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Financial IT

Innovations in FinTech

IS YOUR BANK ON THE EVOLUTIONARY ENDANGERED LIST?

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Co-Founder and CEO,
Volante Technologies

TRANSFORMING THE BACK-OFFICE: AI-ENABLED TECHNOLOGY

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TOKENIZATION: EN ROUTE TO SECURITY AND FLEXIBILITY

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5 STEPS TO DEPLOYING MACHINE LEARNING IN TRANSACTION MONITORING

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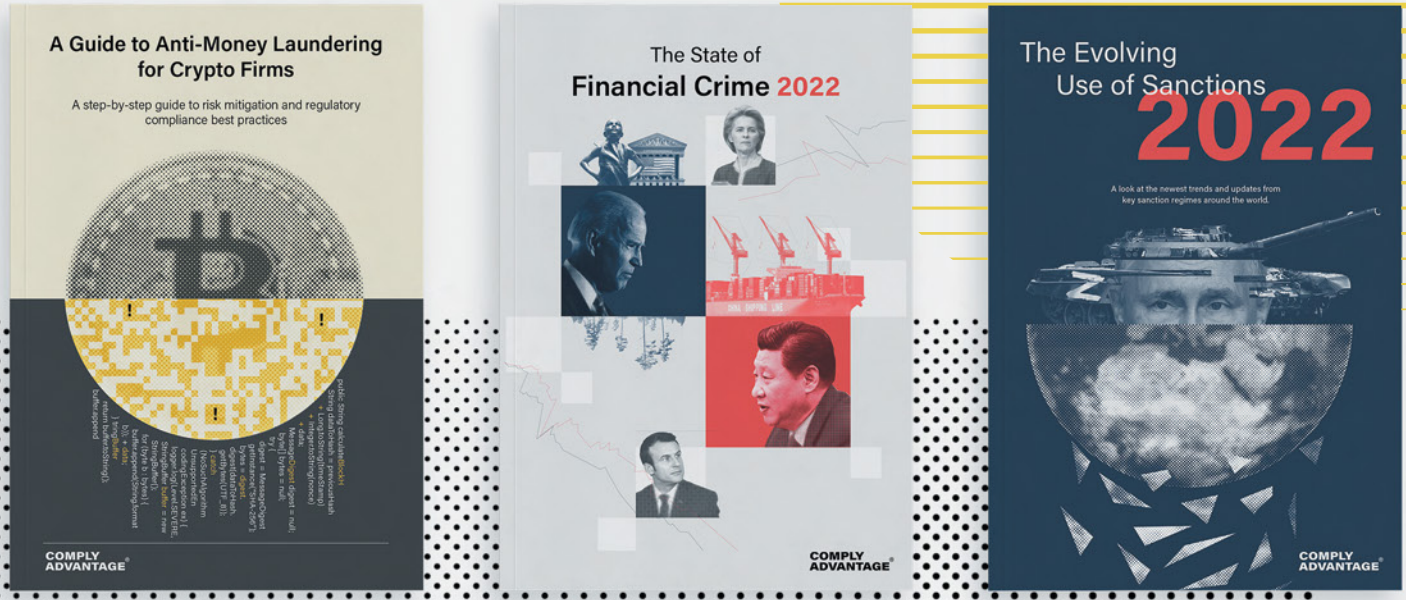

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Financial IT
Innovations in FinTech

TECHNOLOGY IN THE TIME OF WAR

Andrew Hutchings,
Editor-In-Chief, Financial IT

Sibos, which this year takes place in Amsterdam on 10-13 October 2022, is no small undertaking and requires months of planning.

It is unlikely that, when planning began, the organisers at SWIFT would have foreseen what would happen over the course of the first nine months of the year.

In no particular order, and without getting caught up in the details, the world's developed economies have seen: rampant inflation; a succession of sizeable increases in official interest rates that have been announced by central banks; rising bond yields (or, if you prefer, falling bond prices); negative real interest rates; a clear bear market for stocks in the United States and some other countries; and a surge in the US dollar against most other currencies. The last of these has proven to be a challenge for economies and financial systems in many emerging markets.

These words are being written two weeks before the beginning of Sibos. It remains to be seen whether the toxic combination of trends listed in the preceding paragraph produces a major financial crisis somewhere in the world between now and the end of the conference.

In any event, the world is one where the leaders of financial services organisations need to become, as one of the contributors to this edition of Financial IT put it, "Wartime CFOs".

We would suggest that a Wartime CFO is one who can respond very quickly to a rapidly changing situation. A Wartime CFO may work for a long-established and traditional financial institution. Alternatively, he/she may work for a recently formed fintech that challenges the status quo in its particular field.

He/she needs a certain mindset that can look through the disinformation that pervades any war. He/she needs to see the opportunities that arise – often in greater numbers than in periods of peace and tranquillity – and seize the day.

Perhaps most importantly, he/she needs access to the best technology that is available – which is, hopefully, better than the technology that is being used by his/her organisation's main rivals.

In this respect, being a Wartime CFO in and around the global financial services industry is not dissimilar to being a general in the ongoing, and tragic, conflict in Ukraine.

Every one of the contributors to this edition of Financial IT have insights, or products, or services that will assist a Wartime CFO in his/her work.

Without exception, the contributors have been helping their clients (or stakeholders) to reduce risk, to use data more profitably and/or to more easily develop new products and services. Some of the initiatives that are described in this edition of Financial IT do all three.

A clear message from our contributors this time is that artificial intelligence (AI), big data and machine learning will help a Wartime CFO to survive, and thrive, in what is an unusual and challenging environment for financial services companies.

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Sabrina Akramova,
Managing Editor, Financial IT

Information gaps that have existed previously will likely be filled. One of our contributors discusses how synthetic data will make possible advanced analysis – but with total security in terms of privacy because there is no link to the original data from which it is derived.

The main theme of Sibos this year is 'Progressive finance for a changing world.' Related themes include 'embracing the digital landscape and technological opportunities', 'driving sustainability and ethics' and 'succeeding in uncertain times'.

These themes are – appropriately – very positive and emphasise actual and potential benefits for the clients of financial institutions and fintechs, rather than conflict.

As discussed above, the question of a major financial crisis in a large part of the developed world is far more likely to be 'when' rather than 'if'.

Therefore, this year's Sibos is one of the most important one to take place in the 44 years since SWIFT's first banking operations seminar in 1978.

As Wartime CFOs respond to the threats and opportunities that come from volatile financial markets, the likely winners will be those who most adroitly use the technology that is being showcased at this conference.

We wish all participants and stakeholders a successful Sibos in Amsterdam.

Andrew Hutchings, Editor-in-Chief, Financial IT
Sabrina Akramova, Managing Editor, Financial IT

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Innovations in FinTech

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Financial IT
Innovations in FinTech

eTRADE eMBRACEING eCOMMERCE

Trade, acquiring things we need and want, is the oldest profession known to man. Now I know what everyone thinks of as the oldest profession, but that would not be possible without trade. Over many centuries trade has evolved and adapted to our changing world. Trade is still alive in all its forms. From barter to bargain, switch to swap, haggle to negotiate, and exchange to fund, trade makes the world go round. Everything in life revolves around trade. Everyone is involved and everyone needs trade.

Today trade has evolved to its greatest form, eCommerce. This is the ability for anyone to trade based on a digital representation from the omni-present mobile device. Enabled with a device a person or business can buy and sell anything with a few clicks. The order and payment are instantly done between buyer and seller at speed never imagined. Orders are placed, inventory is checked, goods are shipped, paid for, and – as expected – arrive in days. Trade provides instant satisfaction like a social medicine. There is much we do not see in, and many more advances coming to, social commerce.

Shopping as entertainment. That is where we do not have anything in mind to buy, but we just want to see what is new, what is everyone else looking at and liking. We just want to be part of the fun.

Social commerce is now a thing, and it is only going to grow. In China, the world's largest eCommerce market, about 50% of their consumers buy through social platforms. In the U.S. that figure is a little over a third. Companies are shifting their promotions to performance marketing and remarkable marketing. In performance marketing, advertisers and marketers only pay for success. This can be based on measurable actions like transactions, clicks, views, etc. With remarkable marketing the individual is encouraged to take part and interact with the site, product, company, or social platform. This is done through likes, emojis, and remarks that are personal and individual. Bringing the buyer, seller, and social platform together in a way that could not have been imagined and its instant. Technology does it, COVID-19 increased the velocity, and social commerce content puts it all within easy reach.

The most invigorating, yet daunting conversion is in process. Businesses are jumping in! Wholesale ecommerce is a fast-growing segment. Instead of buying single items for personal use, companies are buying production quantities. Larger volumes mean larger dollars. Increasingly this business is cross-border. The trend is towards vertical specialized online marketplaces. With the rise of these marketplaces, buyers can connect with wholesalers in minutes and receive their orders faster. The world is moving from trade shows to online marketplaces. This is creating a huge opportunity for payments, foreign exchange, and financing.

