



TECHNO  
VISION | Change  
Making  
2021

B E L I K E W A T E R

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**Financial Services**





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# BE LIKE WATER



**Anirban Bose**

CEO, Financial Services SBU  
Capgemini

# FOREWORD

Financial Services TechnoVision, now in its third year of publication, continues to provide businesses with a robust and proven foundation for technology adoption. It offers effective thought leadership to help companies navigate the complex yet critical technology environment.

Agility and speed are key drivers for the transformation of the financial services industry. Our theme for this year's TechnoVision report is 'Be Like Water', which focuses on the fluid strategies and architectures of a modern Technology Business. To reach this status, financial institutions must use digital systems and services to transform into nimble, customer-focused, platform centric organizations.

Financial Services TechnoVision 2021 lays down the elements of such an organization. Through a continuum of 37 building blocks extending from 'systems' to 'people', it brings to life the underlying fabric that supports technology-business transformation of an organization. Readers are inspired through real life case studies mapped to these building blocks as well as financial services implications of larger, more encompassing technology trends.

The insights within TechnoVision has helped to generate high-level discussions at industry events across the globe during the past year. Our conclusions are appreciated by analysts and clients.

We hope the insights in this 2021 edition of Financial Services TechnoVision help you to drive technology business transformation in your own organization. I look forward to hearing your feedback.



# INTRODUCTION

I am delighted to introduce this third edition of TechnoVision for Financial Services, an industry perspective of TechnoVision Change Making, our guide to technology enabled innovation and transformation.

Our passion is to inspire boldness and vision for enterprises to make the most of the opportunities that lay ahead, by sharing the insights and perspectives of our global team of technology experts. For this reason, it is a key asset of our Technology, Innovation and Ventures Function, and I am especially proud that it continues to be a relevant source of thought leadership in its thirteenth year of production.

An industry view of TechnoVision as done here is especially important. By applying content in context and explaining our perspectives through the lens of your industry, we hope that it further emboldens you to dare to dream and turn it in to your reality. We are as always, ready to connect and help you in your transformation journey.

Financial Services TechnoVision will act as an effective thought leadership to help financial institutions navigate the complicated yet indispensable world of technologies.

Financial Institutions have seen significant traction around open banking, intelligent insurer, core transformation, data estate modernisation and more recently digital assets & currencies. Financial consortiums, cross-industry associations, BigTech-bank partnerships have also been on the rise as FIs have realized the power of ecosystems. As institutions start experimenting with new technologies and models to drive their business transformation, FS TechnoVision will act as an advisor for identification of trends and their impact.

Acceleration of consumer technologies means FIs will have to reimagine their operating model towards cost & agility with advanced automation techniques, APIs, microservices. In such a scenario, FS TechnoVision will act as an enabler for technology transformation.



**Pascal Brier**

Group Chief  
Innovation Officer,  
Capgemini



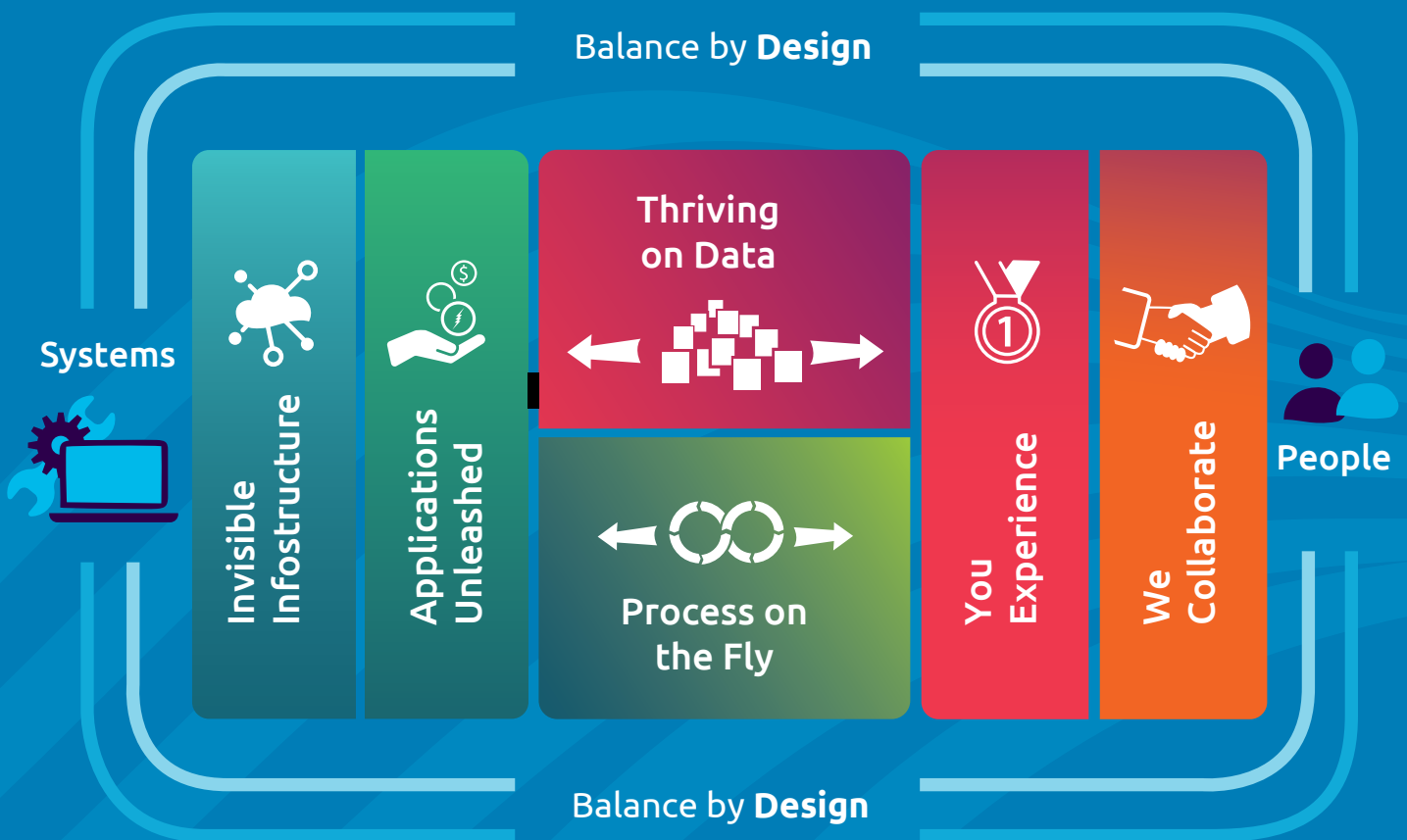
**Sudhir Pai**

CTIO, Financial Services  
SBU, Capgemini



# Overview of TechnoVision

The TechnoVision 2021 Technology Business trends:



[Read TechnoVision Change Making for a complete overview.](#)

## Guidelines To Read This Handbook

In TechnoVision, tangible trends are presented through six containers, providing the 'What': what is happening, what might happen and what we only dare to dream. These containers should be consumed wholeheartedly, as there is no substitute for a healthy technology appetite in the world of a Technology Business. When read from right to left, we see how the "real" world of people and things are mirrored in a "virtual" world of systems and digital solutions. The six containers are complemented by an overarching container where we look at the 'How'. This extra cluster of overarching, fluid like water, design principles should be kept as a mindset throughout the lifecycle of applying technology in the transformation journey.

How do we read this document? This Financial Services edition of TechnoVision 2021 brings an industry perspective to the TechnoVision framework, providing a structured approach

## The TechnoVision 2021 Technology Business trends:

### Invisible Infostructure

Evolving the IT Infrastructure into the simple, pluggable utility it was always supposed to be.

- The Soft, the Hard and the Virtual
- Crouching Tiger, Hidden Container
- Simply the Edge
- Ops, AI did it Again
- Ceci n'est pas une Infrastructure

### Applications Unleashed

Liberating the legacy application landscape and unleashing the next generation of powerful, agile, cloud-based apps.

- Kondo My Portfolio
- Bot is the New App
- When Code Goes Low...
- API Economy
- Apps ♥ AI

### Thriving on Data

Leveraging data and algorithms as an asset to increase the "Corporate IQ".

- Crazy Data Train
- Power to the People
- Good Times
- Data Apart Together
- How Deep is Your Math

### Process on the Fly

Building, managing, and running processes that match the dynamics of the digital outside world.

- Processes 101
- Rock, Robot Rock
- Can't Touch This
- Pleased to Meet You, Process
- Augmented Me

to exploit technology insights. There are dedicated one-pagers for each container that talk about what technology and design philosophy each container includes, followed by its implications in the financial services world and a few key trends in the area. On the next pages are detailed case studies pertaining to each sub-container, one related to FS and one to any other industry or sector, which brings to life the 37 building blocks of TechnoVision.

How do we apply this document? There are many ways to [apply TechnoVision](#), as an introduction to technology business trends, as a teambuilding tool or ice-breaker during transformation workshops, for brainstorming new ideas and business model canvassing, creating a digital picture for your enterprise and so on. Blending technology trends with business challenges will enable your enterprise to create a Technology Business story that everyone can contribute to and benefit from.

### You Experience

Creating seamless user experiences for decisive, magical moments.

- Signature Moments
- Reality Bytes
- Own Private Avatar
- I Feel for You
- No Friction

### We Collaborate

Tapping into the power of the connected and collaborative "everything".

- The Team is the Canvas
- Fluid Workforce
- New Chain on the Block
- Use the 5G Force, Luke
- Creative Machine

### Balance by Design

Overarching design principles to be followed and checked for a Technology Business to become flowing, adaptive, and responsive.

- Adapt First
- With Open Arms
- Technology  $\Leftrightarrow$  Business
- IQ EQ CQ up
- Trust Thrust
- No Hands on Deck
- What's Our Story?



# INVISIBLE INFOSTRUCTURE

The infrastructure part of the IT landscape is a crucial foundation for any organization with business technology ambitions. Although increasingly invisible to the naked eye, it needs to provide fast, secure, agile and cost-effective access to any data or application service. Like water, it should be fluid and flexible to the demands of the enterprise. It simply needs to be delivered anywhere, whether on or off-premise, through the cloud or not. To flow uninterrupted, it needs to tap into a highly connected, always expanding network of people, organizations and things – clearly illustrating why “infostructure” is not a spelling mistake.

[Read TechnoVision Change Making for a complete overview of this technology container.](#)



# Invisible Infostructure



## FS Implications:

Financial Institutions are at the forefront of embracing cloud-native architecture, either driven by competition from more agile competitors or from an innate wish to eliminate costs associated with legacy infrastructure. But a modern IT infrastructure goes further by inculcating a faster time to market, enabling hyper-personalized services and facilitating rapid scaling in-line with time-sensitive demand. However, few organizations have taken the radical step to fully replace their core infrastructure, with most undertaking a progressive minimization of their dependency on legacy platform while they build a modern architecture around it. Internal challenges in terms of disparate data sources, lack of application rationalization, distrust on cloud security, and organizational culture may have slowed down the migration from legacy IT.

