks are bound to appear with a longevity like that of COBOL. If when orders come down from on high that the bank requires a change in the core system a collective cringe shoots through the IT department, and they anticipate a few months of work to implement a small tweak, warnings flags should be raised.

Similarly, if tweaks are required to the core code every time a small change is made in interest rates, or in the aspects of a financial instrument, a bank should begin to think about the long-term health of its underlying infrastructure.

Banks need to address the talent side of things, too. While COBOL is still in frequent use across the globe, there is a dwindling supply of programmers in the market. As far back as 2014 banks were reporting that they were struggling to find technical new hires either interested in the language or interested in working at a bank[6].

[6] https://www.americanbanker.com/news/wanted-at-banks-young-tech-pros-with-old-tech-smarts

[7] https://www.fnlondon.com/articles/banks-face-spiraling-costs-from-archaic-it-20170912

[8] FCA "Strategic Review of Retail Banking Business Models", December 2018 https://www.fca.org.uk/publication/multi-firm-reviews/strategic-review-retail-banking-business-models-final-report.pdf

[9] https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/cloud-adoption-to-accelerate-it-modernization

[10] Capgemini, "Core Banking Transformation: Measuring the Value", 2014 https://www.capgemini.com/wp-content/uploads/2017/07/core_banking_transformation_measuring_the_value_1.pdf

Cost

The numbers around core banking and IT maintenance costs are as varied as they are astronomical. Citi analysts estimated that banks spend a collective $200 billion a year on keeping the lights on.

Other reports reckon that banks are spending as much as 80% of their IT budget on their legacy technology[7]. In the UK the FCA found that that the maintenance and updating of legacy IT systems is costing banks between 18 and 26% of total operating costs[8].

In an age in which transitioning to an outsourced model or private cloud can reduce IT department overheads by up to 40%[9], the cost argument is becoming a far more compelling one.

Banks must look at the correlation in costs between their ongoing maintenance programmes and the outlay required to either update or replace their system. Even here there are major divergences depending on the size of an organisation. The cost of an average replacement for Tier 3 and Tier 4 banks has been found to sit at around $9 million, while for Tier 2 and Tier 1 those figures can rise to as much as $60 million or more[10].

This divergence means that the "rip and replace" tactic of swapping from a legacy system to a brand-new platform is viewed as often either unsustainable in terms of costs or risk for larger institutions. Therefore, multiple strategies exist to augment the core without undergoing wholesale replacement.

> "Banks can deal with the pace of technology change when their core changes lasting years by moving to a core that doesn't take years to change. When it comes to the pace of technology change, FIs need to realise that technology will keep changing and evolving and won't slow down, so it's now or never.
>
> Joost Reijnen, Ohpen

LeasePlan Bank won the Banking Technology Award for 'Best Use of Cloud' as one of the first banks in the Netherlands to bring the entire bank to the cloud.

Complete tech-overhaul of Retail Savings Bank in 12 months

Change the core banking platform, the website, hosting, all interfaces, the workstations of all employees down to the Wi-Fi and printers, and migrating 17 million historical transactions and close to 1.000.000 accounts with retail customers in 2 countries? All within 12 months. That is what LeasePlan Bank did.


LeasePlan Bank
@LeasePlanBank

Tonight, the LeasePlan Bank team is attending the #BankingTechnologyAwards ceremony in London! Our bank is nominated in the categories Best Tech Overhaul Project and Best Use of Cloud. #digitalbanking #leaseplan #onlinebanking #cloudmigration #techoverhaul

3 12:00 AM - Dec 6, 2019

See LeasePlan Bank's other Tweets


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What a night it was at the 20th Banking Technology Awards! We couldn't be more proud of LeasePlan Bank and their incredible team, Sander Frons RA, Robert Brockhoff, Chemelle Pengel, Kevin Wetzel, Huy Pham, for winning the 'Best Use of Cloud' award and for being 'Highly Recommended' for their Tech Overhaul based on the Ohpen Platform. We are glad that our team, including Angelique Schouten, Pim Teeuwisse and Kees Postma could join for this amazing win. Thank you, FinTech Futures and Tanya Andreasyan for a fabulous event and Rich Hall for the great entertainment!