Unfortunately for many traditional banks this opportunity is passing them by. With their reliance on legacy technology and slow thinking management, they are not as agile as the fintechs. Fintechs are evolving at an ever-increasing pace. The use of Artificial Intelligence and Machine Learning in payments, FX, and Financing is increasing the speed and accuracy while reducing the time and cost of transactions. Payments made with cryptocurrencies are generally smooth and almost instantaneous. Recording transactional details within the blockchain provide unmatched security with reliability and accessibility. AI unlocks the trends in FX to make real time rate decisions. Technology provides integration between the bank and its customer providing the bank an instantaneous window to the accounting positions accurately. This visibility gives the bank confidence to provide financing while monitoring the company's position.

What the data, reports and trends reveal is that global eTrade embracing eCommerce is evolving as trade has always done since the beginning of man. Trade has never been a choice; it has always been a necessity.

by Chris Principe,
Publisher, Financial IT

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“WHAT GOOD IS A PHOTO YOU CAN’T HOLD IN YOUR HAND?”

– Former Chief R&D Officer,
camera company

Whoever said this wasn’t thinking big picture.

If they were, they would’ve known that evolving with technology is critical to staying competitive in any industry—especially banking.

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FREEDOM TO EVOLVE

EDITORS' LETTER

COVER STORY

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LEAD STORY

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2022 Innovation Insight: Journey-Time Orchestration Mitigates Fraud Risk and Delivers Better UX.

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5 STEPS TO DEPLOYING MACHINE LEARNING IN TRANSACTION MONITORING

Andrew Davies,
Global Head of Regulatory Affairs at ComplyAdvantage

Andrew is a veteran of the financial crime risk management world. Prior to joining ComplyAdvantage, he served as vice president of global market strategy at Fiserv. Andrew worked with customers worldwide to design and deploy effective risk management solutions to mitigate financial crime risks.

Large-scale innovations across the money services industry are both improving financial inclusion and creating new risks. In the wider financial services ecosystem, we are seeing dramatic changes in risk calculations driven by the rise of electronic deposits, peer-to-peer payments, digital wallets, and cryptocurrency transactions.

These changes have foundational and systemic implications for anyone working in financial crime risk management. A reactive, rules-based approach built around responding to guidance from law enforcement and historical data to identify risks has always been flawed but is fast becoming insufficient.

The rise of machine learning-based financial crime solutions focused on areas such as anti-money laundering (AML) and fraud mean that we can more effectively manage risk in the light of the transformation of financial services. Through initiatives such as the Regulatory Sandbox launched by the Financial Conduct Authority in the UK and the no-action letter process announced by FinCEN in the US, it is clear that leading regulators are working hard to adopt and encourage innovative approaches.

The growing complexity of the financial services industry is also blurring the distinction between AML and other types of risk. This has been evidenced in FinCEN's national priorities list, as well as the 22 predicate offenses highlighted in the EU's 6th Anti-Money Laundering Directive. These include environmental crime, human trafficking, and cybercrime.

In this context, transaction monitoring is a powerful use case for the potential of machine learning. Many firms are saddled with high rates of false-positive alerts, alongside siloed data sets and manual prioritization processes. Combined, these challenges mean less time focused on complex financial crime problems and more time spent on tactical, less urgent issues.

With a machine learning-based approach, firms can:

- Uncover more bad actors with a network-based approach. Weak evidence related to one person alone may not lead to an escalation. However, with machine learning, banks can leverage weak correlations in their data pools to identify and disable clusters of criminal activity in one go.
- Automate first pass alert remediation, freeing up analysts' time to focus on high-risk and more challenging cases.
- Tune alerts flexibly, with greater freedom to improve and adjust scenarios and thresholds.
- Identify true actors working behind the scenes by using identity clustering to seek out past account IDs.
- Ensure greater explainability around the reasons for an alert being generated.

Bought in on the benefits of machine learning for transaction monitoring? Great! Next, it's time to define a real use case. To help firms get started, we've developed the five-step process below.

1. Define core objectives

It may sound obvious, but setting clear, realistic goals for scoping a potential solution based on your risk assessment will ensure the deployment runs smoothly. The benefits of the investment can also be more easily assessed. Examples include:

- Reducing the reliance on manual processes for creating and reviewing transaction monitoring rules
- Improving rule reviews to more effectively reduce false positives while ensuring true positive matches can be actioned quickly
- Identify unusual and anomalous patterns of behavior, and the ability to uncover hidden relationships between entities

2. Review regulator expectations and guidance

Firms should consider the regulatory landscape in which they operate, especially if a machine learning based process is replacing, rather than supplementing, an existing, more manual operation.

Regulators are agnostic about the technology that firms use. They also believe that machine learning should not mean responsibilities are transferred from humans to machines. Accountability remains with compliance officers. However, there is a growing recognition of the value that machine learning can bring to financial crime risk detection systems.

In a recent report exploring the opportunities and challenges of new technologies for AML/CFT, the Financial Action Task Force (FATF) examined the power of AI to help firms analyze and respond to criminal threats with automated speed and accuracy. This is because machine learning can be used to train computer systems to "learn from data" without the need for extensive human intervention. FATF reports will likely help inform how individual regulators think about innovations in AML/CFT.

3. Set realistic implementation timelines

While planning ahead and allowing for contingencies when deploying machine learning based AML/CFT solutions is important, the implementation process doesn't have to be costly and time-consuming. With a clear use case, it becomes easier to define the specialist knowledge and skills you need. This, in turn, reduces implementation timelines.

4. Identify day-to-day users

Based on the selected use case, compliance leaders should also identify who in their team will interface with the new solution. Doing this early on ensures appropriate team members can be involved in the implementation process, allowing them to ask questions about the opportunities – and limitations – that come with machine learning and AI. They will also better understand the methodologies behind the AI system's recommendations.

It's also vital to arrange formal training, usually organized by the vendor(s) involved in implementation. Ongoing training, and regularly scheduled reviews in the first weeks the solution is live, will also be critical.

5. Map implementation to growth goals

Finally, firms should consider how machine learning based AML will support their growth plans. Compliance leaders know they can't grow their teams every time they grow their customer base. More customers will likely mean more false positives and, therefore, a higher number of alerts to manage. Questions to consider include:

- How can machine learning support prioritization work as volumes scale?
- What strategic hires would best complement the benefits of the machine learning based use case?
- Where will the effectiveness of machine learning based automation be more helpful and challenging as customer volumes grow?

To find out more about the ComplyAdvantage transaction monitoring solution, visit complyadvantage.com.

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IS YOUR BANK ON THE EVOLUTIONARY ENDANGERED LIST?

The concept of evolutionary adaptation, guided by natural selection and resulting in survival of the fittest, is famous in the world of biology – but this principle can also be applied to the world of financial services – with a number of banks on the endangered list.

Payments modernization has the potential to dramatically change the world of finance, much as the Cambrian Explosion transformed life on earth, but the species that evolve and adapt quickly to their rapidly changing environment are the ones that survive and thrive, while those that fail are naturally selected to disappear forever.

This evolution is clearly evident in the world of banking. Indeed, many of the same terms apply. We use the term ecosystems both in biology and financial services. We have seen great strides throughout history of rapid evolution in the financial services industry – for example, the introduction of telegraph which provided the infrastructure for financial globalization, allowing the first wire transfers.

As the speed of business has subsequently increased over time, the industry has continually found innovative ways to increase the speed of money transfers.

Banking on evolution

Something akin to evolutionary adaptation has happened within financial services with the modernization of payments to real-time. With the advent of instant messaging and digital communications, even payments that take minutes are now deemed slow. Real-time payments, initiated and settled nearly instantaneously with 24/7/365 access are proving to be a game changer and sit at the heart of any modernization strategy. Real-time also connects payments data and end-to-end communication in a single transaction enabling enhancements in financial control, cash positioning and liquidity management.

Simplifying the complexity of ISO 20022 modernization is another crucial evolutionary element for any organization involved in the processing of payment messages, from banks and financial institutions to fintechs and payment service providers.

Cloud also serves as an important environmental factor that is challenging banks to adapt. Studies show that implementing the right cloud strategy for a business can save up to 40% in ongoing operational cost due to the savings on raw infrastructure that can be achieved. With payment volumes rising faster than 9% compound annual growth rate, or more depending on the region, margins are under pressure.

Early adopters of a cloud-first strategy will prove to be the winners in an increasing competitive landscape. Using cloud-native technology allows banks to build out services and capabilities in stages, at their own pace, giving them room to meet requirement deadlines first, then incrementally add features and capabilities to deliver superior services to their customers for years to come.

Scalability remains a strategic must for those looking to retain market share

Volanté
Business Information Agility

About Vijay, CEO-Founder, Volante:

Vijay Oddiraju is CEO of Volante Technologies. He began his career at Oracle, and then followed his entrepreneurial instincts to launch a series of successful fintechs. Seeing a market opportunity for technology which could accelerate automation and digital transformation in financial services, Vijay co-founded Volante in 2001. As CEO, Vijay leads with a clear vision: "to think big, remember to give something back, and never shy away from risk."