Financial services organizations are 'accelerating cloud journeys', with specific interests on multi, hybrid cloud deployments. These cloud conversations are tightly coupled with Data & Automation, pretty much looking into how an IT unit can 'service' business through 'Data-led, Cloud-first' offerings. Whilst the benefits of a hybrid (private-public) and multi cloud (multi-vendors) strategy is quite evident, as seen through [HSBC](#) & [Barclays](#), an effective approach to tackle the following challenges is essential to realize benefits.

- **Operational Complexity:** Interoperability is a major consideration in a multi-hybrid cloud environment. Varied architecture, configurations for storage, networking, load balancing and security management are a few to call out.
- **Cost Considerations:** Data portability usually takes a hit as inter-cloud data transfers can prove to be tricky as well as pricey, pushing up total cost of cloud operations.
- **Data Protection and Security:** While technology freedom (minimizing vendor lock-in) is a major advantage for multi cloud approach, it also creates challenges in bringing together multiple clouds with different security approaches to create one large network. Country specific data governance regulations should also be taken into consideration while investing in cloud strategy.
- **Skill Gaps:** Expertise is imperative to oversee all functions involved in hybrid and multi cloud deployments, to understand technological and economic implications. Talent challenges are accompanied by complexities related to engineering and open-source skills, and change management.

All of this implies the need for a well-laid out approach to ensure and scale adoption of cloud services within the

organization. A Multi-Cloud platform & Center of Excellence model maximizes the synergistic impact of disruptive technologies, data and ways of working, with speed & agility as primary drivers for transformation. End goal for such a Cloud platform COE is to accelerate cloud adoption within the organization.

## Key Trends:

- Financial Institutions are migrating to cloud to accelerate their digital transformation journey. Cloud not only provides on-demand scalability and agility but is also necessary for competitive differentiation. At different stages of the digital journey, cloud provides the agility for testing new products & services, improves interoperability between assets, and engages a positive feedback loop for recalibration of the digital strategy, if needed. It also eliminates the risk associated with IT infrastructure, reassessing the risk as OpEx instead of CapEx.
- Multi-cloud strategy allows financial institutions to balance cost optimization, agility and performance with security compliance. While financial institutions may be quick to adopt public cloud services, scaled implementation may still be limited due to security concerns. Further, multi-cloud strategy allows institutions to take the benefits of varied vendors for different solutions. [Microsoft Azure Arc](#) allows users to build coherence across on-premises and cloud services.
- Confidential computing alleviates data security concerns for financial institutions by encrypting data even when it is being processed. While security concerns had accelerated the adoption of cloud computing, traditional computing methods only protected data when it was at rest or in transit. Confidential computing creates an isolated computing memory called Trusted Execution Environment (TEE), to avoid exposure of sensitive information. [DIA](#) is using IBM cloud computing capabilities for protecting its financial information from potential malicious attacks.
- Decrease in latency, advent of 5G and development in IoT will lead to rapid cloud-edge integration as sensitive data is going to be processed near the source (edge) with richer analytics being driven by the cloud layer. Edge computing will eliminate data security concerns as sensitive customer information need not be stored anywhere. Facial recognition technology, automated claims validation, virtual tellers are going to be low-hanging use cases to drive more personalized customer experience.





# The Soft, the Hard and the Virtual



Infrastructure turns virtual, software-driven and automated, and delivered as easy-to-consume services

## Financial Services

### Future Generali

Future Generali India has adopted a hybrid cloud structure to create a more scalable and simplistic enterprise data management landscape. The cloud environment created with Microsoft Azure and Nutanix provides selective accessibility features, scalability options and requisite security. Future Generali has migrated its external customer-facing applications to Azure, which is fast and cost-efficient. In collaboration with Veeam and Nutanix, the company is also working toward simplifying its data management to allow easy and secured access of data for all its employees. To maintain business continuity, Future Generali India, in partnership with Veeam, was able to transfer 100TB of data to Azure in 7 days, enabling remote working of 3,500 employees. After investing in the new data management suite, the company has been successful in mitigating data loss with 100% backup rate and 99% recoveries while reducing the recovery time from 48 hours to 24 hours.

## Cross-Industry

### Presto Mall

PrestoMall, a leading e-commerce platform in Malaysia, is transitioning to a fully managed cloud-native database system to optimize its operations and achieve a significant reduction in its IT infrastructure cost. By implementing Alibaba Cloud's PolarDB, PrestoMall's infrastructure is able to support 100TB of data and handle millions of queries/second while maintaining the reliability and security of its previous traditional database technology. PolarDB also facilitates a faster recovery to normal operations in case of hardware failures. Further, data migration to the new cloud-native database has resulted in a 40% cost reduction for the e-commerce platform.

# Crouching Tiger Hidden Container



All the complex infrastructure an application needs to run on, nothing to see but containers

## Financial Services

### AvivaSA

Insurance provider AvivaSA has replaced its service-oriented architecture with a container-based and microservices architecture resulting in 95% faster delivery of services and 23% reduction in costs. AvivaSA deployed Red Hat OpenShift container in a virtualised on-premise environment. Four critical business systems related to sales functions and internal operations were migrated to the container system with 40% critical transactions – around 5 million transactions/day - processed in Red Hat OpenShift and related Red Hat technologies. The auto-scaling and self-healing capabilities of the container enabled AvivaSA to reduce maintenance costs and operational expenses related to manual and routine tasks. The time to market for updates and new services also decreased significantly. Adoption of a container-based architecture also prepares AvivaSA for future use of cloud computing environments.

## Cross-Industry

### HAVAN

Havan, one of the largest retail store chains in Brazil, has migrated from a private SQL-based architecture to a container-based system in collaboration with Red Hat. The new infrastructure on an agile container platform in Kubernetes has done away with the inherent lacunae associated with manual application development and platform integration. This has led to a reduction in software development costs and also a decrease in application delivery time from 6 weeks to 3 days. It has enabled developers to focus more on end-user experience than fixing errors and bugs. The adoption of a container-based architecture also facilitates Havan to expand its offerings and services to drive a multichannel expansion strategy.

# Simply the Edge



5G and The Fog expand the edges of IT infrastructure further into the real world, making the digital twins of 'things' more realistic and smarter than ever

## Financial Services

### Metromile

Metromile Insurance and Ford have partnered up to directly connect eligible Ford vehicles with in-built connectivity for personalized car insurance. As one of the first connected car insurance partnerships, Metromile hands the control to the drivers to decide their pay per mile rate. Based on the driving practices and the number of miles driven, Metromile collects data from the cars to measure real-time risk and subsequently price the premiums, making car insurances fairer and more personalized. The offering doesn't require any additional device to be connected to the vehicle by the user. The potential savings for an eligible Ford owner can be as high as 741\$/year. While the users can currently file claims on Metromile's website or application or take help of their AI assistant AVA, the next innovation may see an automated claims initiation process through the connected car technology.

## Cross-Industry

### 51WORLD

Beijing-based developer 51World is creating a digital twin of China's most populous city - Shanghai. Its main objective is to help planners and engineers gain a deeper understanding of the city's varied processes and accordingly plan future developments. Designers and planners can run simulations on the clone and predict their actual impact before implementing the ideas. The virtual clone is being created by integrating satellite data, geographic information and data collected from drones and other sources. Upon completion, it will enable city operators to improve various services, monitor traffic flows, optimize energy systems and even undertake disaster management planning.

# Ops, AI Did it Again



AI comes to the rescue of complex IT operations, improving step-by-step efficiency and reliability while it learns, on its way to full autonomy

## Financial Services

### FiServ

FiServ, an American multinational providing payments and technology solutions, is leveraging Moogsoft's AIOps to streamline its incident workflow management process and offer quicker identification and resolution of IT Tickets. A series of mergers and acquisitions had resulted in a complex IT environment for FiServ, leading to significant support costs. In collaboration with Moogsoft, Fiserv implemented 50+ AI/ML algorithms to build a critical intelligence layer that enriches the data from its IT Service Management systems to accelerate issue resolution. A virtual collaborative workspace termed Situation Room was created which correlates significant alerts into a common pool of broader incidents and resolves them accordingly without raising tickets. Only critical and severe alerts are tagged as individual IT tickets. The AIOps solution also undertakes a root cause analysis to suggest probable causes of recurring problems.

## Cross-Industry

### EXPEDIA

Expedia Group leveraged BigPanda's AIOps to reduce complexity and improve the agility of its IT stack. Expedia used a hybrid cloud infrastructure with multiple monitoring tools and thousands of deployments in a single day. The company wanted to reduce its incident resolution time, free up resources involved in monitoring for undertaking innovation, lower deployment risk and achieve end-to-end visibility of its IT operations. By using AIOps, Expedia has achieved operational efficiency and improved its MTTR. Multiple correlated incidents were bundled and sent to the requisite person for resolution, thus shortening the support chain. With lower MTTR, developers and engineers can now refocus their time on features development, innovation and undertake projects that drive revenue.

# Ceci n'est pas une Infrastructure



Continuously build and deploy the next generation of software services, without even noticing infrastructure

## Financial Services

### AXA

AXA rearchitected its Telematics Exchange Platform (TEX) to a serverless infrastructure. The pay-as-you-drive insurance solution, handling 60,000 trips/day, was initially built in a traditional VM approach that required regular operational updates, advanced monitoring and manual intervention for scaling. AXA incorporated a range of AWS serverless services for the 4 main components of TEX - Compute, Messaging/Event Streaming, Relational Database and Document oriented database. Depending upon the necessity of services, AWS could take more or less responsibility, thus reducing the number of manual tasks. Simultaneous use of AWS Lambda and other serverless infrastructure allowed higher scalability and cost optimization while ensuring flexibility. The processing pipeline consisting of data ingestion, enrichment to supervision and monitoring was also simplified. The TEX architecture logic could be smoothly scaled based on the road traffic i.e. the variable cost would nearly be zero if there was no road traffic.

## Cross-Industry

### SKY ITALIA

Sky Italia, the Italian subsidiary of British-based media and entertainment company Sky, is leveraging AWS's serverless architecture to propagate real-time sports updates to its millions of customers. The upgraded architecture provided the company an opportunity to continuously scale its offerings without putting any strain on the infrastructure. It also enabled the company to drive enhanced data performance both during peak and off-peak times. In the absence of an on-premises data center, the company has also been able to achieve a 30% reduction in costs due to reduced maintenance and increase in efficiency. It now plans to engage information from multiple data providers within the same serverless system.



*Financial institutions need to have a well-defined strategy for cloud transformation, keeping in mind the execution challenges around IT complexity, cost, security, and skills. Of course, any conversation around cloud has to be centered around data."*

**Abhaya Gupta,**  
EVP, Global Head of Technology Practices,  
Financial Services SBU, Capgemini



# APPLICATIONS UNLEASHED

The new reality of a Technology Business demands application services to be built and delivered at high speed and in various incarnations; as close to the business as possible, yet responsive to every demand. For sure, these application services no longer resemble the applications we used to know, even the very notion of user interfaces is rapidly melting away. Although agile working through Minimum Viable Products is no longer the 'new normal', but the 'well and truly established', the quality of applications needs to be at enterprise level, as the trust balance of the organization is always at risk.