#richhall #bankingtechawards #Fintech #FinServ #CoreBanking #Technology #Innovation #AmazonWebServices #SaaS #CloudBanking

148 · 15 Comments

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Ohpen's Platform Strategist, Kees Postma, CCO Angelique Schouten and Project Manager Pim Teeuwisse celebrated the win with LeasePlan Bank in London.

> The LeasePlan Bank migration was very successful, within the first week everything was business as usual. Winning the Banking Technology Award was the perfect crown on this project and my job at the company. So I decided to join core banking company Ohpen in order to help more banks win a Banking Technology Award.
>
> Pim Teeuwisse, Project Manager

Options for transformation

The marketplace for core banking systems is one that has undergone consolidation for nearly a decade. Gartner listed 19 core banking vendors in its Magic Quadrant rankings in 2014[11]. In 2019 that number had shrunk to just seven[12].

Yet there are a set of emerging vendors starting to offer new core banking systems based in the cloud, driven by configurability and able to offer financial institutions a chance to modernise their back office in a less disruptive manner. Traditional software vendors are reacting in kind, providing their customers with additional options.

The modernisation of a bank's core is no longer a binary choice. No longer are financial institutions faced with the decision of whether to sit on their hands and wait for a core system to splutter and die or tear out the heart of the technology infrastructure.

> When it comes to improving or refitting a core system, there are a lot of possibilities to add services on top of it, or next to it. But this is unfortunately a case of putting lipstick on a pig - and it's the pig that ultimately needs replacing.
>
> Joost Reijnen, Ohpen

[11] Gartner, "Magic Quadrant for International Retail Core Banking", 2014 https://www.gartner.com/en/documents/2909521/magic-quadrant-for-international-retail-core-banking

[12] Gartner, "Magic Quadrant for Global Retail Core Banking", July 2019 https://www.gartner.com/en/documents/3953461/magic-quadrant-for-global-retail-core-banking

Update and expand

A bank looking to update its systems, but not throw the baby out with the bath water, may look at simply updating its existing core by undergoing a transition to a new codebase.

An update path involves some minor changes when compared to other options at the table, as it seeks not to fundamentally change the form or operation of the core banking system, but to instead to tweak it to better suit the needs of the modern bank.

This can mean a version upgrade if the bank is currently under contract with a third-party vendor, or brining in experts to bring a proprietary system in line with the rest of a bank's technology stack. Yet modernisation of this kind rarely enables the launching of ambitious new projects, product lines or services.

Rip and replace

This tactic brings us back to the central issue of legacy systems. A bank that sees no alternative can opt for a wholesale change, a form of cards on the table "all in" decision. The process is one that is lined with risk but can become necessary if dealing with the existing legacy platform is turning into an untenable problem.

Despite the dramatic nature of the language, very few large banks are capable (or brave enough) to attempt a switchover of their core systems across one weekend. A rip and replace can occur over a time period of years, as a bank slowly moves accounts from one system to the next across multiple business lines.

Yet the strategy may be one that appeals to smaller banks, credit unions and community organisations. Switching during a quiet weekend with a few hours' disruption can mean that the costs associated with running a replacement are not stretched out over months or years.

> "One needs to improve the core system in two ways: migration of the applications and databases to the cloud, either private, public or hybrid, and reengineer the applications to become more effective. You can do this step by step, evolving your core systems. Rip and replace will be viable as long as the case in terms of effort, time and gains is sound.
>
> Alejandro Arroyo, Santander

Hollow out

Hollowing out the core involves rewiring the traditional core banking system to become not much more than the system of record, holding information about customer transactions, histories and status. Lifting functionality from the core layer enables a bank to install supplementary systems which can handle integrations with digital banking, the creation of new products and services, and connections with fintech companies.