Vijay Oddiraju,
Co-Founder and CEO,
Volante Technologies

and competitiveness. Resources can be directed away from the infrastructure and manpower costs required to maintain services within data centres, and instead moved to create new and compelling value propositions and ultimately provide a far superior service to customers. Being able to take advantage of services in the cloud also delivers full processing services 24/7, which is a critical element for real-time payments, instant payments and the API economy in general.

Adapting to customer expectations

Resilience is the key to payments success. That means finding ways around legacy systems to build what customers expect: real-time payments, ISO 20022 messaging, cross-border, APIs and open banking, and faster corporate onboarding.

Utilising payments-as-a-service (PaaS) is another key indicator of adaptation. According to a recent Celent report, more than eight in ten banks (85%) said they would look for a partner to deliver and manage PaaS over the next five years and 68% said they would rely on a partner to fully manage payments. The message is clear. If banks do not offer payments modernization, they will fail and be naturally selected to disappear forever.

Survival or extinction?

To find out whether your bank is heading for healthy adaptation or extinction, ask the following questions:

Where is your bank in terms of ISO 20022 capability?
Are you currently offering real-time/ instant payments services?
What is your current level of maturity with respect to Cloud/PaaS?
How long does it take you to onboard new corporate clients' payments requirements?
How quickly can you release new value-added payment services to market?

Which evolutionary class are you?

Right now banks can think of themselves as belonging to one of three evolutionary classifications – protected, vulnerable or endangered. Within a decade, those that fail to adapt could end up extinct.

Vulnerable financial institutions are looking to move into the protected sphere. Just as biological evolution benefits the whole species in general, the same applies to financial services. If we can all adapt together as an industry, this will benefit all of our societies – with more inclusion and access to payments for everyone, even the unbanked.

Consumer expectations driving evolution

More than ever, there is a pressing need for immediacy – immediacy of payment, of receipt, of acknowledgement, of data. The whole experience has to be instant.

There is also a need for 24x7 global coverage – including the biggest evolutionary thing in recent years – digital coverage in the metaverse.

Consumer expectations are rightly driving business behaviours, such as the need for data and personalization. In the future, everything will be hyper-personalized, because consumers trust their providers with their data, and expect them to use that data to improve customer service.

After all, there is little use knowing a customer's identity and bank balance and payment history if you cannot use that to provide more immediately relevant suggestions.

Metaverse and beyond

Other trends outside payments – not as yet payments-specific, but forcing payments to make huge shifts in the coming years – is the metaverse. In the beginning, many did not take the concept of the metaverse seriously, just as they made fun of cloud, email or any other world-changing innovation. But within the next decade everything will be in the metaverse, because that is where people will live, virtually. Indeed, the busiest bank branches will be in the metaverse, because no-one there has to stand in line.

Indeed, what people call e-commerce now may become known as meta-commerce – and this will drive even more adoption of real-time and ISO 20022.

The metaverse will continue to accelerate the move towards cloud, which is a great example of a technology trend that has been powered by business trends. That in turn creates new business opportunities, because once we are doing transactions on the cloud we can bring other experiences into that cloud through ecosystem partners.

Sink or swim

It all began with the Cambrian Explosion of payments modernization, but only through rapid adaptation can that explosion lead to successful evolution and survival – which means jettisoning antiquated ways of thinking about payment services, expanding our thinking well outside the traditional financial services box and building an innovative, high-speed payments future around the customer.

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“I WOULDN’T WORRY ABOUT THIS VIDEO STREAMING SERVICE THING.”

– Former Executive,
video rental chain

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FREEDOM TO EVOLVE

TRANSFORMING THE BACK-OFFICE: AI-ENABLED TECHNOLOGY

Banks must process an ever-growing number of transactions. AI-based reconciliations technology, says Andreas Burner of SmartStream's Innovations Lab, can play a transformative role in helping banks cope. Even complex areas, such as exceptions management, are now being revolutionised by the power of AI.

A vast amount of data currently flows around financial institutions. Transaction volumes have ballooned, a trend that SmartStream – which also provides managed reconciliations processing services to financial institutions – has experienced first-hand. Financial firms are under pressure to manage growing transaction volumes, yet must do so without increasing the size of their operations teams, thereby adding to overheads.

This is only one side of the story. Beyond the power to reconcile big data, and the advantages that this brings, there also lies the question of being able to do so in real time, including, critically, the ability to resolve problem areas such as exceptions.

Unfortunately, some firms are struggling to understand and control the large quantities of increasingly complex data which passes through them – particularly those hampered by ageing legacy systems and inefficient manual processes. A lack of control over their data, as well as an inability to gain a full and rapid understanding of the information that flows around them, exposes firms to heightened risk. Even more concerningly, the industry is plagued by operational losses – many of which are entirely avoidable.

To make matters worse, added pressure has been piled on back offices by the explosion in digital payments, driven by the coronavirus pandemic. Responding to the mushrooming demand for "instant" is proving tricky for the traditional back office, and it is clear that an alternative – and far more innovative – approach is needed if financial firms are to meet this challenge.

Skills dependency is another problem area for the financial sector. Important operational knowledge is often lost when staff retire, leave or are promoted, and companies must invest in systems that allow them to create greater resilience against vital corporate intelligence being lost. Freeing up back-office staff from repetitive, low value processing activities, to carry out higher value tasks, such as exception management, is another area in which financial institutions need to make further progress.

In order to handle the huge volumes of information now at play, financial institutions require technology – such as cloud-native solutions – which are capable of processing millions, or even billions of lines of data per second. They need to harness AI and machine learning (ML), too, if they are to find new ways of increasing efficiency and driving up processing rates without adding extra staff to operations teams or pushing up costs.

AI and machine learning are ideally suited to handling complex data sets. They can detect subtle patterns in huge volumes of data, in a way the human eye never could, facilitating understanding. Their ability to tackle vast quantities of information also means they can inject much-needed speed into back-office processes. They allow banks the opportunity to unlock the true value of their data, turning what is currently a burden into a valuable asset.

SmartStream has created sophisticated, AI-enabled solutions which transform the way firms manage and reconcile data. Our systems combine multi-year operational experience with AI to deliver actionable information. They boost automation, helping banks to improve service levels, stem operational losses, achieve superior margin management, and perform more accurate data analysis. These solutions are already in use, and offer proven cost-efficiency benefits.

Five years ago, SmartStream, which has a long track record of investing in research and development, founded its own Innovations Lab. The purpose of the Lab, which is based in Vienna and staffed by highly talented data scientists and technologists, is to apply AI and ML to the specific business issues faced by our clients. The Lab collaborates with customers – including several large Tier 1 banks – on proof-of-concept projects, to identify high value business cases where AI can create proven cost and efficiency benefits.

The Innovations Lab provides a great deal of reassurance to firms about the use of AI. By running proof-of-concept projects in partnership with banks, using our AI technology in combination their data and processes, firms are able to see for themselves the incredibly positive results this technology brings, which does much to allay any lingering fears.

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About Andreas Burner, Chief Innovation Officer,

Andreas Burner has been with SmartStream since 1997 and has over 20 years of experience in building financial service solutions for leading international banks. He is the head of the SmartStream Innovation Lab with a mission to establish a culture of innovation within SmartStream. Andreas works closely with all teams to identify, prototype, and deliver new technologies to the SmartStream product range. His team of researchers are working on blockchain and artificial intelligence technology.

In parallel, Andreas pursued an international academic career and contributed to the field of machine learning in the medical domain with AI technology that assist in the diagnoses of diseases.

Andreas holds a MSc in Computer Science with a specialisation in Artificial Intelligence from the University of Technology, Vienna, and a MA in Mediation and Coaching from ARGE Educational Management, Vienna.

During the course of these projects, we have been able to prove to the Tier 1 institutions we partner with that significant efficiencies can be achieved through the use of AI-enabled technology. Where AI and machine learning is employed in reconciliations processing, we have demonstrated that efficiency can be improved by as much as 20%. This boost provides banks with the capacity to scale in response to growing transaction volumes.

Alongside these collaborations, we have developed a highly advanced, yet easy-to-use, AI-based application, called SmartStream Air. It has a truly transformative impact on the onboarding and processing of reconciliations, reducing tasks which have traditionally taken weeks or months to a matter of seconds.

SmartStream Air requires no training or configuration, and is easy to get started with. Users simply upload raw data to the application, in any structured format. The application then matches the information, using unsupervised AI. Transactions can be streamed in real time, which is useful in areas where speed is essential, for example, digital payments. Using SmartStream Air, firms can reconcile complex data sets rapidly and accurately, driving up processing speeds. In addition, the solution reduces skills dependency, e.g. on configurational skills and maintenance.

SmartStream has also developed an 'observational learning' component, called Affinity, it learns from the manual matching behaviours of human users. As well as forming part of SmartStream Air, it is being embedded across our existing solution suite, including in the technology used by our managed services arm.

A recent project, carried out in collaboration with a Tier 1 bank, to integrate Affinity with the bank's reconciliations platform, demonstrates the useful role Affinity can play in boosting efficiency levels. The bank has high automation levels and excellent match rates but wanted to tackle a residual pool of manual matching. Affinity was used to deal with this remaining group of complex cases, reducing the final percentage of manual matching and creating potential savings – and for large firms such as this, which handle huge volumes of transactions, shaving off the last few per cent of manual matching can add up to a cost reduction of millions of dollars.