[Read TechnoVision Change Making for a complete overview of this technology container.](#)



# Applications Unleashed



## FS Implications:

Agility & Speed are becoming key drivers for transformation in Financial Services. Incumbents are finding it hard to compete with BigTechs and Fintechs as they carry complex and fragmented legacy IT landscape with high maintenance and operational costs. On top of this, Open banking regulation is building a new competitive landscape with easy access to data & insights through Open APIs. Simplification is one of the top priorities for banks & insurers. Fragmented employee & customer experiences, extremely high cost of change, inability to unlock business potential and stability (& scalability) of core systems are some of the key challenges that need urgent attention.

Banks & Insurers are using a range of techniques to renovate, rebuild, migrate legacy landscape weighing out on reuse, build, buy options. There are examples of vertical & horizontal modernization of legacy applications i.e. either driven by distribution, sales & service, product layers or driven by modernizing IT systems e.g. SAAS version of CRM. Significant investments are being made on integration & orchestration layers to drive agility across experience, process and systems through the use of standardized APIs. There is also an emphasis to move into Platform Operating Model, with Platform P&L ownership. In this case, platform owners will make sure the technology stack, release process, security, architecture & ways of working are aligned to organizational strategic priorities leveraging ecosystem partners & Fintechs.

## Key Trends:

- Super apps, defined as a closed app ecosystem consisting of social, financial, service and entertainment functions in one app, seems to have caught the eye in Europe and Americas. Widely successful in APAC, such apps, however,

are not a panacea, and are not suited for all markets. A careful examination of customer behavior, existing infrastructure and regulatory norms is essential to determine the feasibility and viability of such apps. [Tinkoff](#) became the first European bank to announce a super-app in December 2019.

- Financial institutions are moving away from a product-centric approach to a platform-centric one. While on one side we have players such as [DBS](#) facilitating multiple customer-facing marketplaces, on the other side, we have platforms such as the one offered by [Zelros](#) allowing insurers to provide advisors a streamlined experience throughout the policy lifecycle while delivering an automated experience for policyholders – driving digital transformation.
- APIs are the new building blocks for future-ready enterprises. To unlock the value of the API ecosystem, financial institutions can focus on legacy systems by using private, reusable APIs that enable employees to access system data faster without system knowledge or training and reduce third-party reliance. The [Barclays API Exchange](#) is a global API platform that helps to empower a global community of developers and innovators to access new products and services from secure, regulated third party providers via secure APIs.
- With customers stressing security considerations, the focus on DevSecOps has increased manifold. A DevSecOps approach can facilitate automated security at every point of a customer's financial journey. Instead of treating security as an afterthought during software delivery, DevSecOps integrates it into the full life cycle. It not only enables security while using Open Source but also accelerates digital business experience.

## Kondo My Portfolio



Tidying up the applications portfolio in a systematic, decisive way to open the floodgates of innovation, hyper-agility, and the next generation of powerful applications

### Financial Services

#### Zurich Insurance

Zurich Insurance has decommissioned more than 20% of its IT applications, simplifying its IT landscape. The complex and fragmented IT infrastructure had resulted in high maintenance costs and reduced operational efficiencies. Through application rationalization, Zurich reduced complexity and increased the level of sharing. It has been successful in achieving savings of 230+ Mn USD due to a reduction in maintenance cost and expenses associated with the legacy IT infrastructure. This has allowed Zurich to invest in new technologies and capabilities. Further, Zurich has migrated a significant percentage of its applications onto cloud leading to greater flexibility.

### Cross-Industry

#### Deutsche Telekom

Deutsche Telekom, one of the largest telecommunications providers in Europe, is leveraging Business Process Model and Notation engines to simplify its automation processes. It had deployed around 3,000 RPA bots to improve more than 450 processes which had made the automation system difficult to manage and scale. Though RPA had achieved significant savings to the tune of US\$113Mn, a single change in the main CRM system would lead to change requests on 4 different RPA platforms. The expertise on the processes was siloed and limited to a few developers who had initially written the code. Deutsche Telekom reinvented its automation by separating the processes from the technical layer through the development of a new platform, OREO. The seven RPA platforms previously used were consolidated into three and a centralized governance structure was set up.

## Bot is the New App



Providing compelling, conversational, frictionless access to application services, with the user's intentions at the core – not the application

### Financial Services

#### Sun Life

Sun Life Asia Service Centre India (ASCI) has launched chatbot Nina to offer quicker resolutions to employee queries and complaints. Amidst the pandemic-led lockdown and remote working, physical connect with customer support was a challenge for employees. Chatbot Nina supplements the customer support team by handling technology related queries associated with secure connectivity, hardware and conferencing tools. The growing millennial workforce of ASCI also provided the impetus for adoption of a virtual assistant to provide a seamless employee experience. Further, the conversational AI-based virtual assistant also freed up employees' time for routine work, allowing them to be involved in more strategic responsibilities. The first few weeks of launch saw Nina answering 3.87 questions/user. 74% employees termed their chatbot experience delightful or satisfactory.

### Cross-Industry

#### World Health Organization

World Health Organization, amidst the COVID-19 pandemic, had launched a Health Alert chatbot through Facebook messenger and WhatsApp. The WHO Health Alert platform provided 24/7 free and latest official information on COVID-19 to people worldwide. Powered by AI and NLP, users could use natural language to query about coronavirus precautions, travel advice, latest statistics and situation reports and receive prompt and reliable responses. The interactive service was multilingual, supporting the 6 UN languages and many more such as Hindi, Italian and Portuguese. The chatbot has helped dozens of governments provide accurate information to their citizens. During a pandemic, it is imperative that vital health information goes viral and reaches general public faster. Built as a pro-bono collaboration with Sprinklr under the WHO Technology for COVID-19 initiative, the chatbot has the potential to help protect 4.2 billion people across the planet.



# When Code Goes Low



Low-code and no-code platforms make building next-generation application services a high productivity matter, for both IT and business specialists

## Financial Services

### Société Générale

AVRly, a Do-It-Yourself tool developed by Société Générale's Global Solution Centre helps users create immersive AR/VR experiences without any coding. An individual can either build a new experience from scratch or use in-built templates to create augmented virtual and mixed reality content. Through this DIY tool, Société Générale aims to reduce the dependency on AR/VR experts and technical know-how and increase the adaptation of the technology. The tool can be used across domains such as branding, marketing, sales as well as to build training and learning modules. The user can create and share stories, design graffiti and messages in the virtual word cloud, create indoor navigation, etc.

## Cross-Industry

### VOLKSWAGEN

Volkswagen Group of America implemented Appian's Workplace Safety Solution built on its low-code platform to recall its staff post-lockdown. The solution prioritized the health and safety of workers while ensuring compliance with local health requirements. The low-code nature enabled quick deployment and easy configuration of the solution which was integrated into a central command structure for real-time visibility on employees' health and work status. Employees self-report their health status in a fast and easy-to-use mobile interface. Safe-to-return designations are then automatically and intelligently generated to be displayed in the respective mobile applications. The solution also includes features on incident case management, contact tracing and vaccine-related insights.

# API Economy



Manage APIs as the core asset that makes both the internal organization and the outside world fully benefit from your application services – and vice versa

## Financial Services

### HSBC

HSBC is co-creating a digital banking platform with MuleSoft's API Community Manager which has been built on Salesforce Community Cloud and Salesforce Service Cloud. The APIs will provide secure access to core banking products and promote innovation and collaboration with an ecosystem of partners and developers. By leveraging this API-led strategy, HSBC can turn its products such as mortgages, credit cards, payments into APIs in an application network and build new experiences. Tapping into the API economy, HSBC can connect with trusted third parties to offer a whole new range of services for its customers. Similarly, third party developers can use HSBC's API portal to access its Open Banking APIs. MuleSoft claims that building an API economy has led to 75% decrease in development time for HSBC.

## Cross-Industry

### Mercedes-Benz

Mercedes-Benz/developers! is a portal to support entrepreneurs, developers and programmers to build innovative solutions leveraging Mercedes' APIs, SDKs and vehicle-related data. These APIs carry detailed documentation and specification, a step-by-step Getting Started guide, benefits for the user and email support, if required. Developers have the option to try out the sandbox with mocked data, subscribe for the trial version to explore all the functionalities of the product or buy the solution. The portal also features an Inspire section for motivating users by showcasing various opportunities, success stories and use cases. Mercedes-Benz's APIs have been used by insurance providers and car dealers to enhance their customers' experiences. The platform now boasts of more than 6000 users across various domains and functions using Mercedes' APIs.

# APPS ♥ AI



Systematically infusing new and existing applications with AI capabilities, making them smarter, autonomous, valuable, with a positive impact on society and the environment

## Financial Services

### DBS

DBS is enhancing the capabilities of its existing digital banking apps by leveraging Artificial Intelligence and data analytics. DBS's iWealth app, which was launched way back in 2017, had seen a tremendous increase in online transactions during the peak COVID period. Cashing in on this opportunity, DBS is launching intelligent banking features such as data-driven understanding of client's investments leading to hyper-personalised market insights, pre-empting foreign currency needs, stock watchlists, etc. helping the customers make more informed financial decisions. The features will also include prompt-based intimations for financial transactions which can be performed via a single tap or swipe on smartphones.

## Cross-Industry

### Taco Bell

Taco Bell, the quick-service restaurant, is leveraging Artificial Intelligence to provide better personalized experience to its 5 Mn+ mobile app users. In partnership with Certona, an AI-powered personalization solutions provider, Taco Bell is offering region-specific pricing and menu items. Through customer behaviour analytics, the app showcases menu items and pushes promotion content relevant to a user's previous purchases and interactions. The personalized recommendation system built on Certona's AI engine also factors in weather conditions, day, time, etc. in addition to the products viewed by the user. Such personalization and engagements could help foster customer loyalty and boost sales in the highly competitive environment.



*Legacy Modernization is key to ensuring agility and speed of service by banking institutions, especially in a world disrupted by FinTechs and BigTechs. A platform-centric approach with Open APIs will help realize the benefits."*

**Nilesh Vaidya**

*EVP, Head of Banking and Capital Market Domain Consulting, Financial Services SBU, Capgemini*





# THRIVING ON DATA

No, Data is not the New Oil. If only because it has undisputedly become one of the biggest, content free clichés of the industry. In fact, if an enterprise has not already committed to being Data-powered by now, it may already be too late. Just like every Business has become a Technology Business so should every Enterprise now be a Data-powered Enterprise. Data - combined with the cloud - powers resilience, performance, innovation and transformative breakthroughs.

[Read TechnoVision Change Making for a complete overview of this technology container.](#)



# Thriving On Data



## FS Implications:

Managing consumer's financial situation involves the handling of large volumes of data and the right use of it; not only with the customer's own data, including personal or sensitive information, but also counter-party data, market data, or device data. A rising number of financial institutions have begun considering data as a strategic asset. That is reflected in the outward views of the leadership or senior executives. Those that have not, should immediately look towards building a data-powered enterprise, where data would be considered an enterprise asset – acting both as an enabler for technology as well as an asset for direct monetization. The contribution of big data in financial services has been immense in enabling implementation of new-age technologies. This has led the industry to produce simple, tailored, data-driven, and safe solutions. And with big data arises the requirement of a skilled workforce that can deal with it. In this regard, automated data analytics is used, in which computer systems and processes perform analytical tasks with little or no human intervention.

