next in financial services

# AN API-TITE FOR TRANSFORMATION

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# Hungry for reform, do banks have enough appetite for digital transformation?

**There is a wealth of thought leadership that describes and evangelises the potential advantages that can be realized from digital transformation, but few of these advantages can actually be guaranteed and any business plan always needs to weigh up both the risk and the rewards inherent in any major transformation. And while cost and risk of such projects can be substantial, what is often overlooked is the risk created either by cutting corners or by doing nothing.**

**Digital transformation is redefining business models and processes across every sector and business function.** Organizations are adopting digital technologies not only to become more agile and competitive, but also to enable them to increase automation and drive innovation. The aim is to move from monolithic applications on legacy systems to smaller more agile cloud-based apps tightly integrated using secure application programming interfaces (APIs) that can apply automation and artificial intelligence (AI) to optimize performance. Digital transformation, however, isn't a product that you can buy off the shelf, or even indeed a one-off project that you can implement. It is an ongoing process that is not only unique to each organization, but also requires constant maintenance and refinement as newer technologies emerge and as the market evolves.

The concept of cyber risk appetite is well understood. Organizations could spend an almost infinite amount on cybersecurity. Instead, they define a budget based on their cyber risk appetite and do their best to mitigate the threats as much as possible. Similarly, organizations need to define their appetite for transformation. They also need to weigh up the risk of doing nothing (and being eclipsed by new entrants and other more agile competitors) with the project risk inherent in any transformation. They also need to balance the budget needed to get the transformation right against the expected rewards in terms of enhanced agility and efficiency.

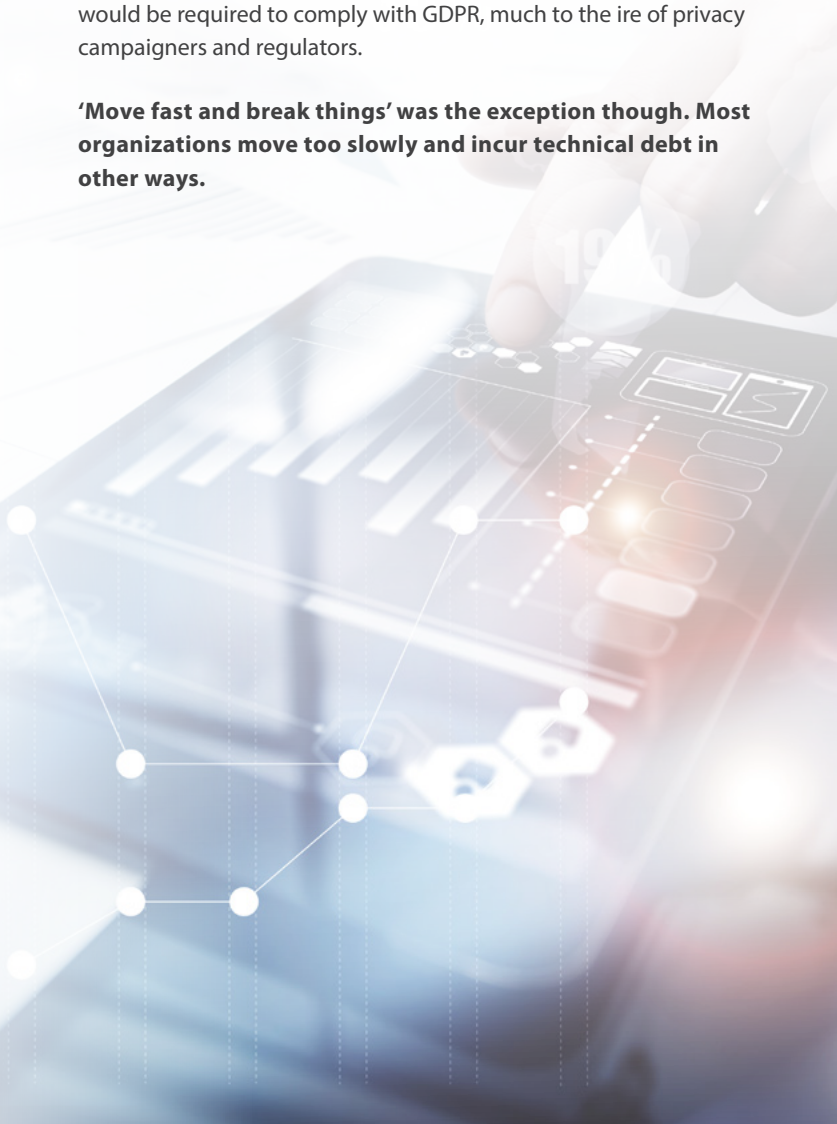
Your appetite for transformation will be defined not only by the risks, costs and benefits of any transformation, but also the true risks, costs and benefits of either doing nothing or adopting temporary solutions. The business case for any digital transformation project will need to provide as accurate a picture as possible of exactly with the project risk and costs would be as well as the anticipated benefits. What is often less well understood though is the cost of delay.