Importantly, by learning from the matching activities of skilled operational staff, Affinity preserves vital corporate intelligence, preventing it from being lost or disrupted by events such as staff absence or holidays. Its ability to learn rapidly from human users also frees up staff to concentrate on higher value tasks, for example, exception management.

SmartStream, which invests heavily in R&D, maintains a continual focus on innovation. As part of this process, the company has recently developed SmartStream Air v.7. This application aims to inject greater efficiency and control into exceptions management, through the use of advanced cloud-native AI technology. It is a first in the industry and an advance which the market is currently much in need of.

At present, exception management is controlled by users or user-defined automation rules. SmartStream Air v.7, however, does things differently. It streamlines today's cumbersome and time-consuming exception handling processes by learning directly from an experienced human reconciler's actions or historic data. When trained, the AI underpinning the application is able to predict fields and workflows for managing exceptions. SmartStream Air can provide suggestions to the user or fully automate processes, significantly improving STP rates. In addition, it frees up reconcilers to focus on other tasks, helping businesses reduce costs.

SmartStream Air v.7 massively reduces the time spent managing exceptions that arise from unmatched data, or from data integrity issues. It automatically classifies the priority of an exception, assigns it to the relevant teams, adds labels (including statuses), and populates exception detail fields, allowing reconcilers to carry out their work more effectively. SmartStream's intention is to integrate these new AI-based exception management capabilities across its middle- and back-office solutions, enabling clients to experience the advantages this highly advanced technology can bring.

In conclusion, AI and machine learning, offer institutions a potentially transformative way forward. In the future, these technologies are likely to play a pivotal role in helping firms process, control and understand data more effectively, assisting them to achieve superior margin, preserve vital corporate intelligence, increase business volumes and improve customer service. Some firms continue to hesitate, but with robust, proven AI and ML-based applications now available, companies should overcome any lingering fears they may have, and take advantage of the benefits these systems can create. Indeed, in today's rapidly changing and demanding financial landscape, financial institutions can no longer afford to delay – they must embrace these innovations if they are to survive and flourish.

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Find out why many of the top financial institutions globally continue to rely on our innovations.

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Innovations in FinTech

TOKENIZATION: EN ROUTE TO SECURITY AND FLEXIBILITY

Tokenization has taken off in recent years. The encryption solution for credit and debit cards ensures greater security in e-commerce for end consumers and merchants, as well as more flexibility for both sides. Its increased adoption has gone hand in hand with new developments in the field, and IXOPAY has supported these developments from the onset. The Payment Orchestration Platform offers a flexible solution, able to meet any requirements. Rene Siegl, CEO and founder of IXOPAY looks back at the beginnings of tokenization, its status quo and current trends.

In e-commerce, on-demand payments, such as a 1-click checkout, recurring payments as well as subscriptions have been established for some time. Customers are given the option of storing payment instrument data such as credit cards and bank accounts ("card-on-file") with the aim of making subsequent purchases easier and, above all, faster to process.

Back in the 2000s, in the early days of e-commerce, credit card companies took great efforts to establish a high security standard for card holders. Following the introduction of the Payment Card Industry Data Security Standard (PCI DSS), the major credit card schemes (American Express, Discover, JCP International, MasterCard and Visa) have worked together in the Payment Card Industry Council, laying the foundation for secure online shopping.

What is PCI Compliance?

"PCI is a set of guidelines and standards that companies must comply with in order to be able to offer secure credit card payments in their online stores. These standards stipulate where and in what form the end customer's data may be stored and processed," explains Rene Siegl.

The advantages for consumers are enticing. Siegl: "PCI-DSS ensures a high level of security for online purchases and the handling of sensitive personal data. For businesses, the embedding in global standards offers more protection against data breaches, greater customer satisfaction and the basis for effective compliance policies. However, this also requires efforts to ensure the secure storage and further processing of data in accordance with these standards."

The evolution of compliance regulations is ongoing. One of the recent developments is the SCA (Strong Customer Authentication) regulation that formed part of the European PSD2 directive. SCA mandates multi-factor-authentication, significantly increasing the security of end customer data. Unfortunately, the introduction of SCA also saw an increase in payment aborts during checkout due to increased "friction". Hence, merchants and other organizations are still looking for ways to further improve the user-friendliness of their checkouts.

Where does Tokenization fit in?

Closely linked to the development of the PCI DSS security standard in the credit card sector is the rise of tokenization. The storage of sensitive payment data is subject to strict regulations that must be complied with and requires certified environments. "Technically, tokenization means that the 16- or 19-digit Primary Account Number (PAN) that can be found on all credit and debit cards is swapped for a unique token which then can be stored in various settings. The token by itself cannot be abused for fraudulent purposes," says Siegl.

There are various ways to comply with PCI DSS regulations using tokenization. Depending on who creates the tokens and where they are stored, companies can decide which tokenization model best fits their business. Siegl: "Apart from storing customer data in one's own infrastructure, many businesses choose to outsource the complex and costly undertaking to their banking institutions or to independent payment service providers such as IXOPAY." PCI-3DS certified and equipped

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About Rene Siegl:

Rene is the Founder and Executive Chairman of the IXOLIT Group, which was founded in 2001. Since 2014 Rene has been leading the development of the IXOPAY Payment Orchestration Platform, which addresses the global payment scaling needs of online merchants and licensed payment institutions.

with a PCI-DSS Level 1 compliant card vault, IXOPAY ensures GDPR compliant data security and helps enterprises to retain their independence and flexibility.

The initial implementation model for tokenization was gateway tokenization. Here, the company is integrated with the respective gateway provider. "If the gateway provider is also the company's acquiring bank, this can lead to undesirable lock-in effects, which means that the provider of the payment processing service binds the organization to its platform through tokenization and prevents changes in the payment gateway," says Siegl. In this scenario, the data would first have to be de-tokenized and then transferred to a new gateway provider, which in turn would again perform tokenization and storage using its own systems and procedures.

However, using independent platforms like IXOPAY prevents these lock-in effects, Siegl notes: "The use of IXOPAY's tokenization solution offers secure encryption of the end customer's credit card data in the form of a unique token as well as the storage of the data and the token in the IXOPAY Card Vault. This ensures that merchants deliver the highest level of PCI compliance for their customers, as well as giving merchants the flexibility to select the most appropriate acquiring bank for each transaction, securely transmitting the token used to carry out the payment." Merchants thus have the freedom to choose the most appropriate acquirer, strengthening their negotiating position with other acquirers, and ensuring secure data storage for end customers.

Next Step: Network Tokenization

Network tokenization is the next step in the evolution of secure credit card payments. "Unlike previous tokenization models, this involves encrypting the PAN on credit and debit cards through the network of credit card providers such as MasterCard and Visa," continues Siegl.

The tokens replace sensitive card data such as expiration date, account number, etc. with unique digital identifiers that are valid across the entire network.

The resulting token is used to securely complete payments of recurring customers' purchases. Crucially, it is encrypted directly by the card schemes, making the tokens universally usable for merchants, as well as more secure and easier to administer, for example, when issuing new credit cards or renewing them. Since the network tokens are created with more information, updates can be carried out automatically without end customers having to re-enter their data. Higher customer satisfaction meets higher security.

Siegl: "In turn, the network tokens themselves can be stored in environments such as the IXOPAY Card Vault. The use of IXOPAY's network tokenization solution combines the secure network encryption of the end consumer's credit card data and its storage in the IXOPAY Card Vault." This not only ensures the highest level of PCI compliance for customers, but also allows enterprises to continue to flexibly select the appropriate acquiring banks for each transaction, optimizing fees and maximizing authorization rates.

A peek into the crystal ball

The PCI Council's efforts to ensure an optimal user experience and the highest global security standards will certainly continue. Siegl: "Secure Remote Commerce, SRC, is already around the corner. It will focus on transparency – for consumers as well as for enterprises. Yet again, having a truly independent partner at your side will be advantageous to avoid provider lock-ins and to keep costs and fees low on both sides."

To find out more about PCI and Tokenization read IXOPAY's latest blog: https://www.ixopay.com/en/news/pci-and-tokenization-on-the-rise.

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Financial IT
Innovations in FinTech

MAKING FRAML COMPLIANCE A LOT EASIER – AND MORE EFFECTIVE

Financial IT interviewed Edward Vaughan, Banking Expert at LexisNexis Risk Solutions, about fraud and anti-money laundering (FRAML) compliance. The challenges are continually increasing. Fortunately, the technology for solutions, such as their RiskNarrative platform, is always improving.

Financial IT: Eddie, what is the problem that RiskNarrative looks to address?

Eddie Vaughan: The problem in two words is: FRAML compliance. FRAML stands for fraud and anti-money laundering. It's an ugly acronym for an essential topic. Needless to say, the FRAML regulations apply not just to banks and financial institutions, but also other organisations such as ecommerce, online casinos, and betting platforms.

Financial IT: RegTech – essentially a specialised part of the Financial IT universe – has been looking at making FRAML compliance easier for a long time. What is the issue?