Conversations around ethical and sustainable AI and federated data analytics are becoming more prevalent in the financial services sector. According to a [study](#) by Capgemini Research Institute, the expectations for clear explanation of AI outputs is higher in sectors, including banking and insurance, that deal in high-impact decisions for customers such as credit sanctioning. On the other hand, federated analytics helps financial institutions gain insights from disparate data sources, without the data having to be necessarily maintained from a central environment. [Intel](#) is collaborating with [Data Republic](#) to develop a solution that allows financial firms to enact a secure discovery phase between datasets before applying federated analytics. However, insufficient investment in data governance, data architecture, and AI suite still plague the financial services world. Deep learning applications are finding ground in FS; from underwriting, portfolio composition and optimization, to model validation and offering alternative credit reporting methods.

## Key Trends:

- Technology Business executives unanimously believe that data will remain one of their most critical strategic assets. According to a Capgemini Research Institute [study](#), banking and insurance firms lead in data-driven decision making.

[Toucan Toco](#), a data story-telling solution enables businesses to democratize access to data, allowing stakeholders at all business levels to make educated decisions through a data story-telling solution.

- When it comes to the data estate, less is more. Data democratization plus rapid TCO reduction can be achieved through Data Estate & BI Modernization using cloud. Banks are showing strong trends towards moving away from legacy infra to data clouds.
- [DBS Bank](#) has been working on equipping more than 16,000 employees across all its 18 Asian markets with big data and data analytics skills. However, one of the most important ways banks will be able to use their data in the future is to train ML algorithms to automate many of their processes. RPA, united with intelligent automation, can accelerate retail bank processing efficiency, enhance compliance, reduce fraud, and boost customer service.
- A [study](#) by Capgemini Research Institute suggests that over-reliance on machine-led decisions without disclosure is the top ethical issue faced by executives in financial services. With AI systems transacting large number of financial instruments, assessing insurance claims, assigning credit scores, and optimizing investment, explainability, auditability, and ethicality of AI have become important.
- While the use of data as an enabler is picking up significant speed, a less explored aspect is its direct revenue-generation potential. While consent management can prove to be a hard nut to crack, if perfected, it opens up multiple avenues for monetization of data. Realizing this, Capgemini and IDC jointly launched a [Data Monetization Framework](#) allowing organizations to explore 7 different monetization strategies.
- Data interoperability enables coordinated services in health insurance. Interoperability is designed to maintain patient confidentiality, reduce healthcare costs, and focus on personalizing patient data. [Health Gorilla](#) has moved into health insurance, aided by the introduction of fast health interoperability resources (FHIR)-based APIs, for more seamless data sharing.



# Crazy Data Train



Data is the strategic asset – and it needs to be managed as such, by deeply understanding its sources and destinations, and mastering all ways of the enterprise to activate at the very heart of the business

## Financial Services

### ANZ Bank

ANZ Bank uses the Data Republic Senate platform to control data sharing and to accelerate data partnerships. The Senate platform provides a full arsenal of tools to simplify this process, from data access controls, governance workflows, to shared analytics workspaces. This aids ANZ hedge commercial risk and protect customer privacy. The platform excludes personally identifiable information (PII) and hence, data sets can be matched without exchange of customer information. The Senate platform can also control the visibility of these data sets to internal and external stakeholders, manage data requests, and control data-provisioning licensing terms. The platform has enabled a 93% reduction in time to create a shared data asset and 4x more shared relationships.

## Cross-Industry

### Covid-19 Data Exchange

COVID-19 Data Exchange is a pro-bono initiative built as a collaboration between Microsoft, Dawex, France Digitale and AI for Health. The initiative aims to facilitate COVID-19 related data accessibility among scientists, researchers, and public and private organizations. Participants can source, publish and exchange non-personal data while being assured of confidentiality, traceability and security of their information. The platform also leverages blockchain features to protect the integrity of private and open data contract licenses. The participants are strictly vetted before being allowed to be a benefactor of the data exchange platform. The users have complete control over whom they want to share their data with and can also track the data flows.

# Power to the People



A lack of specialized skills, the need to activate the data as close to the business as possible - and some powerful AI and automation – are igniting the self- service data revolution

## Financial Services

### ABN AMRO

ABN AMRO has democratized its data to enhance its employee productivity and customer experience. The bank used to work from two centrally managed data warehouses with data siloed across few departments. There were gaps and discrepancies in data between the IT department and business users. ABN AMRO used a business tool Trifecta that enabled customers and employees to access, work and create value from data quickly while ensuring that the data architecture is GDPR compliant. The point-and-click interface and ML-powered intelligent suggestions of Trifecta tool made it easy to understand and use. It also freed up dependency from data scientists who could now focus their efforts on value-added activities than mundane tasks of report creations.

## Cross-Industry

### XL AXIATA

XL Axiata, Indonesia's second largest telecommunications provider, is using Cloudera platform to improve the scalability, flexibility and accessibility of data. The solution aims to achieve data democratization and undertake data-driven business decisions to reduce time-to-market for the company's products and services. An AI-based self-service conversational tool answers data-related queries from business users to technical personnel in a matter of 5 seconds to 1 minute depending upon the complexity of the question. In-built AI/ML-based algorithm helps users to undertake factor analysis and derive insights in a matter of seconds. The ability of business users to instantly access data anytime anywhere reduces the dependency on IT. This was particularly useful during the social restrictions put forth by COVID-19 as it avoided data expertise being siloed to few users.

# Good tAlmes



As the currents of business become less predictable and erratic AI solutions require to become transparent and clear as water, executives and customers steer away from dark places and towards AI that illuminates the company purpose

## Financial Services

### Commonwealth Bank

Commonwealth Bank is using Big Data and AI to help its customers navigate through the financial difficulties set in by the COVID-19. The bank's Benefit Finder program matches customer information and data points to various rebates offered by the government. Australia has more than 300 rebates and benefits and the program makes sure that the bank's customers do not miss out on any of them. More than a million customers have used Benefit Finder to begin their entitlement process. During Australia's bushfires, Commonwealth Bank pre-empted the probable affected areas to provide emergency assistance packages much before the tragedy struck. Another solution of the bank, Bill Sense, uses advanced machine learning to drill down into customer's various bills and suggest them alternative economical measures to reduce their expenses during the pandemic.

## Cross-Industry

### Salesforce

Salesforce's Einstein Discovery, built to find patterns in user data, also carries a feature to avoid data-driven biases. The admin can indicate sensitive fields in the data while the solution searches for proxy variables which are highly correlated to the said field. The variables are then flagged by the solution for admin's review. For instance, ZIP codes for loan application in US may be highly correlated to race, which could result in biases in loan eligibility processing. An admin can then decide if he/she intends to include or remove those fields and variables from the model. Salesforce's solutions are also backed by a learning platform - Trailhead - which offers learning modules for customers to create ethical AI systems in their companies.

# Data Apart Together



If the organization is distributed and data is everywhere in- and outdoors, it is best to manage data in a federative way - balancing local ownership and a central platform drive

## Financial Services

### Temenos

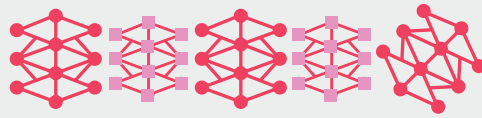
Temenos has launched an end-to-end corporate lending platform that not only automates manual processes but also connects siloed legacy systems to derive insights from data. The solution specifically automates and streamlines the complete loan lifecycle - from pre screening to credits risk assessment, underwriting, administrative processes, acceptance and closing. A reduction in IT complexity increases the operational efficiency and enhances transparency in the loan process. Consolidating all the disparate processes allows banks to build a centralized data platform which enables the different teams to access the right data at the right time. The data can then be leveraged to create real-time analytics dashboard and draw insights to make smarter decisions.

## Cross-Industry

### Institut Pasteur

Owkin, a French-American start-up that builds and implements artificial intelligence and federated learning technologies for medical research and accelerated drug development, has partnered with Institut Pasteur. Institut Pasteur is looking to develop a new machine learning model that can identify not just COVID-19, but any coronaviruses, and protein sequences (known as epitopes) that have high immunogenic potential. The performance of the ML models shall be benchmarked with existing models that do not take into consideration the critical biochemical properties of such epitopes. Institut Pasteur is leveraging Owkin Connect, a secure, traceable technology that runs on federated learning and allows clients to connect with other research centers in the Owkin network. The technology allows data insights to be collectively shared, all the while maintaining privacy of patients.

# How Deep is Your Math



Challenge everything you've tried so far with analytics and algorithms, AI brings alternative, awesome ways to solve problems

## Financial Services

### Tokio Marine

Tokio Marine, a Tokyo-based P&C insurer, is using deep learning for computer vision to process auto damage insurance. The AI solution looks at the photos of damaged vehicles in near real-time, and provides recommendations on available repair options, paint and blend operations as well as the expected number of labour hours required. The solution has reduced the claims processing time from days to minutes by reducing inefficiencies in the process and ensuring that customers are back on the roads faster. The deep-learning based AI is trained on millions of photos of car damage and has the ability to self-learn from experience by analyzing a large variety of different examples.

## Cross-Industry

### Honda

Honda's Alabama manufacturing facility is leveraging machine learning and IoT to make use of the data generated in the plant's varied processes. Predictive analytics helps the plant pre-build models, manage wear and tear of equipment and also monitor environmental sustainability. Honda has been successful in reducing MTTR by 70% through visualized metrics and contextual data-driven insights. Further, reducing data siloes enables employees to work collaboratively and resolve problems faster. By leveraging IoT, Honda ensures safety and quality standards of its different components along the assembly line. The facility also undertakes predictive maintenance to reduce equipment downtime.



*Without a doubt, financial insitutions should consider data as a strategic asset and build solutions that are essentially data-driven. Firms need to make concerted efforts to build an effective data architecture and governance model to reap the benefits."*

**Ramana Bhandaru**

*EVP, Insights & Data, Financial Services SBU, Capgemini*



# PROCESS ON **THE FLY**

As we all know, a high IQ is not always a recipe for crushing success. In the end, it's all about execution. Corporate speed depends on the ability to turn insights into action, to quickly respond to events, to overcome business silos, to seamlessly ride the waves and to rapidly change our ways if circumstances so dictate. This is where process management needs to deliver; to be fluid, agile, reactive and yet proactive, and able to self-adapt to weather every storm.

[Read TechnoVision Change Making for a complete overview of this technology container.](#)



# Process 101



Creating a deep understanding of corporate processes as a prerequisite for simplification, standardization and – ultimately – intelligent automation and innovation

## Financial Services

### Dollar Bank

Pittsburgh-based Dollar Bank digitized its end-to-end documentation process by leveraging Argo's Paperless Processing solution. Argo is a provider of technological and analytical-sciences software for Financial Services industry. Dollar Bank's initiative eliminates manual handling and printing of documents, thus streamlining and digitalizing the documentation process. This, in turn, enhances its process delivery and the capabilities of its front-line bankers. The solution's features include automatic generation, management and storage of documents, integration of e-signature, data capture at checkpoints, etc. Through better workflow management driven by digitalization, Dollar Bank can facilitate regulatory compliance, and eliminate errors and geographic constraints.