**There is obviously an opportunity cost in not doing a digital transformation project.**
This will be the cumulative cost over time of ceding ground to newer and more agile competitors. There is also an accumulation of "technical debt." In normal systems management terms, this is used to describe the costs companies pay when they choose to build software the easy (or fast) way instead of the right way, cobbling together temporary solutions to satisfy a short-term need.

The true "technical debt" that is incurred when failing to get digital transformation right is far greater than this though and can impact an organization in many ways.

**Some organizations move too quickly.**
'Move fast and break things' was a development mantra popularised by Facebook and picked up with enthusiasm by many other software development teams both small and large. The idea is that if you aren't breaking things, you're delivering value too slowly. The mantra had to be abandoned in 2014 as CEO Mark Zuckerberg explained: "We were willing to tolerate a few bugs to [move fast]. But having to slow down and fix things was slowing us down." The problem was that the company had built layer upon layer of development each of which lacked sufficient rigour and included bugs. Going back and fixing this became not only a massive overhead, but in certain respects an impossible task. Facebook now lacks the agility to unpick its systems and implement the fixes that would be required to comply with GDPR, much to the ire of privacy campaigners and regulators.

**'Move fast and break things' was the exception though. Most organizations move too slowly and incur technical debt in other ways.**



# Cloud migration: 'application problem' or 'data problem'

**Most companies migrating workloads to the cloud assume that they have an 'application problem' deciding which workloads to move to the cloud and in what order. Many have already lifted and shifted those workloads that are easy to migrate and are now left with the more challenging ones, typically legacy applications that cannot be moved to the cloud easily or at all.**

Once in the cloud, however, they discover that they actually have more of a 'data problem' managing exponential growth in data volumes with static budgets - constantly having to optimize costs. Those that failed to define a comprehensive data architecture before migrating to the cloud find that the lift and shift approach has simply moved the problem without resolving it.

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> *Jay Nair, SVP & Industry Head Financial Services, Infosys*

Ongoing data management requires agility to be able to identify what data is Personal Identifiable Information (PII) which will need to comply with GDPR and other regional privacy regulations, what data is primary Intellectual Property (IP) to be protected rigorously, and also what data can be archived and what can be discarded. With IoT devices and 5G driving exponential data volume growth, holding onto everything because you cannot manage it efficiently, is adding significant technical debt.

# Cybersecurity: rapidly rising risks

At the same time, security teams are facing the challenges of not only dealing with a proliferation of poorly integrated point products and security solutions, but also the rising volume and sophistication of cyber threats, which can also lead them to resort to stop-gap measures.

This tends to result in further technical debt in the form of 'cybersecurity debt' - the accumulation of vulnerabilities in software that makes it harder to protect your data and systems as time goes on. Over time, as teams struggle to maintain a patchwork of poorly architectured and secured applications, tech debt accrues in the form of lost productivity or poor customer experience and even in data breaches.

# Legacy: looming large

By far the largest source of technical debt for banks however stems from their legacy systems. Many banks have archaic mainframe-based, core banking systems that are up to 50 years old and have been repeatedly patched and updated to meet each layer of regulation. Over the years they have also participated in a series of mergers and acquisitions resulting in a maze of spaghetti connecting systems and applications between each unit and each data store. For some the spaghetti is now so complex that they dare not unplug a single connection for fear that it will cause an unpredicted chain reaction, bringing their entire operation to a standstill. Ripping out and replacing such core banking systems is a massively complex and risky task - described by some as being similar to changing the engines on a jet airliner 'in flight'. It is possibly understandable that while progress has been made on peripheral systems like compliance applications, staff dashboards and user interfaces, few if any major banks have succeeded in replacing their core banking systems.

Most banks however realize that maintaining these legacy systems (and the maze of spaghetti that goes with them) simply isn't sustainable in the long term. Not only is the accumulative technical debt becoming too great to bear, but the systems are hampering their operational agility and becoming a critical point of failure - some banks now lack the ability to repair certain legacy systems if they fail.