Eddie Vaughan: The point is that FRAML compliance isn't actually easy. Currently, the reality for many companies is legacy systems with a lot of different siloed processes and systems for Identification Verification, Know Your Client (KYC), documentation, biometrics, application fraud, taxation fraud, and AML requirements which don't communicate with each other.

Legacy systems make it difficult to gain a quick and comprehensive view of the FRAML compliance risks associated with any one client. Relying on separate processes is inefficient and make it harder and more expensive to acquire new clients. The cost of compliance isn't just the cost of implementing new technology, or potential fines for non-compliance; false-positive results or added friction in the customer journey can cost the regulated entity a considerable amount in lost business.

Financial IT: And the overall regulatory landscape is always changing, right?

Eddie Vaughan: That's right. In general, the regulatory requirements are moving, and in one direction – forwards.

What I'd stress, though, is that technology is also changing – and improving. With new types of technology and data sources emerging to keep up with the regulation, the digitalisation of the entire global financial services ecosystem is accelerating.

However, there is an alternative.

Financial IT: Which is?

Eddie Vaughan: RiskNarrative is a FRAML compliance platform that has three key

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About Edward Vaughan:

Edward has over 15 years of experience in financial crime roles across a broad range of sectors. Prior to LexisNexis Risk Solutions, he worked as the Future Financial Crime Risk Manager for a Tier 1 bank, helping to shape the future systems technology for the bank. He is also the former Financial Crime Manager and Global Fraud Lead for a leading Swedish bank.

His job role is currently: Banking Expert, LexisNexis Risk Solutions.

characteristics; unified, sophisticated, and configurable.

Unified in this context means that there are no silos. RiskNarrative brings together the various aspects needed to onboard and monitor customers into a single interface.

We've built the platform to be sophisticated to support the entire customer journey from on boarding to off-boarding, and fully configurable so the entire platform can be changed quickly to meet the specific requirements of a particular regulated organisation without code.

RiskNarrative is a Software-as-a-Service (SaaS) offering that is based in the cloud. Business users can, in natural language, easily make the changes that are needed. The RiskNarrative App Store brings in data and services from LexisNexis Risk Solutions and from over 50 third party data providers.

The platform can be configured to match each the exact requirements of each of our clients. It can also incorporate the regulated entity's own data suppliers. I'd also add that, with the Restful Application Programme Interface (API), RiskNarrative can be installed within days.

Financial IT: In practice, what are you doing and for whom?

Eddie Vaughan: We are already working with a number of leading companies in heavily regulated sectors such as banking and financial services, gaming, telecoms, utilities and crypto.

Financial IT: Looking forward, what are the opportunities – and the threats – that you see?

Eddie Vaughan: The burdens of FRAML compliance continue to grow which leaves a lot of businesses at risk for non-compliance. As the problem gets bigger, so does the demand for the solution.

However, for a lot of CIOs and CTOs in regulated organisations they face a fairly stark choice. They can spend a lot of time and money trying to develop in-house solutions or navigate a bewildering array of technology.

Alternatively, they can talk to us. RiskNarrative is a proven and respected cloud-based solution, and essentially shares the cost of development with everybody else who's on board.

I am very excited about our prospects for the coming three-to-five years.

Financial IT: If you had just one message to deliver, what would it be?

Eddie Vaughan: By bringing clarity to information, RiskNarrative ultimately helps make communities safer, commerce more transparent, business decisions easier and processes more efficient.

LexisNexis® RISK SOLUTIONS

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Julien Jenoudet,
Chief Executive Officer,
BoardiGO

SECURING AND STREAMLINING BOARD ADMINISTRATION WITH BOARDIGO

Financial IT: Please briefly describe your company's mission.

Julien Jenoudet: BoardiGO is a web and mobile tool that secures and streamlines the board administration process while maintaining compliance. BoardiGO is simple to use for board members and company secretaries, whether in online or hybrid mode. It saves time and adds security. There is a clear and complete audit trail. Its inbuilt electronic signature ensures the validity of votes and signings (being compliant with the eIDAS legislation of the European Union).

Financial IT: What product/service are you showcasing at Sibos 2022? What are the key features of the product?

Julien Jenoudet: We are showcasing the main BoardiGO product, which provides digital solutions to boards, enabling them to work with the highest levels of trust, digital security, and legal protection.

At Sibos 2022, we want to show how our app employs cutting-edge cryptography and other technologies. BoardiGO seeks to simplify, safeguard, and make transparent corporate governance for all stakeholders, board members, and corporate secretaries. This means that it can make the administration associated with governance more efficient.

We will be showing our built-in and customized templates, signature, and ability to handle any number of board members. There are special features that allow users to schedule a poll, synchronize external calendars, and request documents from members and external users. Additionally, we have developed integrated video conferencing tools for online and hybrid modalities.

Financial IT: How does BoardiGo help to keep track of the governance process?

Julien Jenoudet: All of our clients' data and workflows are stored in the European Union, either with Microsoft Azure or in a private cloud managed by us in Luxembourg. We maintain records for five years. By using our search engine, users can get documents and workflows and export their search results to an .xls file. They are able to "tag" the businesses they are managing based on the contract or customer and generate customised dashboards.

Financial IT: Blockchain technology is known as an industry disruptor. Does BoardiGo use the same cryptography on the platform?

Julien Jenoudet: BoardiGO employs an asymmetric encryption comparable to the one utilised by blockchains to secure identities, votes, and signatures. However, we do not use blockchain to execute our clients' processes since it would be too expensive and too sluggish, and our clients demand a high level of consistency when they are online and running their boards. In other words, they want to see it immediately when, for example, a board member votes. However, we use a decentralised cloud known as IPFS to ensure that our Certificate Revocation List is always accessible to third parties.

Financial IT: What Is a Certificate Revocation List (CRL)? How does BoardiGo apply CRL on its platform?

Julien Jenoudet: The list of revoked certificates pertains to the legitimacy of signatures and votes. When a user is onboarded to the BoardiGO platform, a certificate tied to his/her identity is generated and utilised for signing and voting. Using unique technology in our private cloud, we ensure that only that person can activate the certificate associated with his/her identity. Of course, the eIDAS legislation mandates us to "tell the world" if a certificate is compromised, and we do so by posting the Certificate Revocation List.

Financial IT: What are the trends that we should expect in governance process technologies in the next 1-2 years?

Julien Jenoudet: The key trend is rapid growth. According to Verified Market Research, the global board portal market size is projected to grow from US$2.48 billion in 2018 to US$ 10.43 Billion by 2026, at a CAGR of 20.15% over that period. Integration of cloud-based technologies with board portal software is expected to support market growth during the forecast period.

Of course, you also need to consider what is driving that growth. Remember that a board portal is a system that encrypts and completes internet-based tasks to facilitate management meetings, communication, and collaboration between the board of directors and directors. In addition, it is utilised to deliver content to the directors via mobile devices or various websites. As cybercrime increases rapidly, the requirement for a secure platform for board meetings has increased significantly.

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LYNX: CANADA'S NEW HIGH-VALUE PAYMENT SYSTEM

An interview with Mike Hoganson, Director, Lynx, at Payments Canada

Financial IT: Mike, could you please briefly explain the history of Lynx, in the context of where Canada's high-value payment system has come from and where it is going?

Mike Hoganson: In 2016, Payments Canada released the Vision for the Canadian Payments Ecosystem. To support the long-term growth of Canada's economy and payment needs of today and in the future, a fundamental part of this Vision was the introduction of a new high-value payment system.

Planning for this new system began in 2017, in partnership with various stakeholders- including the Bank of Canada, our regulators, our members and our technology partners. To mitigate risk, a decision was made to release Lynx in two stages.

In Summer 2021, Payments Canada successfully launched the first release of Lynx to replace the Large Value Transfer System (LVTS), which served as Canada's high-value payment system for over 20 years. This first release included a new risk model and new technology (application and infrastructure).

Release Two will take place in November 2022, and will deliver end-to-end support for ISO 20022 messaging standard that will enable data-rich payments.

Financial IT: Does this mean Lynx is all about ISO 20022?

Mike Hoganson: Yes and no. Lynx, first and foremost, is about safety and soundness and effectively managing the settlement of high-value payments.

When we embarked on the modernisation journey, we realised that Canada's payment systems could and should be able to handle much more data and offer more reporting capabilities. By the end of this year, that will include ISO 20022 messages, which can incorporate structured remittance data such as purchase order details, invoice reference numbers and much more.

Lynx is very data-rich relative to LVTS. The financial institutions that use it have access to key metrics in real-time, as well as databases that underpin historical reports. The wealth of data and enhanced reporting capabilities available – and not just because of the move to ISO 20022 messaging – are some of the key benefits of the Lynx system.

Financial IT: What are the other key features of Lynx that you would highlight?

Mike Hoganson: First off, I'd note that Lynx is designed as an open and accessible system. It can and does capture most of the value that is exchanged daily through the payment systems in Canada. In terms of hard numbers, in its first year of operations, Lynx cleared and settled over 12 million payments valued at $115 trillion – or an average of just under 50,000 items worth about C$500 billion daily.