## Cross-Industry

### U.S. Food And Drug Administration

The U.S. Food & Drug Administration (FDA) digitized thousands of health files and 2 dozens forms with 120+ complex fields which were archived for 30 years. FDA leveraged Abbyy's Digital Intelligence Platform for extracting critical data from the archived documents at 99% accuracy and connected them to the right processes. Vital data is also extracted from current documents to ensure accurate reporting of any adverse events. The access to real-time data enabled FDA to have comprehensive visibility of its current processes and drive insights from its operations. Digitization and transparency in processes was imperative for FDA to drive future automation.

# Rock, Robot Rock



Robotic Process Automation (RPA) delivers quick process benefits without elaborate and troublesome re-engineering

## Financial Services

### Bajaj Allianz General Insurance

Bajaj Allianz General Insurance is leveraging RPA technology to improve its operational efficiency and stability. Its RPA-based bot 'Raftar' has led to a 60% reduction in policy issuance processing time. Employees used to manually prep unstructured data related to insurance policies and allocate work to processing hubs. RPA has automated this process of manual cleansing and work allocation leading to increase in efficiency. With data being collected from various portals, an RPA enabled system provides an error-free summary output to relevant stakeholders. Additionally, the RPA-based bot facilitates the crop insurance policy issuance process which is connected to crop quality check. The bot issues policies sequentially based on the validation it receives from the crop quality check process.

## Cross-Industry

### Coke Canada

Coke Canada is implementing RPA to automate its back-office processes and reduce its dependence on external IT support. An intelligent automation team created RPA bots that have automated 11 processes within a year saving 7500 employee hours. The bots which have been named Homer, Indiana, Yoda and Hulk have also led to an increase in accuracy of back-office operations, risk reduction and better compliance. Some of the automations include uploading paperwork for EPA regulatory compliance which reduced handling time by 95%, managing and tracking product sampling requests which led to a saving of 1600 employee hours.





## Pleased to Meet You, Process



Busting corporate silos by adding flexible process layers on top of them, rather than break solid, established structures

### Financial Services

#### Royal Bank Of Canada

To provide world-class wealth management services, Royal Bank of Canada leveraged MuleSoft's Anypoint Platform to connect data and information present in siloed legacy systems, shifting from manual paper-based processes to an automated API-based platform. RBC built reusable APIs such as Documents API, Risk API and Accounts API that integrated siloed data present in the bank's client database, legacy systems, on-premises and cloud database. Connecting data from different sources allowed the bank to build single customer view and provide better financial advice. Advisors can access signatures, verify identity and monitor progress, all in one interface. With digitization of account opening process, clients are onboarded in 24 minutes instead of weeks. It also led to a 50% reduction in maintenance costs.

### Cross-Industry

#### Inserm

The Institut National de la Santé et de la Recherche Médicale (Inserm), France's National Institute of Medical Research, broke down data siloes to allow its researchers and scientists access to critical medical data. The solution, built in collaboration with Informatica, automated the cataloguing and indexing of large data sets after pulling them out from cloud-based and siloed legacy systems. The curated data sets can be then accessed by researchers of all technical levels through a simple dashboard. Building an integrated data system was critical for Inserm as it was conducting COVID-19 vaccine trials which required matching patient information, vaccine details as well as data shared from other organizations.

## Can't Touch This



A process seamlessly adapting to its environment, optimizing itself without human intervention – is that even a process anymore?

### Financial Services

#### Willis Towers Watson

Willis Towers Watson launched an automated solution, ResQ Financial Reporter, that reduces manual processes for IFRS 17 implementation by P&C insurers. IFRS 17 standard has been one of the most complex changes in insurance reporting requirements in recent times; insurers have been behind on its enforcement. The solution integrates with the incumbent systems and undertakes an end-to-end implementation of IFRS 17 obligations in an economical and timely manner. ResQ Financial Reporter provides a flexible and intuitive user interface for the analysis, review, validation and sensitivity testing to deliver IFRS 17 insurance contract liabilities estimates and financial statements. By taking the complexities out of the process, ResQ Financial Reporter enables insurers to focus on more value-added core activities.

### Cross-Industry

#### Her Majesty's Revenue And Customs

Her Majesty's Revenue and Customs (HMRC), a UK government department used Pega's Intelligent Automation and Robotics solution to automate the claims validation process of government's COVID-19 initiatives and remove any requirement of manual intervention. The government had launched 4 COVID-19 plans for individuals and businesses applying for support. By mid-2020, the volume of claims had reached 3Mn+, requiring the need of digital processes to handle the demand and prevent fraud. The implemented system stopped payments on identification of risk while ensuring quicker disbursement to others. A quick deployment of the solution ensured public officials received requisite support in time to manage the surge in volume.

# Augmented 101



Adding AI to business operations speeds up decision-making and creates the symbiotic relationship that brings humans and AI closer together

## Financial Services

### MetLife Insurance Japan

MetLife Insurance Japan has launched an AI-based fraud detection system termed Force to augment examiners to discover fraudulent claims. Fraud detection in insurance claims were handled by specially trained staff to balance speed and efficiency with precision. But, with a surge in claims volumes, fraud detection became a laborious task. Force, powered by AI machine learning, leverages vast amounts of historical data such as previous frauds to quickly and accurately identify suspicious claims. However, complex cases, beyond the purview of the current AI, are still handled by skilled examiners, thus improving the overall fraud detection efficiency and accuracy. Use of AI-based fraud detection system has not only reduced the requirement of time and resources, but has also improved customer service and protection.

## Cross-Industry

### AIR FRANCE

Air France is using Open Airlines' "Sky Breathe" technology to undertake more fuel-efficient flight operations. The technology leverages big data, AI and Machine Learning algorithms to automatically analyse planes' communication data points. It then combines the collected data with the flights' real-time data such as weather and load conditions to identify the most relevant fuel-saving opportunities. The fuel-efficient measures, such as reduction in flight altitude, are communicated to the pilots to incorporate them in their real-time flight operations. The in-depth analyses and reports can also be accessed by various stakeholders through a mobile application. "Sky Breathe" technology saved around 150 Mn\$ in fuel costs corresponding to 590,000 tonnes of CO2 emissions across various airline companies in 2019.



*Creating a deep understanding of domain processes is a prerequisite for simplification, standardization and – ultimately – intelligent automation and innovation."*

**Ian Campos**

*EVP, Global Head of Technology Practices,  
Financial Services SBU, Capgemini*



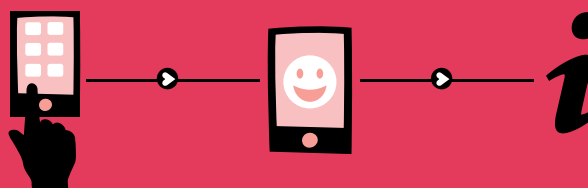
# YOU EXPERIENCE

User experience is at the heart of intimacy between an enterprise and its audience, whether they are customers, employees, or partners. And it is quickly moving different places, as preferences, players and positions change on a minute-by-minute basis. This is exacerbated by the accelerated move to online, 'no-touch' channels. Not an easy environment to build a solid understanding of what is driving the user it seems, let alone to develop a deep, mutual, emphatic relationship.

[Read TechnoVision Change Making for a complete overview of this technology container.](#)



# You Experience



## FS Implications:

The pandemic has accelerated the shift to embrace digital with rapid changes in consumer behaviour and consumption patterns across all geographies. Cash to digital payments, frictionless customer experience (CX) with increased use of biometrics, lifestyle priority changes (such as focus on savings and safer investments) are a few examples. The way financial institutions handle the new customer expectations is going to influence consumer loyalty. Extended Reality, immersive technologies, humanized conversational interfaces and intelligent banking can enable hyper-personalized, compelling 'you' user experiences that drive signature moments at which users feel their intentions are fully understood – without the need to express them elaborately.

But to successfully achieve hyper-personalization goals, financial institutions need to acquire and integrate real-time data capture and analysis capabilities to their CX offerings. Customers expect fast service and real-time response to their needs, delays in which may erode long-term confidence. [Guidewire](#), in collaboration with Shift Technologies, integrates data from varied sources to offer insurers real-time fraud detection and claims automation capabilities. CX improvements also need an engaging front-end augmented by modern, resilient, agile and compliance-centric middle- and back-office operations. Layering of new business models on old, adopting quick fixes in place of redesigning systems and lack of operations visibility have hampered end-to-end optimizations. Through a collaboration by design approach, financial institutions can draw a customer-led transformation map to identify middle- and back-office operations with highest impact on CX and prioritise them. They can then leverage the expertise of FinTechs to derive competitive advantage from their CX processes. Due to their data-centric design, mobile-only model and an agile structure, digital natives such as PayPal, Venmo, Paytm are uniquely placed to offer superior CX.

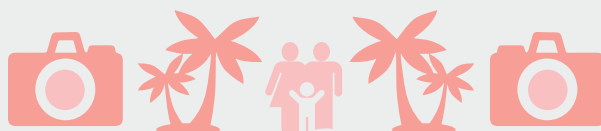
## Key Trends:

- Customers expect a consistent and seamless multi-channel experience. They should be able to access up-to-date and real-time information irrespective of the platform. A true multi-channel experience allows the customer to switch channels at any point in their journey without losing information. [Bank of America](#) has committed to provide a consistent customer experience irrespective of the device interface.

- A blend of digital connection and emotional intelligence is becoming more critical and tech firms are enabling traditional financial firms to create human-like connections with consumers. [Verisk](#), a British InsurTech, provides users a set of tools to make an informed 'emotionally intelligent' decision
- There is a push to move beyond personalization to offer real-time hyper-personalized offerings tailored to individual customer's needs. [Starling bank](#), a UK-based FinTech, reduces customer response wait time by categorizing their urgency and nature.
- Digital assistant-enabled marketplaces are storming the financial services market. Voice-based payments are not only aiding 'you' experience but are also used by financial institutions to improve brand image. This is particularly beneficial for customers affected by visual impairments. Voice being as unique as fingerprint can power multi-factor authentication. [Amazon](#) is experimenting with Alexa-powered P2P digital payments platform.
- The merging of digital content with reality through AR/VR leads to enhanced security features, better data visualization, creating virtual workplaces, and virtual education. [Westpac Banking Corporation](#) provides AR-based financial data visualization and budgeting through its smartphone application.
- Connected devices powered by IoT can fuel open banking features such as Internet of Payments and enable more tailor-made services and possibilities. Insurance companies such as John Hancock & Beam Digital are driving healthier practices through connected wearables.



## Signature Moments



Using technology for better understanding of the customer's journey – creating the magical, standout moments that form a long-lasting connection with your brand

### Financial Services

#### Morgan Stanley

Parametric Portfolio Associates, acquired by Morgan Stanley from the Eaton Vance deal, is positioned to redefine the future of investing and direct indexing for institutional investors and wealth managers. Parametric offers customized Direct Indexing or custom Separately Managed Accounts (SMA) that extend the opportunity to introduce factor tilts, blend benchmarks, manage taxes, views on responsible investing etc. rather than simply accessing underlying securities in the portfolio. Parametric's modelling enables investors to build a portfolio of individual companies' securities as well as holdings in charitable institutions in their SMAs which can be managed based on the investor's tax strategies. The acquisition will allow Morgan Stanley to develop agile investment solutions and respond quickly to changing market conditions more than ever before.