Proponents of the hollowing out strategy believe that the battle has moved from the core to the middle layer, that fundamental changes to a ledger management system which still operates reliably have no purpose. Trying to implant new logic systems and services into something built for transactions is put forward as a losing strategy.

Supplementary core

Sometimes referred to as a parallel core or phased migration, this strategy involves the implementation of a separate core banking system that can meet the newer and advanced needs of a modern digital banking landscape. The new core can be set to run a differentiated array of platforms, products and connections.

Once comfortable that the new core banking system has been implemented and is ready to experience scale, a bank can then start to shift more accounts and responsibilities onto the new platform, before crossing over completely.

This strategy has been employed by larger banks when launching greenfield neobanks, where there is a high need for innovation and a clean slate in terms of technology. In many cases the new core will be designed to overcome the flaws of its predecessor, and will be based on agile cloud-native technology.

Do nothing

Why break what isn't fixed? Believe it or not, the option to do nothing remain an attractive one for banks. This applies especially for those who feel that the risk inherent to their core structure is minimal, or that there currently exists no business case for them to make a core transformation of any sort.

This is a strategy in which a bank will look to its competitors and decide when to take the next step alongside them. The tactic – as long as it is a pragmatic one – can in some cases be a beneficial one for financial institutions. It prevents a bank embarking on an expensive transformation under false pretence and allows it to monitor market dynamics.

What does a future core banking system look like?

Adoption of new technologies is occurring rapidly in the financial services sector. The percentage of IT budgets dedicated to the use of public cloud services has risen to 41% since 2018[13]. It seems that the days of the core banking system sitting in a data warehouse on-site are starting to go the way of the dodo.

Banks need to start to look inwards at just what they want their core banking system to do. While the platform has always been the beating heart of the bank, its importance to future innovation cannot be overstated.

The past few years have see banks experimenting with a combination of physical and digital operations, but rapid change in the market brought on by the COVID-19 lockdown in particular has exposed the flaws in maintaining a sprawl of old systems loosely connected together into a spaghetti.

The key to banking sustainability will be investment in the right systems and at the right time, along with an ability to scale to digital demands when necessary. A fully digital core banking system supplemented by a shell of service-based infrastructure looks to be a way forward for the future of banking.

[13] Refinitiv, "Public Cloud Investment Barometer", 2019 https://www.refinitiv.com/en/resources/special-report/public-cloud-investment-barometer-report

Traditional mainframe-based systems will struggle to cope in the years to come, and if customers cannot access services then a bank swiftly becomes obsolete when compared to its competitors. The core of the future looks to be more and more a compartmentalised, modular solution with the flexibility to adapt to changing conditions.

Yet banks must weigh up their options and not be rushed into rash decisions by market conditions. Strategic investments are more important than ever, and selecting either the right core systems supplier or moving along the right development pathways could be a make or break decision.

> "A core banking system of the future won't just be a core running somewhere in the cloud; FIs will be able to sign up, there will be a public API to talk to, and it's just there. It's true financial services as a service.

Joost Reijnen, chief technology officer, Ohpen

> "The core of the future will be a modular core system, letting the bank 'change pieces' easily, in a 'plug and play' manner, and displayed in a cloud environment.

Alejandro Arroyo, head of CTO governance and strategic initiatives, Santander

> "For those core transaction posting capabilities, little will change functionally, though they will likely be more streamlined than the traditional 'bank in a box' platforms with which we are familiar today.

Changes will be seen in hosting and development languages, with Cloud native becoming more and more the norm. Channel integration is probably where the most change will occur, with increasing levels of functionality exposed to multiple internal and external sources via API.

David Knott, chief architect, HSBC

The API advantage in cross-border payments

Servicing the SME market with an all-in-one international solution. By Fabrizio Zanollo, head of international, Form3

The economic scale of the SME market is substantial, contributing £2.0 trillion (52%) a year[1] to the UK economy alone and growing.

But SME's are struggling when it comes to trading across borders. Recent findings from the SME Growth Tracker by Capital Economics have identified the top problems for SMEs in 2020 as #2 Global expansion and #3 Managing their supply chains. SMEs struggle to minimise the impact of currency fluctuations and maximise the use of their cash flow. As trading becomes increasingly cross-border, SMEs will be looking for fast and simple solutions to these problems.