Although it is a high-value payment system, there are no minimum volume or value requirements for participation.

Any deposit-taking financial institution that is a member of Payments Canada can be involved with Lynx. There are four conditions for involvement. The member institution in question must: maintain a settlement account at the Bank of Canada; be able to pledge the necessary collateral to the Bank of Canada for Lynx purposes; meet the technical requirements that are set out in the Lynx Rules; and be a member of SWIFT. There are some institutions that are not directly involved with Lynx but access the system via institutions that are directly involved.

There are also new APIs, which provide Lynx participants with the ability to integrate directly with the system, making use of cutting-edge technology and gives the system flexibility.

In addition, we have had to focus on risk and governance processes. We have had to ensure that a completely new stack of technology will work reliably and understand the risks for each participating institution.

Financial IT: The focus on risk required a lot of testing, right?

Mike Hoganson: Definitely. The launch of Lynx was a significant collaborative effort. As a part of our preparation for Lynx, Payments Canada tested the system in partnership with our technology partners, IBM, Nexi and SWIFT, the Bank of Canada and our

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16 participants over five months. We looked at all kinds of contingencies in order to identify fallback solutions. We only launched Lynx once the testing had confirmed that the system was ready to go live.

At this point, I'd note that we were ready to go live at the time that we had originally envisaged. I am very proud of the dedication and professionalism of the team at Payments Canada. Thanks in part to our very strong relationships with the participants and in part to our ability to work remotely, the COVID-19 pandemic had no impact on our go-live date.

Financial IT: What would be your 'elevator pitch' description of Lynx?

Mike Hoganson: Lynx is Canada's high-value payment system. Based on the real-time gross settlement (RTGS) model, Lynx processes large value, time-critical payments with real-time settlement finality. Relative to its predecessors, it is rich in terms of the data that is provided to participants. It will be fully aligned with SWIFT's ISO20022 protocols by the end of 2022.

From the point of view of the Bank of Canada, Lynx is a systemically important payment system under the Payment Clearing and Settlement Act. Lynx makes possible the safe sending of large-value payments. It is also a critical part of the infrastructure through which the Bank of Canada executes monetary policy. For these reasons, Lynx plays an absolutely central role in the economy.

Financial IT: Thank you.

About Mike Hoganson:

Mike Hoganson is the Director of Lynx at Payments Canada. He is the business lead on the Lynx ISO 20022 upgrade program. Mike has over 20 years of experience in payments, clearing and settlement. Recently he has been involved with Payments Canada's payment Modernization program, playing a critical role in the development of the ecosystem vision and industry roadmap for the implementation of Canada's new high-value payment system, Lynx.

About Payments Canada:

Payments Canada is a public-purpose, non-profit company that is fully funded by its members. Employing around 270 full-time staff, its headquarters is in Ottawa and it has an office in the financial district of Toronto.
Payments Canada supports Canada's financial system and economy by owning and operatingthe country's payment clearing and settlement infrastructure, including the relevant by-laws, rules and standards.

SERVING AND SURVEYING THE MIDDLE EAST AND NORTH AFRICA

Interview with Esam Al Kheshnam, CEO of International Turnkey Systems (ITS) Group

Financial IT: Can you tell us more about the strategy that ITS has developed during 2022?

Esam Al Kheshnam: We've recently launched ETHIX-NG to support financial businesses, in adapting easily and quickly to any regulation change. Meanwhile, we provide them with the latest technological needs. With our new Digital Banking solution, we endeavour to take Islamic Banking, Neo-Islamic Banking and Islamic Finance to the next level.

Financial IT: From your point of view, what is ITS' vision for digital transformation in the Egyptian market? and what are the challenges that might occur?

Esam Al Kheshnam: The Egyptian Ministry of Public Enterprise Sector has announced the completion of the digital transformation projects in several companies. This program has grown by 60% in one year.

We plan on introducing our Neo Islamic Banking Solution when the government confirms the new regulations. As for our solutions and services' proposition, we offer a complete Digital Transformation Solution across all our markets.

Locally, we are leading by example as we have digitally transformed our company during Covid. Like many other companies, we have done this by refurbishing our offices to support a hybrid work environment.

In other markets, our team is playing a pivotal role in assisting various clients with their digital transformation – namely, Kuwait municipality, Boubyan Bank, Dukhan Bank and Kuwait Finance House.

Financial IT: How do you assess the recent information security rules issued by the Central Bank of Egypt?

Esam Al Kheshnam: Cybercriminals can compromise highly sensitive data and use it for financial fraud, and other malicious activities.

To counter this phenomenon, the Central Bank of Egypt is adjusting its business procedures and security controls to match the frequent changes in the cybersecurity landscape.

From our end as a solution provider, we continue on updating our solutions proactively to safeguard our customers from potential threats.

Financial IT: In the financial technology field, what are the various risks facing the banking sector, and what is the plan to confront them?

Esam Al Kheshnam: According to Interpol sources, the world has become so digitally

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Mr. Al Kheshnam is a distinguished industry veteran with a career that spans more than 27 years in the fields of information technology and software solutions. Prior to his appointment in February 2017 as the Chief Executive Officer of International Turnkey Systems Group (ITS), Al Kheshnam held numerous senior positions in the field. The most recent being head of the IT Strategic Planning Department at the Central Bank of Kuwait, where he worked closely with the nation's banks and financial institutions to elevate performance standards. During his career, Al Kheshnam has been credited with several notable achievements, including the innovation and management of several advanced IT solutions for numerous renowned regional and international companies.

As CEO of ITS, Al Kheshnam is defining a new vision for the Group as he further underscores the Company's position as a leading provider of quality IT solutions and services for the local, regional and international banking industry.

Al Kheshnam holds a Bachelor's degree in Computer Engineering from the US, and a credential in General Management from Harvard Business School.

connected that cybercriminals are taking advantage of this technological transformation to target loopholes in online networks and infrastructure.

As a solution provider, we consider and cover all possible risks to cope with the security compliance requirements by ddefining valuable data areas to be encrypted, investing in applications and network security elements, focusing on user identity verification and continuously monitoring user activity.

And we have built an efficient and effective incident response mechanism to avert any risks that may arise.

Financial IT: What advice can ITS provide to workers in the banking and data security sector?

Esam Al Kheshnam: We advise employees in the banking and data security sector to follow best practices for financial security compliance. Namely, creating a separate security vertical and appoint specific roles which focus on:

- Developing internal security posture in line with relevant industry standards based on business applicability.
- Building and managing technical aspects of the environment that focuses on all Systems, Networking, Application in terms of identity, access, and data classification.

Financial IT: How would you rate the current financial technology services' market?

Esam Al Kheshnam: There is an unprecedented growth in emerging financial technologies and despite inevitable fluctuations, FinTech will undoubtedly shape the banking sector for the next 20 to 30 years.

The competition will thus increase, which means that service implementation needs to be prompt and dynamic.

That is why we have invested in our teams to be able to deliver ETHIX-NG in the least time required, so the financial institutions can benefit from a faster time to market.

Financial IT: From your point of view, was ITS able to provide easy and safe services to their clients to achieve a profitable economic feasibility?

Esam Al Kheshnam: Absolutely. Since 1981, we have been helping and supporting our clients in developing competitive advantages. Their diversified needs require a highly dynamic company to be able to meet their needs and in return they were able to significantly increase their profits.

Furthermore, our team of consultants can establish business strategies in record timeframes, enabling our clients to stay ahead of their competitors.

Financial IT: Who are ITS success partners?

Esam Al Kheshnam: We at ITS consider our customers as our main partners. We engage with our customers by enabling them to provide the best products and services to their clients by catering the best of breed solutions, services and support.

Financial IT: How can financial inclusion be enhanced using financial technology?

Esam Al Kheshnam: Due to lack of infrastructure in certain areas and countries around the world, reaching the unbanked poses a big challenge to the financial institutions. With smart phones, minimum infrastructure & the right level cyber security, solution providers like ITS are being able to provide financial institutions with diversified digital channels to assist them in reaching their clients across the world.

Financial IT: Does the banking sector need more advanced technological applications?

Esam Al Kheshnam: The increasing demand for a digital banking experience should be met with highly dynamic platforms & services to meet and provide the needed solutions to customers.

Advanced applications will have a beneficial impact on user experience, process efficiency, cost of technology and in reducing human error.

This was the main purpose of building ETHIX-NG in the first place. We built a highly dynamic solution to be able to deliver flexibility to our customers so they can plan and design any service to cater for their time to market initiatives.

Financial IT: What are the digital transformation and banking systems challenges post-Covid

Esam Al Kheshnam: Client behaviour has drastically shifted during Covid. Pre-Covid, financial services industry operations consisted more of physical presence and were driven by long processes.

During and post-Covid, the prevailing situation enforced the transformation to be more digitally driven with faster processes, more streamlined operations and lessened physical presence.

Financial IT: What are the latest systems that the company currently owns?

Esam Al Kheshnam: Firstly, I'd highlight ETHIX-NG which stemmed from our amalgamated decades-long experience in the financial industry.