### Cross-Industry

#### Porsche

Porsche Track Your Dream (PTYD) builds on the anticipation of the customers to let them track their new car, from production to final delivery. Buying a Porsche car is a personal and special moment for many, akin to a dream. PTYD ensures that the customers are also associated with the making of their car before they see it for the first time. "Behind the Scenes" service in the My Porsche Portal provides customers a visual access to the car's production in Porsche's factory. Upon placing an order for a 911 sports car or a Taycan, the customer receives an email invitation to track their car's journey in My Porsche portal. The customer is able to track through 14 milestones which includes production updates, vessel departure from Germany, port entry in USA etc. PTYD also provides background information on each milestone and is accompanied by a progress countdown in miles and days.

## Reality Bytes



An engaging mixed reality environment potentially makes for far more compelling, effective interactions between man and machine

### Financial Services

#### UBS

To make work from home more comfortable and unchallenging for its traders, UBS is exploring the option of using virtual reality platforms. UBS has issued Microsoft's HoloLens to some of its London-based traders. It creates simulated experience of a full trading floor from their homes. The VR unit is head-mounted and uses multiple sensors and advanced optics to display information and images in the real world. With staff returning to office amid the COVID - 19 pandemic still being a safety concern, the VR simulation has the potential to combine the goodness of an office-like environment with the safety of home.

### Cross-Industry

#### KOHL'S

Kohl's, an American clothing retail chain, partnered with Snapchat to launch a new digital showroom experience using Augmented Reality. Kohl's AR Virtual Closet in Snapchat recreates the in-store experience for the customers by allowing them to explore through an assortment of Kohl's products from the safety of their homes. Customers can also mix-and-match with Levi's outfits and try out few trends with the Selfie Lens capability of Snapchat. Customers need not switch apps for checkout and can purchase these products within Snapchat. Kohl's and Snapchat share a similar customer segment of millennials who use the social media platform's AR feature extensively. This makes Kohl's AR Virtual Closet an engaging offering for the Snapchat community.

## Own Private Avatar



Creating an active, well-aligned marketplace of digital assistants that can act on behalf of customers, employees and organizational entities

### Financial Services

#### Sterling Bank

Sterling Bank has launched its financial assistant Kiki which provides personalised services for existing as well as prospective account holders. Built in collaboration with Clickatell, a global chat commerce solutions provider, customers can leverage WhatsApp to pay bills, initiate bank transfers, airtime top-ups as well as generate statements. The avatar Kiki possesses conversational intelligence and can also answer questions related to personal finances. It can directly connect the user to customer service representative making dispute resolutions seamless. The use of a financial assistant such as Kiki eases the stress of moving between various apps for completing a transaction.

### Cross-Industry

#### L'Oréal

L'Oréal designed a backend customer service program, Inside, to train customer service representatives in dealing with online customers. With L'Oréal facing a boom in its e-commerce sales, the company intended to increase the usage of live chats to help out customers. The Inside program created a digital rendering of a store with customers being represented as varied digital avatars. Each avatar was associated with a face, a mood and a colour depending upon their location in the customer shopping journey. For instance, a blue-coloured avatar is a first-time customer while yellow refers to a return visit. This trains customer representatives to tailor their conversations by pre-empting customers requiring urgent assistance or who have a higher conversion probability

## I FEEL FOR YOU



Boosting both the individual and corporate EQ, in order to create a more effective, meaningful and satisfying symbiosis between man and machine

### Financial Services

#### HDFC ERGO General Insurance

HDFC Ergo General Insurance Company is employing behavioural sciences resources to make its AI models and bot-driven communications more empathetic and humane. It openly communicates to the customer during a problem resolution if he/she is conversing with a bot or a human customer representative. This, the company believes, creates a different brand image in the minds of the customers. HDFC's NLP based algorithm in association with behavioural sciences resources analyses customer emails which may be complex and blurred to identify the core context and provide an appropriate response. Use of AI also removes potential human biases that may creep in during human-to-human communications with customers.

### Cross-Industry

#### Elomia

Elomia is an AI-driven virtual companion launched during the pandemic to offer people respite from self-isolation, depression and anxiety. Built by psychologists and AI experts, Elomia uses Cognitive Behavioural Therapy (CBT) to provide 24/7 psychological support, mostly to people who can least afford a psychotherapy session. The chatbot works on the Facebook Messenger platform, but just like doctor-client privilege in real-life, Elomia does not access the user's Facebook profile. It understands the context of the conversation to offer responses that make users feel better after the conversation. In fact, 91% of the 432 surveyed who used the beta version of the application claimed to experience a mood boost after their first usage. Elomia has now offered help to 43K+ users.

# No Friction



Autonomous technology can create a user experience that is so fluent and adaptive, it's almost not experienced anymore

## Financial Services

### Wells Fargo

Wells Fargo's new trademark technology Advanced Listening goes beyond the traditional use of chatbots and virtual assistants to provide a frictionless customer redressal experience. The American multi-national has given the power to the consumers to choose their modes of communication with banks - email, text, phone call, survey response, online interactions etc. The system then leverages Artificial Intelligence to analyse every interaction to uncover any widespread issues, trends or a spike in complaints. The company tries to pre-empt potential issues and attempts to solve them before the customer reaches out. The system can automate responses to high-volume, low-risk complaints or directly notify the management of a severe issue that needs to be resolved. It also guides the customer representatives to intelligently deal with customers by anticipating their problems and understanding the context in advance. This ensures that the customers do not have to undertake the arduous task of explaining the issue in detail.

## Cross-Industry

### H&M

H&M Mitte Garten, situated at the heart of Berlin, is empowering frontline workers to deliver hyper-personalized moments for customers. The needs of the in-store customers are detected in a very efficient and surprisingly silent manner by the staff at H&M Mitte Garten through the use of connected bracelets. The flagship store has been equipped with sensors, buttons and screens at appropriate places, which the customers can interact with for any assistance. The employee receives these real-time requests at his/her bracelet enabling faster redressal without the customer physically reaching out, creating a truly frictionless assistance process. The frontline workers can also access promotions, latest style trends and merchandise updates on-the-go ensuring that customers always receive complete and accurate responses. The store is also equipped with an endless aisle solution for customers to explore assortments unavailable in the store and create their own styles.



*The accelerated call for hyperpersonalization and more engaging customer experience due to the pandemic comes with FS customers expecting fast and real-time service. With BigTechs disrupting the industry, financial institutions need to quickly ramp up their digital capabilities."*

**Pierre-Olivier Bouée**

*EVP, Global Sales Officer, Financial Services SBU, Capgemini*

An abstract graphic featuring a series of white, wavy, vertical lines that create a sense of movement and depth. Overlaid on these lines are several overlapping circles and shapes in shades of brown and orange, including a dark brown circle, a light orange circle, and a large dark brown shape at the bottom that resembles a stylized head or a large letter 'C'.

# WE COLLABORATE

The need for humans, organizations and nowadays, 'things', to engage in a formless, portable and resilient way is imperative, unstoppable even. The legacy collaboration systems of yesteryear have entered their well-earned final resting place at the bottom of the corporate ocean, and in their place a new vision of collaboration has emerged; flowing through old barriers and floating between 'compete' and 'collaborate'. With all becoming intimately networked with superior, simpler and ever-more ubiquitous technology and an abundance of social platforms, it's time to tap into the phenomenal power of the collaborative Technology Business, even as connections and entire ecosystems are seemingly changing overnight.

[Read TechnoVision Change Making for a complete overview of this technology container.](#)





# We Collaborate



## FS Implications:

On one side, FS organizations are ramping up their efforts towards digitization of products and services to improve customer experience and engagement, while on the other, they are intensifying efforts towards ecosystem collaboration to develop new business models. 'Banking as a Service' model is on the rise, with banks collaborating with third parties (e.g. BigTech) to function as their distribution channel partners, and to acquire and retain the customer base. A similar trend is seen in the insurance sector, in which cross-industry collaboration (e.g. insurance-automotive) is being explored to build new propositions for customers. Emerging tech and new agile ways of working have been drivers for uptake in collaborative business models. Of course, the COVID-19 pandemic has helped accelerate these efforts.

When it comes to ways of working, hybrid working models are now mainstream, powered by digital connectivity and collaboration tools and techniques. Consumers and employees can now communicate and collaborate on channels of their choice. Advancements in 5G will accelerate the adoption of IoT and Edge technologies, providing increased access to data and reducing latency for real-time transactions. Technology advancements and maturity of Distributed Ledger Technologies (DLT) including blockchain and open source is helping rebuild various trust models. We have seen DLT driving uptake in digital currencies in various forms such as Central Bank Digital Currency (CBDC) and different types of cryptocurrencies. Tokenization of assets is another area in which the world will use the power of technology to collaborate, revolutionizing the way we trade, especially in non-fungible assets such as art, real estate, in-gaming assets, etc. Push for sustainability and ESG goals are also likely to drive increased industry collaboration through utilization of tech and data.

## Key Trends:

- According to a [study](#) by the Capgemini Research Institute, more than 80% of financial institutions surveyed said that they had used a fluid workforce over the past year. Firms use it to combine internal and external resource pools to achieve flexibility and adaptability that could open new business opportunities.

- More conversations are happening on DeFi (decentralized finance) focusing on industry applications through smart contracts (for process efficiencies). A decentralized blockchain financial system would help increase collaboration and cooperation among not just financial institutions but also private and public players in the industry, including the regulators.
- Maturation of crypto-currencies and CBDCs will fuel innovation in decentralized finance. With rise in institutional investments in crypto-currencies, banks have an opportunity to create new value propositions such as digital asset custody. [Standard Chartered Bank](#) launched a crypto-currency custodian solution in partnership with [Northern Trust](#).
- Before the commercial roll-out of 5G services, Telcos such as [Telefónica](#) are forming corporate liaisons to extend 5G services to office premises as an alternative to the existing wireless internet infrastructure. Vodafone Qatar has provided [Qatar Islamic Bank](#) access to its state-of-the-art GigaNet 5G network.
- Tokens on blockchain platforms can represent specific contributions toward the UN sustainable development goals (SDGs), which are registered on a blockchain platform and can be tracked along a supply chain. This could be used by financial institutions for more efficient and standardized disclosures of ESG compliance standards.
- Generative Adversarial Networks (GANs) could be of great potential in financial services due to its security uses. It can be used for detecting fraudulent financial behavior, doubtful transactions, and early detection and prevention of cybersecurity threats.

# The Team is the Canvas



Leveraging teams-oriented workspaces for collaboratively creating joint business results

## Financial Services

### PayPal

PayPal, the online payments solutions provider, strengthened employee collaboration and reduced data siloes by leveraging Microsoft Teams. While 89% of PayPal's employees were inclined to be a part of a collaborative culture, 61% had felt the need for better collaboration tools. The previously used mixture of on-premise and cloud-hosted communication tools limited international collaboration and restricted innovation. PayPal decided to unify its global communication through a single collaboration platform built on MS Teams. It undertook a change management strategy to understand region-specific work culture and communication styles before transitioning completely to the Teams platform. By restructuring the way meetings were scheduled and conducted, PayPal significantly reduced unwanted screen time and enhanced productivity and collaboration. Using Teams features and Power BI, PayPal also standardized the way reports were visualized and documents were stored. This, the company claims, has saved an employee around 30-60 mins of working hours per day.