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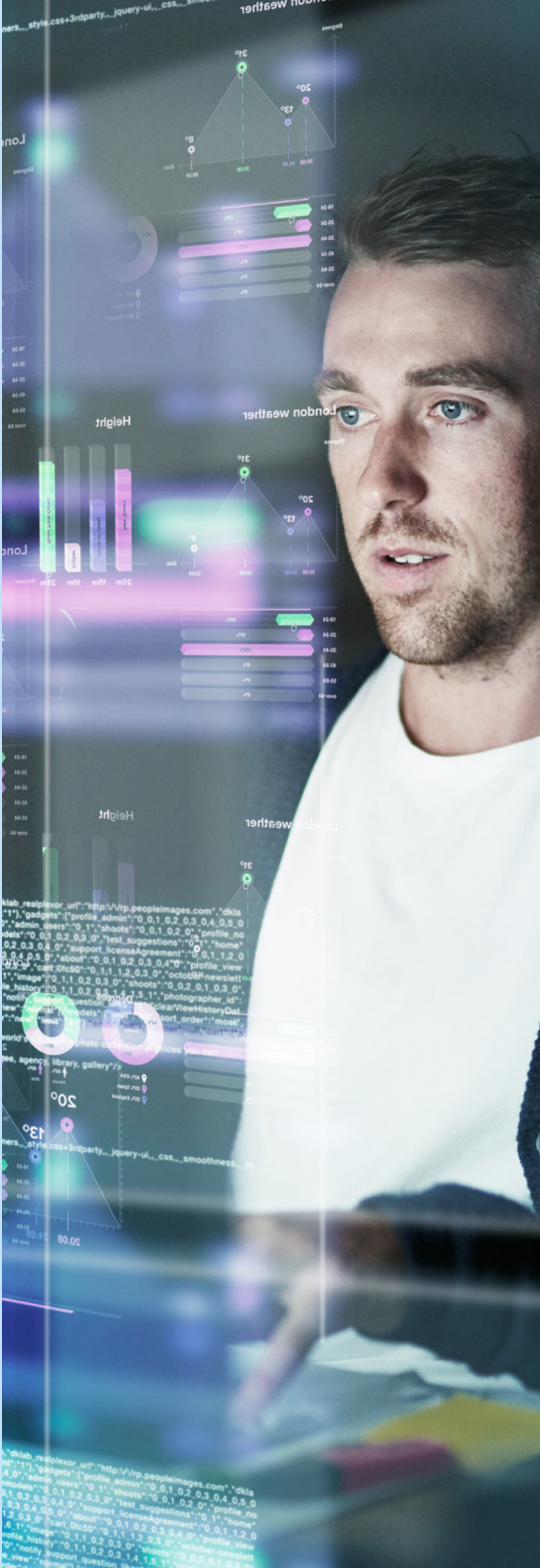

# Compelling Case for Change

**When you consider the potential benefits of digital transformation against the cumulative costs of putting off any change, the opportunity cost (the difference between the two options) becomes significant. All large organizations in seeking greater efficiency have, and continue to undertake large infrastructure rollouts of hardware, operating systems and application development frameworks.**

These infrastructure rollouts typically constitute the backbone of many shared services, crucial to running the organization. Because of the reliance on such shared services organizations are reluctant to make changes, and prefer a steady-state to reduce down-time and operational costs. However, technology moves fast, and what was relevant yesterday can rapidly become today's legacy and tomorrow's barrier to modernisation thus amplifying technical debt.

Large organizations move when they have to, "if it isn't broken don't fix it", however regulation and business agility continually drive change, especially in financial services. In one European bank that Infosys is working with there are two major projects being undertaken to reduce technical debt. In each of these projects the main drivers are business agility and business innovation. The underlying technology stack or infrastructure has become legacy and now constricts the bank's ability to employ modern technology architectures and reap their potential cost-efficiencies. The bank is considering three possible approaches:

### 1 Inline upgrades

these are upgrades that move from a legacy version to a newer version of the same software and/or operating system. For example, going from Windows Server 2012 to Windows Server 2022

### 2 Replacement upgrades

these are upgrades that replace software with a completely different piece of software which is compatible or has the same functionality. For example, the Spring framework which is often used to replace with Act or Grails.