Why have SMEs traditionally been overlooked by banks?

Historically, banks tend to have little appetite servicing SMEs through their existing legacy avenues as they are designed to service larger enterprise clients with deeper pockets. Over the last decade, we have seen the rise of Money Service Businesses (MSB) that are servicing a growing demand from SMEs wanting to trade internationally with a more tailored level of service.

Companies such as HiFX, Cambridge Payments, Global Reach, Alpha FX and AFEX have demonstrated that price and service certainly outweigh the loyalty a company holds to their bank as they increased their market share in the FX market.

So what are SMEs looking for from their banks?

As the market develops, SMEs and consumers are becoming more aware of the alternatives to a bank and are now looking for one complete solution, rather than using multiple lenders, brokers and banks. Simplicity, automation, consistent and transparent pricing as well as digitalisation is of upmost importance.

SMEs cannot typically use their financial institution of choice as many do not have this capability at their disposal. Banks need to pivot and introduce this quickly, cheaply and sustainably.

Fintech collaborations are becoming much more common and banks are quickly realising that adaptation is essential for increasing profitability and revenue. Banks can go to market quicker as all the heavy lifting has been done already.

[1] https://bcrs.org.uk/smes-and-their-importance-to-the-uk-economy

API technology from Fintechs now allows a bank to essentially plugin specialist modular components to their customer ecosystem, leveraging external specialist services, outsource compliance and still benefitting from the revenue stream and wallet share.

What do SME's need to trade internationally?

Spot Transaction

The ability to convert from one currency to another quickly, easily and cheaply is essential. This process can also be digitised and managed simply through a user interface without the need for manual execution via bank employees.

FX Hedging

The ability to hedge FX risk is becoming more relevant through these turbulent times as volatility of the currency market is completely unpredictable. One of the key differentiators between what a bank would provide and an external specialist is access to more sophisticated products.

Forward contracts give businesses the ability to fix exchange rates over a set period, either for a specific date in the future or over a period where you can draw down against ongoing business requirements. Combined with a pricing strategy, over this set period it can protect profit margins and remove an element of buying/selling uncertainty.

Fabrizio Zanollo, head of international, Form3

Payments and Collection

As SME's export through more global channels such as e-commerce & marketplaces, this creates further problems when it comes to collecting money. International collection is expensive, involving additional cross border payment and collection fees. In an ideal world, an SME would be able to collect funds domestically in as many of their trading locations as possible to reduce these ancillary costs.

How can banks use transaction APIs to implement a tailored FX solution?

Banks are hungry for additional revenue, however, their legacy systems are aligned to the needs of agile customers with leaner exposure and simpler needs. To build something from scratch would be very costly and likely to be out of date before it is live.

Form3 are building an all-in-one International Transaction Service to solve this problem in collaboration with FX specialist Ebury. With a single cloud-native Json API, FIs across Europe are trusting Form3 to connect them to payment schemes (FPS, BACS, SEPA).

Form3 are leveraging this expertise to connect FI's to Ebury's FX engine and provide banks with the ability to turn on a fully digitalised FX transaction and international payment service seamlessly.

Through one single integration, the Form3 API gives multiple access to scheme and payment services.

Finally, a modern and fully integrated solution that meets the needs of both Banks and SMEs.

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About FinTech Futures

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We provide daily news, in-depth analysis and expert commentary across a comprehensive range of areas.

Our broad readership and solid reputation, combined with in-depth coverage across fintech on a worldwide scale, makes us the leading resource for technology buyers, sellers, developers, integrators and other specialists across the sector.

Our website attracts nearly one million monthly page views and our daily newsletter is delivered to over 42,000 key decision-makers in the financial services and technology sectors. The brand is active across the key B2B social media platforms, with over 40,000 followers on Twitter @FinTech_Futures and over 20,000 members in our LinkedIn groups.

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