## Cross-Industry

### Honest Burgers

Honest Burgers, a British restaurant chain, ensured that its employees stay connected with the company while undertaking some of the most difficult business decisions during the COVID-19 pandemic. Honest Burgers furloughed a significant number of staff as the chain shut down its outlets. The leaders and founders apprised the employees about the business difficulties via Workplace's live video streaming. To ensure that employees remain connected and engaged during the lockdown, community driven content, from HIIT classes to pub quizzes were hosted on the Workplace's platform. Some of these classes were directly run by the founder. Workplace's bot tool, which was synced with the restaurant chain's HR systems, answered employee queries on wage retention plans offering replies specific to their incomes. It also provided information on job opportunities and advised on earning potentials during the pandemic. The company also incorporated its learning management system on the platform. Thus, furloughed staff can also log on for work-related training as well as for personal development including sessions on finance and mental health.

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# Fluid Workforce



Adaptive orchestration of skills to beat complexity and thrive on unpredictability

## Financial Services

### National Australia Bank

National Australia Bank is adopting people analytics to identify high performing individuals and teams and drive better employee experience for its 40,000 strong workforce. It undertakes regular employee status reporting and collects feedback to understand the quality of customer experience. Through automated analytics and better workforce management, the bank ensures it has requisite resources on the frontline to support its customers. The talent team used data to redeploy 1000+ employees with support experience into direct customer support roles in very short time. The bank also realized that branches with motivated employees provide better CX, contributing around \$1Bn to its profits. It is also using analytics to increase the retention rate of its new hires and accelerate their time-to-value for company. People analytics has reduced attrition for call center employees by identifying workload indicators and helping the bank build an agile workforce.

## Cross-Industry

### Money Penny

Money Penny, a UK-based agency handling outsourced calls and chats for thousands of companies, used a bot for smooth transition of its workforce to remote working within a short time. The onboarding virtual assistant inquired the staff about their new work environment, hardware and internet speeds. The company sent out hardware packages to employees who didn't have the necessary support. Created in collaboration with The Bot Platform, the assistant accelerated the transition of its workforce to long-term remote work. Money Penny also created a very interactive "How are you doing" bot to check on employees' health and well-being. Around 75% of employees responded to the survey floated by the bot within 24 hours. This helped the company ensure that the staff has adopted the operational changes for delivering quality customer service.



## New Chain on the Block



Using distributed ledger technology to drive next generation trusted business ecosystems

### Financial Services

#### Credit Suisse

Credit Suisse is using Paxos Settlement Service to settle U.S. listed equity trades. While the efficiency and speed of stock trading have improved considerably in the past few years, settlement still remains slow. Stocks and cash move through a counterparty that acts as an assurer for the equity settlement to materialize, and it typically takes 2 days. Further, post-2008 regulations have made liquidity requirements stricter for settlement obligations, adding to the opportunity cost of institutions. Paxos is leveraging blockchain technology to digitize cash and securities stored in the accounts of Depository Trust & Clearing Corporation, ultimately making equity settlements faster and cheaper. Using a smart contract that works autonomously, the digitized assets are instantaneously transacted between the counterparties. The records of the transaction are maintained in a blockchain ledger. In addition to reducing the settlement time from 2 days to less than a day, smart contracts do not require a central party as securities and cash are exchanged at the same time. The cost of holding provisions in case of settlement failure also decreases.

### Cross-Industry

#### PharmaLedger

PharmaLedger is a blockchain-enabled healthcare consortium of 29 members that includes 12 global pharmaceutical companies and 17 public and private entities across technical, legal and regulatory domains. The consortium aims to design and develop blockchain-enabled solutions, focused on, but not restricted to 3 healthcare domains - supply chain, clinical trials and health data. The consortium has been exploring use cases on reduction in counterfeiting, electronic product information, finished goods and supply chain traceability, among many others. Novartis, a leading member of the consortium, has recently developed an application through which patients can scan codes on drug leaflets to request up-to-date information from the manufacturer. The blockchain ledger ensures that the patient receives the correct product information while protecting patients' health information. PharmaLedger is also planning to leverage this solution to combat counterfeiting of medicines. The highly scalable blockchain-centric platform of PharmaLedger enables industry wide implementation of various use cases.

## Use the 5G Force, Luke



Tapping into the potential of 5G networks to create brand new, highly collaborative business propositions

### Financial Services

#### AON

Aon New Zealand is collaborating with Spark to connect its business over 5G. Spark is New Zealand's largest telecommunications and digital services company and is rolling out 5G across the country. Aon is conducting a trial of Spark's cloud-managed network, VMware SD-WAN, which offers direct access to enterprise and cloud applications and provides bandwidth expansion. As an insurance provider, it is of immense importance that Aon remains connected with its customers at all times, especially in times of need. Deploying 5G at Aon will ensure a reliable, fast and a steady 24/7 internet connection. This will be a safer alternative to the incumbent fibre connection in case it fails. It will also help the company implement high-connectivity dependent use cases in the future.

### Cross-Industry

#### HARMAN

Harman, a subsidiary of Samsung Electronics Co Ltd, has delivered a 5G-enabled futuristic connected car technology termed Harman Turbo Connect (TBOT). The TBOT is used alongside Harman's 5G-ready Smart Conformal Antennae and Telecommunications Control Unit. It can anticipate poor connectivity on road and mitigate any latency or streaming issues before the passenger or driver notices. TBOT optimizes the available connectivity options to match the requirements of various performance-demanding applications and thus, provides heightened user experience. It can also boost vehicle parameters such as battery life by optimizing energy usage. Further, TBOT can anticipate expensive connectivity zones and undertake requisite downloads in lower priced connectivity areas, thus reducing data consumption costs.

# Creative Machine



Unleashing a new wave of man-machine creativity by letting AI do the heavy-lifting of producing it

## Financial Services

### VyStar Credit Union

VyStar Credit Union, in collaboration with ZestAI, is ingeniously using Artificial Intelligence to drive fairness in lending practices. The company wanted to lend to the under-represented and disadvantaged groups that had historically found it difficult to obtain credit. VyStar's standard credit card scoring system would have exposed it to potentially dangerous risk. However, using VyStar's years of lending records for training an AI, Zest increased the credit card approval rate by 22% without any additional risk. In essence, thousands of people who were previously ineligible now have access to credit cards. The AI uses a Generative Adversarial Network based system that shapes in small adjustments to the weights of different variables, making the lending process fairer while keeping the risk levels constant.

## Cross-Industry

### Seoul Broadcasting System

South Korea's national broadcaster Seoul Broadcasting System (SBS) is recreating the vocals of superstar Kim Kwang-Seok through a deep neural network based technology termed Singing Voice Synthesis. The song will be broadcasted in SBS's new program - "Competition of the Century: AI vs Human". Kim's voice will be reincarnated by South Korean audio AI start-up Supertone which provides AI audio solutions for content creators. The AI model listens to multiple voices with corresponding notes and lyrics as its training set. Trained with 100 songs by 20 singers before being provided with 10 of Kim Kwang's songs, the model can now mimic the singer's unique style and pronunciation.



*"Cross-industry collaboration, such as between the insurance and the automotive sectors is increasingly becoming the norm. It is important that FS firms leverage new-age technologies such as 5G, IoT, distributed ledger, to improve collaboration and develop new business models."*

**Seth Rachlin**

*EVP, Global Insurance Industry Leader,  
Financial Services SBU Capgemini*



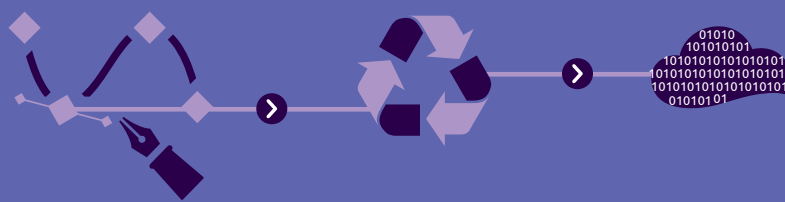
# BALANCE BY DESIGN

TechnoVision's aim is to help you build and develop your Technology Business. To provide the rich technology construction materials to do just this, the first six TechnoVision containers provide a logical display into the art and science of the possible. But how do we do it? What are the guidelines that need to be observed? What are the principles every Technology Business should know and respect? Balance by Design offers principles to consider, simply, methodically. While the trends make up a full technology menu, the principles make up the recipe to leverage the trends.

[Read TechnoVision Change Making for a complete overview of this technology-business container.](#)



# Balance by Design



## FS Implications:

Dynamics of 'Trust' have undergone a massive shift in the past few months – the ability to rebuild trust in minimal time has become a differentiator. FS organizations need to review experiences of employees, partners, and clients on a continuous basis to drive key outcomes that help repeat business and reduce churn. FS organizations worldwide are driving 'purpose-led' responsible banking. Their medium-to-long term strategy is to introduce additional measures that help meet society's expectations from them. It is time for them to adopt reimagined business models aligned with society's goals.

Financial institutions have realized that, in order to compete with BigTechs, they need to ride the wave of change very quickly. Agility and Speed have become primary drivers for business transformation. In this regard, Banks & Insurers are embracing Open platforms (platform P&L) that can seamlessly engage ecosystem partners through quick & easy integration, functioning as a business magnet attracting partners and customers alike. Enabling platform business requires engineering skills & capabilities, agile delivery, cross-organizational collaboration, technology democratization and customer-centric, data-driven approach. The role of data, especially for financial institutions, cannot be over-emphasized – understanding the value of data, its monetization potential and its power to drive outcomes such as hyper-personalized UX, augmented intelligence, creative use of AI etc. make it the single most important component in building an organization designed for the future. Specifically in the context of Insurance, organizations are aiming to be a 'caring partner', being empathetic and concerned and establishing emotional connect with customers.

## Key Trends:

- *From Product to Experience:* The essential concept here is to move away from a focus on products and towards a focus on experiences. While expedited product innovation and seamless exchange of data are key enablers, the end goal should be delivering continuously improved experiences. Assuming an 'orchestrator role', [Orange Bank](#) acts as an experience coordinating platform while sourcing the best services/products from other relevant players.

- *From Assets to Data:* Data-driven organizations (BigTechs & Challenger banks) have given financial customers a taste of what they can have. In order to remain relevant, incumbents must leverage data in creative ways across the value chain – to gain insights, to open new revenue streams, to drive new experiences and so forth. Data-centric journey maps are a case in point – helping capture impact at every point. For example, [Bank of Montreal](#) has a Process Center of Excellence that maps customer journeys & uses analytics to derive a data-centric customer route.
- *From Build/Buy to Partnership:* Effective partnerships, including cross-industry collaborations, provide additional scope for value generation as opposed to the usual build/buy options. However, it is to be noted that such collaboration requires people, business, and process maturity on both sides. Players that collaborate at scale to industrialize innovation will reap the benefits of the new era. [Commerzbank](#) collaborates with IDnow, a late-stage German scaleup that uses machine-learning to verify its customers' identities via video on a smartphone or computer. It resulted in a 50% higher conversion rate.
- *From Ownership to Shared Access:* Banks tend to approach products/services with the end goal of owning them completely, which limits the variety of offerings they can provide and drive customers away to other players. This must give way to a 'shared access' concept – wherein partnerships, platforms and products alike are managed through a shared sense of accessibility among the different stakeholders involved.