### 3 Opensource upgrades

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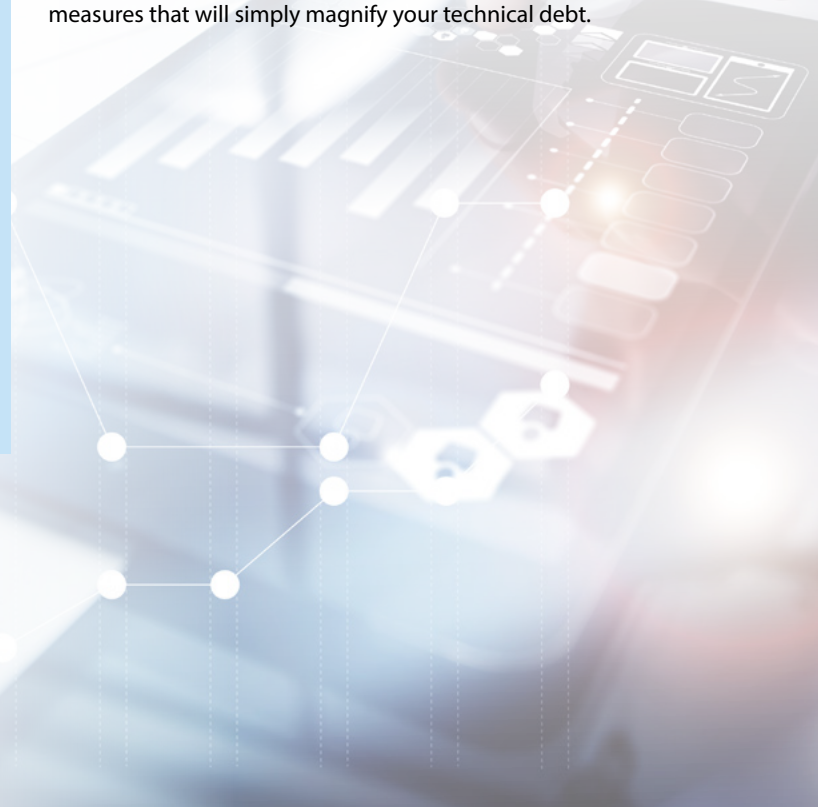
Overall, the program includes upgrades OS, frameworks, languages, databases and messaging systems, migration to Microsoft Azure and strategic application replacement with Opensource and PaaS.

Another large British bank that Infosys has worked with has faced similar issues, but has been driven more by regulatory requirements. This bank has approximately 50,000 Windows 8 and Windows 12 servers. These servers host various shared backend services that are used and owned by different lines-of-business. The support and maintenance of these servers is now end-of-life, meaning there will be no bug-fixes or security patches, making them susceptible to zero-day vulnerabilities. At the same time many the applications that are deployed on these servers lack resilience, can be hard to maintain and often employ older frameworks and drivers which are also no longer supported. If these issues are not remediated, then the bank will be required to report these unsupported systems to the regulator as they constitute an operational risk. The bank's only option is to migrate these workloads to the cloud while modernising using cloud tooling and services.

Projects of this nature require you to have an accurate understanding of your appetite for transformation, along with an appreciation of the sources of technical debt (listed above). Together these will allow you to assess the opportunity cost more accurately and focus your transformation planning to ensure that you 'get it right first time'. It will also hopefully prevent you either moving too quickly with a 'move fast and break things' approach or too slowly with stop-gap measures that will simply magnify your technical debt.



## About the Authors

**Jay Nair** is Senior Vice President and Industry Head for Financial Services in Europe, Middle East, and Africa. He is based in London and addition to Financial Services, also heads the UK Public Service business for Infosys. He is a member of the Executive council for Financial Services, Health Care and Lifesciences which is the largest segment at Infosys.

He has spent close to three decades in engineering - both in process control engineering and since 1999, within the BFSI ( Banking, Financial Services and Insurance) sector. Jay has extensive experience in business and technology consulting, practice development , engineering and large-scale enterprise-wide technology program management. He has led global teams and programs around in the Americas, Europe, India, China, LATAM, and Asia Pacific. He has post graduate qualifications in both Software and Business Management.

**Bill Mew** is an entrepreneur and high-profile opinion leader that campaigns for striking the right balance between meaningful protection of civil liberties like digital privacy and security, and maximising economic and social value. As an entrepreneur, Bill is CEO of The Crisis Team, which is made up of an elite team of experts in incident response, cyber law, reputation management and social influence that help clients minimise the impact of cyber incidents. Bill has been profiled as the top global influencer for privacy and digital ethics and helped lead the crowdfunding to launch None of Your Business, an NGO for pan-European privacy enforcement, bringing the main cases against Facebook and others on the first day that GDPR was enforced. On the innovative use of technology, he was recently listed as one of the global top 100 cloud influencers (second highest in Europe), and he is ranked in the global top 10 for smart cities, govtech and other digital transformation themes.

For more information, contact askus@infosys.com

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