In addition, we have recently opened our newly built Data Center, an Uptime Institute Certified Tier-III Design & Facility, with SLA 99.98% uptime guarantee.

With these two projects completed and introduced to the market, we are able to provide our clients with the full 360-degree solutions they need, in both the digital transformation and enterprise solutions arenas.

Financial IT: Where do you see ITS in the near future?

Esam Al Kheshnam: We aim to further expand ITS' offerings with our next generation flagship ETHIX-NG solution and to continue being the top solutions and services provider for Islamic Banking.

Financial IT: What book influenced you the most?

Esam Al Kheshnam: Many have, but the one that particularly stands out is "The 7 Habits of Highly Effective People" by Stephen Covey.

Financial IT: What advice can you give to young people?

Esam Al Kheshnam: Never give up on your dreams and always aspire for greatness!

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Next Generation
Banking is Here.
ETHIX NG
Redefining Banking Finance
Islamic
Banking
ETHIX NG is the next generation core banking system by ITS designed to address the challenges of a transforming financial services industry and empower banks to meet customer needs while succeeding in the Digital Economy.
Get started
its.ws

CORE BANKING IN THE CLOUD: THE REVOLUTION IS HERE

We're living in an age defined by disruptive technology, driving a revolution in how consumers engage with everything, from shopping to communication and even banking. These shifting consumer expectations, coupled with the arrival of digital-first challenger banks, have stressed the need for traditional banks to undertake a transformation.

While modernisation at the front end has been underway for some time, that is just the tip of the iceberg; the core technology supporting it also needs to be overhauled to lay the foundations for real innovation. Banks must fully rethink their approach to delivering banking services to the consumer. Technology needs to shift from on-premises mainframes and core solutions to cloud-based, digital-native hosted platforms.

The problem? Most banks' core banking systems are entrenched in a tangled web of legacy code that in most cases needs to be rebuilt from scratch. There has also been a degree of scepticism about using the public cloud as a cost-effective solution.

Some banks have been able to define the route to change. ANZ New Zealand, for example, is making the investment in its core banking infrastructure to better serve its clients and meet emerging needs.[1] In Europe, Santander recently announced plans to digitalise its core banking, having already migrated 80% of its IT infrastructure to the cloud.[2] Others are sure to follow.

New Generations Demand New Experiences

Beyond processing, banking technology determines the customer experience as well as how the bank's brand is perceived. To win new customers, it is critical that banks offer a compelling customer experience right from the get-go.

Just like any other business, banks must continuously seek ways to not only meet current customer wants and needs, but also anticipate and address future requirements. This demands a high degree of flexibility and scalability from their core infrastructure and is a continuous process that requires ongoing investment.

Younger generations are a crucial demographic to consider when determining what next-generation banking should look like. In a recent FIS consumer survey conducted across the UK, 45% of Gen Z and 42% of Millennial respondents said they are likely to use banking services from a digital bank, such as Revolut or Monzo, in the next 12 months, compared to 31% and 20% of Gen X and Baby Boomers respectively. It is clear that banks must deliver an advanced, digital-first experience in order to attract young people who may be seeking their first banking relationships as adults.

The new generation of consumers are digital natives that prioritise fast, seamless, always-on banking experiences. Hence, the new baseline for banking service must be digital, going further than a simple extension of the bank's web interface.

Always On Banking

Many banks have diverted investment from their branches to digital consumer-facing initiatives. This was expedited during the pandemic, when suddenly millions of consumers and businesses needed to be able to conduct their banking remotely, through digital or mobile channels. The shift offered them a financial lifeline exactly when and where it was needed, and while it was born out of necessity, customers quickly realised the speed and convenience digital banking offers.

Customers now have greater choice than ever before. They also have increasingly high expectations for financial products and services that both meet their specific needs and can be accessed from anywhere at any time.

Incumbent banks face a hurdle in this transformation if they are intent on managing through legacy systems and technology, but to ignore the benefits of a digital-first environment would be a mistake. Core banking providers can take these banks on a modernisation journey, by replacing their technology with a digital, cloud-based core solution and helping them manage

[1] *Source: ANZ New Zealand to move to FIS Modern Banking Platform*
[2] *Santander digitalizes its core banking with cloud technology to improve service and efficiency*

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About Silvia Mensdorff-Pouilly:

Silvia Mensdorff-Pouilly is a Senior Vice President of Banking & Payments in Europe, FIS.

Silvia has over 20 years of experience in payments and fintech across all areas of the value chain, from consumer payments to transaction banking. She is passionate about making payments and banking seamless and supporting customers, with an emphasis on leveraging innovation and bringing parties together. She has a deep understanding of the complex enterprise needs of banks, processors, central infrastructures, fintechs and other payment services, from fraud to immediate payments, PSD2 and open banking.

Silvia is a cofounder and advisory board member of European Women Payments Network.

through the change. This approach can ease the burden of integration on the bank and ensure customers experience minimal service disruption.

A Route to New Revenue

Cloud and a digital-first strategy are inextricably linked. Applications that are not cloud-native are less flexible and require significantly more resources to build and develop. Conversely, cloud-native applications can quickly be updated to adapt as the market shifts. They are also usually designed to run in an infrastructure as a service (IaaS) environment, which is stateless and technology independent, allowing for further flexibility.

The cloud also brings other immediate business benefits to banks. Internal cost savings can be made, with a cloud solution consolidating several stand-alone applications, removing team siloes, and reducing high maintenance costs. The interoperable and scalable infrastructure supports organic growth and the ability to innovate and adapt to ongoing regulatory and compliance changes.

Because cloud-based core banking enables a more plug-in oriented model, banks can unlock additional sources of revenue by tapping into new services for their customers. And because cloud-based technology is scalable, there is no technological bottleneck on the bank's future growth.

While there have been concerns in the past about the security of cloud, there are now solutions that offer the latest advancements in cloud security, monitoring, resiliency, and operational analytics. Public cloud infrastructures are increasingly vital to facilitate the shift in core banking, and offerings such as Microsoft Azure can uphold the highest levels of security, while helping to meet the demands of organisations wanting to deploy and easily expand their solutions across markets and verticals.[3]

In short, cloud empowers banks to quickly transform into a new era of digital banking, in which they no longer spend time and resources supporting proprietary infrastructure, and can become much more agile.

What's the Delay?

With so much on offer, why have banks taken so long to embrace cloud? A bank's number one concern is security, and by owning the infrastructure, many banks feel they are more in control. Secondly, banks that are still reliant on legacy systems often cite the high costs of transformation as the main reason for holding back, along with any potential disruption caused by switching.

While some banks may feel their highly cultivated legacy system is meeting their customers' needs, the reality is that the emerging digital-first generation expects more from their banking experiences. As consumer habits continue to evolve, the banks that proactively embrace change will remain competitive.

Banking on the Cloud

While some banks may try to skate by with a mobile app stacked on top of aging and inflexible technology infrastructure, the simple fact is that aging architecture cannot flex. Eventually these banks will experience issues like those of organisations that don't modernise at all.

Banks need a cloud-enabled core to facilitate real-time processing and operate a model that truly puts the end-user first, allowing for 24/7 multichannel customer interactions.

There is no doubt that digital-native, cloud-enabled core banking technology will be a gamechanger for European banks' digital transformation.

[3] *Source: FIS' Modern Banking Platform Now Available on the Microsoft Azure Cloud Platform*

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Financial IT
Innovations in FinTech

FINANCE LEADERSHIP SKILLS NEEDED IN AN UNCERTAIN ECONOMIC ENVIRONMENT

Just when it looked like things were getting back to normal post covid, the future economic outlook took a downward turn.

This uncertainty has been caused by several tailwinds locally and internationally. There are complications related to importing and exporting goods post-Brexit in the UK, and overseas the Ukraine war has given stock markets the jitters and resulted in the prices of energy, components and raw goods spiking.

This has led to inflation rising to 9%, the highest level for forty years. Unfortunately, the economy is likely to worsen with further inflation rises and a predicted oncoming UK recession.

It's a difficult time for CFOs as their company's costs are likely to increase, and the fundraising market is becoming more challenging.

This requires a slightly different approach to normal, with finance leaders needing to perform the role of "wartime CFOs," by cutting costs, managing spend tightly and automating the finance function to be more productive and agile.

Cut costs

Sometimes the obvious needs stating – in the first instance finance leaders should cut costs.

Their companies will likely have several software subscriptions that are no longer being used. This could be due to them no longer fulfilling requirements, fewer licenses being required, or staff members simply having forgotten that they took subscriptions out in the first place.

Marketing spend will be put under more pressure to demonstrate a return on investment, and initiatives related to brand should be reconsidered.

If companies need to continue hiring, external agencies should only be used if roles haven't been filled after three months.

These actions won't make CFOs popular, so they will need to communicate to stakeholders that these changes are necessary for the long term success of their companies.

Manage spend tightly

In the current uncertain economic environment, CFOs need to manage company spend more tightly to minimise wastage and maximise impact.

Using a spend management platform like Soldo to manage company expenditure will enable employees to procure products and services to perform their roles successfully, while also having controls in place to ensure cash is not overspent or misappropriated.