## Adapt First



Move Adaptability from Afterthought to Prime Time

### Financial Services

#### Goldman Sachs

Goldman Sachs decided to take a fluid, flexible approach towards devising its data strategy, emphasizing the capabilities that will most positively contribute towards the digital success of the company. They devised a platform strategy that enables it to achieve scalability benefits and quick integration of products. Working in collaboration with Stripe allowed the bank to offer their customers innovative propositions with Stripe's new products such as Stripe Atlas and Stripe Connect. This platform strategy that enabled quicker integration of new products allowed the US-based bank to achieve much-needed adaptability and flexibility. Conversely, in the true spirit of openness, Stripe will offer business banking services such as interest-bearing bank accounts, debit cards, and other cash management services to its customer via the collaboration with Goldman Sachs.

### Cross-Industry

#### IKEA

IKEA, the Swedish multi-national firm, is currently reaping the rewards of the agility they displayed during the pandemic-induced lockdown. They converted existing closed retail stores into fulfilment centers, which enabled them to service large number of customers, through contact-less click-and-collect services. Simultaneously, using Google Cloud, IKEA increased their capacity to handle large web traffic volumes and online orders. Further, they were able to build a more improved and user-friendly store-locator providing customers the ability to view stores with stock of a certain product. IKEA is further experimenting with using AR/VR to provide customers a preview of their furniture before they reach the store.

## With Open Arms



Turn your open platform into a business magnet

### Financial Services

#### Standard Chartered

Standard Chartered Bank (SCB) runs an open banking platform called 'aXess', which is slated to mould the future of the bank as well as put sharp focus on a culture of innovation, efficiency, and automation. aXess provides more than 150 categories of APIs ready for use and publishes open use cases for its partners to leverage and develop innovative solutions. This open banking platform ensures greater connectivity among stakeholders such as developers, businesses, and FinTechs, enabling an open community and development of new-age technologies. An open community such as aXess promotes extensive collaboration and co-creation of ideas through exchange of best practices, capabilities, and tools. With the platform being opened, developers are given the opportunity to refine and innovate client services in test environments.

### Cross-Industry

#### Open Manufacturing Platform

Open Manufacturing Platform (OMP) is an initiative launched by Microsoft and BMW to nurture a community to lead the rise of Industry 4.0. The idea is to benefit from cross-industry collaboration on themes and technologies that include (but is not limited to) semantic data models, industrial IoT reference architecture, and core services for autonomous transport systems. Open Collaboration is the central pillar for OMP. Members of the platform include AB-InBev, Capgemini, RedHat, VMWare, among several others. The platform is built on Microsoft Azure industrial IoT cloud platform and is meant to provide a reference architecture with open-source components

# Technology Business



Shift from Alignment to Unity

## Financial Services

### BNP Paribas

BNP Paribas, in collaboration with Spatial Systems and Magic Leap, used AR/VR technology to conduct teleportation meetings and a range of other activities. In settings where employees are working remotely, BNP Paribas allows its staff to interact with virtual objects and participate in real estate development planning process from the safety of their homes. The participants wear AR/VR headsets and interact with life-like avatars of their colleagues and clients as if they are sitting next to them, even though they may be separated by thousands of miles. Leveraging spatial computing technology, BNP Paribas creates 3D renderings of its real estate projects. Documents can also be imported and are interacted with as if they existed in a physical world. The platform is hardware agnostic i.e. it supports multiple AR/VR wearables. For creation of avatars, the platforms uses real-time sensor data based on gesture, voice and hand orientation.

## Cross-Industry

### Freeport-McMoRan

Freeport-McMoRan is coalescing business and institutional knowledge with the power of artificial intelligence. The company was looking to enlarge one of its copper mines in Arizona; the initial idea was to spend \$200 million on an expansion plan. However, this plan was soon thwarted by a sharp drop in copper prices. Instead of the planned investment, Freeport-McMoRan began building an AI model to gauge potential avenues of improvement in productivity. The age-old engineering know-how was challenged by the data science teams. The AI model gauged the possible increase in machine run-rate at maximum capacity. The metallurgists worked together with the data scientists to use the output of the AI model, resulting in a 10% rise in the mine's processing rate.

## IQ EQ CQ up



Power up your business with all three cylinders of IQ EQ and CQ

## Financial Services

### Manulife

Manulife used speech analytics to enhance customer experience during conversations between its representatives and customers. It broke down the reasons behind the calls to align it with the specific part of the customer journey. Depending upon the positioning of the customer, the representatives framed their conversations. The main objective of speech analytics was to understand the customer's intent. Manulife categorised the calls into low-valued and high-valued calls. Low valued calls, which were mostly instruction-oriented, were moved to self-services options or chatbots so that customers can get those addressed smoothly without going through a conversation. High-valued or conversation-oriented calls provided the company an opportunity to derive customer insights, improve customer experience and upsell/cross-sell new products and services.

## Cross-Industry

### Buy It Installed

Buy It Installed Inc., a division of Service Trading Company, Inc., uses emotional artificial intelligence to improve customer service engagement in the ecommerce space. It uses artificial empathy, which is akin to AI and has several industry definitions based on sectors and business context. Buy It Installed defines artificial empathy to be the non-actionable element included in the understanding of how a human being, specifically a customer, feels. Once the emotional information is gathered, artificial empathy can then be used to mirror the human ability to empathize or share feelings with others. It essentially trains the system to closely predict the feelings of a person using abilities similar to those people use to show empathy.





# Trust Thrust



Accelerate Trust Building

## Financial Services

### Barclays

Barclays Payment Services, which handles more than 40% of merchant transactions in UK, is working with Kount to make online transactions safer and trustable. The partnership allowed Barclays access to Kount's Identity Trust Global Network, a data network comprising 32 billion annual transactions from 6,500 customers and 75+ industries. The AI-powered solution, Barclays Transact, rates every transaction in real-time for low, medium and high risks. The low-risk transaction bypasses the Strong Customer Authentication (SCA) process while high-risked transactions are either declined or goes through the 2 factor authentication process. The solution protects merchants from sophisticated e-commerce fraud attempts while ensuring smoother payment experience of low-risk transactions. The solution also reduces false positives and merchant chargebacks, increasing the faith in online payments.

## Cross-Industry

### Express Watches

The issue of fake watches has become extremely serious for online watch retailers, with people challenging the reliability of watches being sold. Mistrust and misunderstanding is often sparked by websites offering replicas at rates that are marked at 70–80 per cent discounts on the price of original watches. Express Watches decided to address this through use of more prominent 'trust badges' on the website. The hypothesis drawn was that adding a larger TrustPilot (consumer review website) widget to the website would help to minimize the anxieties among users and thereby boost revenue from the site. This focused initiative by Express Watches to gain the customers' trust resulted in an increase in sales by 58.29 per cent.

# No Hands On Deck



Self-adapt: from automation to autonomy

## Financial Services

### Depository Trust & Clearing Corporation

Depository Trust and Clearing Corporation (DTCC) leveraged intelligent automation technologies to automate real-time threat analysis during processing of financial transactions. DTCC processed more than 90 million financial transactions in a day, which faced cyber threats through malicious URLs and phishing emails. Through deployment of RPA, supported by APIs and powered by machine learning, DTCC assessed the severity of threats in real time and increased the processing volume. The implementation of digital workers led to faster analysis of intrusion events, malicious URLs, and phishing emails by 80%, 96%, and 80% respectively. Automation at DTCC created a safer and more secured work environment while enhancing customer experience.

## Cross-Industry

### Coca-Cola Bottling Company United

Coca-Cola Bottling Company United faced the dual challenge of APIs being too expensive to create for legacy applications such as SAP and others, and of having to navigate a third-party website. Coca-Cola then used Power Automate to create RPA bots that solved these challenges by automating the processes. Power Automate desktop flows automate many of the repetitive process and are particularly useful for companies that involve a high volume of manual data entry and transfer. A master automated service agent named "Asa" was created including several bots, built on MS Azure and MS Power Platform. The Azure Key Vault was leveraged to maintain security of passwords and other sensitive data.

# What's our Story



Put a human's face on your purpose stories

## Financial Services

### Cigna Corporation

Cigna Corporation, an American health services provider, announced the introduction of a new health services unit called Evernorth. The value proposition of Evernorth includes acceleration of the delivery of flexible and innovative solutions to meet varied requirements of health plans, and of stakeholders: employers and government organizations (even the ones that do not cater to Cigna health insurance), enabling them to provide unmatched support to these groups. Evernorth is born out of the essence of customer-centricity, and is powered by deep insights coupled with clinical expertise. The specialist nature of Evernorth's expertise and its varied capabilities allow for proffering better health services and greater value to the clients.

## Cross-Industry

### AT&T

AT&T operates on a customer-centric business model, and as a result, has been experiencing continued momentum in the postpaid wireless business. It has a low churn rate of customers and high adoption of the more expensive, unlimited plans. The company firmly focuses on delivering benefits to its customers with its growth strategy aligned to generation of customer value. AT&T looks at offering seamless broadband connectivity for unrestricted access to streaming services, with sustained investment in 5G and fiber-optic infrastructure. The availability of HBO Max, a streaming platform under the aegis of AT&T, on Amazon Fire TV further shows the company's focus on its customers and the benefits they can derive.



*Trust is ever-evolving, and rebuilding it among the customers will prove to be a differentiator. Being responsible and purpose-led is now deeply entrenched in the ethos of the FS industry. Firms should embrace more open platforms, maintain transparency, and act more as caring partners for customers.*

**Amit Choudhary**

*EVP, Chief Operating Officer, Financial Services SBU, Capgemini*



*The financial services sector must act now to serve as a key intermediary in the quest for net zero by establishing sustainable offers, financing mechanisms, and investment principles. FS players can lead by example through their roles both in the financial economy and in supporting the real economy"*

**Stanislas de Roys**

*EVP, Managing Director of Capgemini Invent Financial Services*



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TechnoVision Change Making 2021 builds on our long-standing heritage of expert guidance – it's the 13th edition of our annual technology guide.

Technology can play a pivotal role in helping businesses deal with a flurry of unpredictable events, challenges and opportunities. To take advantage of the many benefits that technology can bring, organizations must be like water – that's the key theme of TechnoVision 2021, our annual guide to technology trends in business. Read report to discover how by being like water, executives can deal with complexity and help their companies to thrive.

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Capgemini is a global leader in partnering with companies to transform and manage their business by harnessing the power of technology. The Group is guided everyday by its purpose of unleashing human energy through technology for an inclusive and sustainable future. It is a responsible and diverse organization of 270,000 team members in nearly 50 countries. With its strong 50 year heritage and deep industry expertise, Capgemini is trusted by its clients to address the entire breadth of their business needs, from strategy and design to operations, fueled by the fast evolving and innovative world of cloud, data, AI, connectivity, software, digital engineering and platforms. The Group reported in 2020 global revenues of €16 billion.

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