These solutions are far superior to corporate cards that create pain points due to team members needing to access cards from budget owners and senior employees. This makes it hard for specific individuals to be accountable due to their shared use,

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and can result in employees spending unnecessarily as transactions can't be traced back to them.

The Plymouth College of Art successfully moved away from using over 70 corporate cards to Soldo. This resulted in the finance team managing around 100 individual prepaid cards. This required less effort from the finance team, due to Soldo's self-service features and streamlined system.

Mark Taylor, Plymouth College of Art's Director of Finance says:

"We've had very good feedback from the users, and that's really, really important. In fact, it's probably the most significant thing – because at the end of the day, if you want something to be adopted and used well, it needs to be used and trusted. "

Additionally, the growing trend of employees working from home creates further security concerns around the sharing of corporate cards.

Instead, spend management platforms enable employees to transact easily by using their own virtual cards to pay online, or in-store via Google Pay or Apple Pay.

These solutions allow finance leaders to create rules related to business areas where cash can be spent, alongside limits.

Unlike corporate cards, CFOs have real-time visibility on spend across the business, with transactions categorised instantly. This creates opportunities for agile decision-making related to which areas can have spend cut, alongside highlighting activities to double down on based on their impact.

The chart of accounts on spend management tools can also be set up to reflect the VAT treatment of different categories automatically. This means that companies stand the best chance of maximising quarterly VAT repayments.

Enhance automation

Enhancing automation across finance and the wider company can help keep costs down by employees being more productive, and minimising the need to make additional hires as firms grow.

It's all about being more efficient with the tools you use, with productivity gains benefiting employees too. Paying staff to enter data is inefficient and unmotivating, and they should be freed up to spend their time on more value-adding work.

Finance tools that integrate directly with accounting software will also reduce data duplication and human errors.

Spend management tools connect directly to cloud accounting software, duplicate their chart of accounts, and import spend transactions that can be reconciled similarly to bank feeds.

Frequent cash flow forecasts

Running out of cash is one of the most common reasons for business failure. To put it simply, businesses that can't get their sales invoice paid on time will have a strain put on their cash and struggle to pay their suppliers.

In the current uncertain environment, CFOs need to monitor their cash regularly to meet commitments and ensure there is sufficient runway to negotiate future funding rounds favourably. Potential investors who believe there is the risk of your business running out of cash in six months may be put off investing or choose to do so at a lower valuation.

If automation across core accounting software and direct add-ons has been leveraged, it's now easier than ever to generate accurate cash flow forecasts on the fly, within cloud tools rather than manually on spreadsheets.

At a minimum, cash flows should be created monthly and weekly if businesses are tight on cash.

You can generate more accurate forecasts by using cash flow tools that use AI and historic payment data, such as Fluidly, to predict when invoices will be settled. For example, customers who commonly pay two weeks after due dates are likely to continue paying late in the future.

On the CFO Playbook podcast Navepreet Randhawa, CFO at Minna, a subscription management software company explained how he uses cash flow forecasting tools to plan for a range of different scenarios:

"You have to analyse what [happens] if this contract doesn't work out. What if another contact doesn't come in or they pay 50% of the value?"

Managing spend and automating the finance function enables sustainable growth

Changing your behaviour in line with these suggestions isn't about holding back growth, it's about finetuning your company's performance to maximise impact and increase the value of the business. And when the good times return you'll be in an even stronger position to accelerate your trajectory.

Nick Levine, Strategy & Finance at Soldo

Nick is a chartered accountant and fintech consultant. He was formerly the Head of Enterprise at ICAEW, and Advisory Lead at Propel by Deloitte

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Anders la Cour,
Chief Executive Officer,
Banking Circle Group

SOLVING THE PUZZLE OF INTEROPERABILITY

It's nothing new to say that digitalisation is transforming the way we do business across the globe, and that, paradoxically, the world is actually becoming smaller through that process. But despite this revolution, the underlying infrastructure in many industries remains largely unchanged.

The front-end of commerce today has already been transformed and globalised – I can buy something online from a different country and expect a great customer experience and fast delivery – but the back-end process, which the customer doesn't see, is still outdated and often disconnected. While there is undoubtedly a huge amount of innovation and digitalisation happening, it is generally still in silos.

In the payments world, there is a real lack of interoperability, whether it's between payment systems and schemes, the connections between different geographical markets, or even between fiat and digital currencies. As companies accelerate the digitalisation of their customer and supply-chain interactions, there is a growing need for modern-age financial solutions.

New players have disrupted the status quo in banking and payments, but in this new landscape there is a need for back-end financial services providers who can handle the nuances of infrastructure, leaving FinTechs to focus on their services and their customers.

The banking and financial services sector is seeing some really interesting trends at the moment. Following the 2008 financial crisis, FinTechs came into the market and each attacked specific parts of the value chain – whether it was payments, lending, or FX. That shook things up, as these new entrants were providing better customer service, and in some cases were both cheaper and faster than the incumbents.

But a decade on, we're seeing yet more change – FinTechs are now looking to offer a range of products and services that combine the benefits of an efficient user experience and trust in a brand. Organisations are rebundling the products that were unbundled during the first wave of disruption. That, coupled with the accelerated digitalisation driven by the pandemic, has led to businesses increasingly recognising the value of delivering multiple solutions over a single platform online.

It's a shift that echoes the evolution we have already witnessed in other industries, such as telecommunications, where bundling as a strategy has helped offer more value to customers and maximise customer lifetime value.

Multi-solution platforms are great for improving customer stickiness – they allow you to go beyond solving just one problem for the customer, and instead to offer a complete lifecycle of financial services. By expanding their propositions, FinTechs can ultimately better serve the end-customer. But to do that well, they need to provide both the services that customers want, as well as those that they might need but not yet realise it – all without compromising on brand value or mission. It can be a tough balance to strike, but when done well, bundling delivers competitive advantage to individual organisations and improves the FinTech industry's value as a whole.

According to the latest Global Banking Annual Review from McKinsey, the valuation gap between the leaders in the banking industry and those trailing behind is widening, and capital markets are anticipating a 'great divergence' between the leaders and followers. Examining how financial services firms can future-proof their business models, the report suggests that "top performers bring customers into an ecosystem, connecting them with other services and building a dynamic and distinctive customer experience."

It's clear that there is great opportunity for financial services firms to continue to harness digitalisation and innovation in the current landscape, with rebundling as the latest phase of the fintech evolution. But the puzzle piece that still needs connecting is the interoperability of financial systems and spaces, and the connections between global markets.

We see ourselves at Banking Circle Group as a bridge to create that interoperability. We were built for the digital economy, and as a multi-solution platform we enable payment companies, banks and global marketplaces to deliver cross-border banking and embedded finance products to their own customers through our next generation technology.

We want to facilitate easy movement between financial systems and services, regardless of the markets that our clients and their own customers are in. As a back-end provider for other financial services businesses, our focus is on taking away the complexity and handling the infrastructure, leaving our clients to focus on what they do best.

At the centre of our ecosystem is Banking Circle S.A., a payments bank that is fully licensed yet free from the legacy systems that can make traditional business banking slow and expensive. The bank delivers global payments and banking services by connecting to the world's clearing systems, and was built with a mission to increase efficiency and reduce the costs around cross-border transactions.

Since its launch in 2016, Banking Circle has grown rapidly and we have committed significant investment to the integration of a vast network of local clearing and payments schemes to build a super-correspondent banking network. Add to that the rich set of complementary solutions within our Group ecosystem, and we have a full stack solution for today's commerce players.

As a Group we have already processed more than $250bn in transactions volumes and are growing at pace. Now, we're preparing for a bigger expansion into the U.S. market. It's a region I see our interoperability strategy as being a great fit for, as the North American financial system is unique and remains fragmented.

As a Group we'll be providing banking, payments and embedded finance services. With Banking Circle S.A. being licensed in both Luxembourg and the U.S., we won't be going up against existing local banks in the region, but rather will be enabling those in the U.S. to operate in and out of the country and into any country in Europe where we have clearing access, and vice versa. Through us, banks and financial institutions in the U.S. can enable their own customers to operate in Europe and receive domestic payments from the region. Two of our Group businesses are already live in the U.S., which means we can also offer business payments and card issuing through B4B Payments, and embedded finance from YouLend.

Our focus in the U.S. will really be on enhancing the global payment capabilities of our clients in the region and making cross-border trade easier, all by leveraging our financial technology platform to act as a connecting bridge.

BANKING CIRCLE

Ralf Gladis,
CEO,
Computop

HOW PSPS ARE STREAMLINING ACCOUNTING PROCESSES FOR SELF-SERVE MACHINES

Where once a vending machine provided a bag of crisps, a chocolate bar, or a cup of coffee that was all too often undrinkable, today's modern, IoT-enabled self-service units are capable of offering the weekly groceries and ten different kinds of freshly brewed, fine quality beverages. What's more, the purchase can be made with the minimum interaction: just the tap of a card or mobile, or a biometric signature and off you go.

Smart vending has never been so popular. Take Costa Coffee for example. After purchasing motorway service station coffee vendor, Coffee Nation, in 2011, Costa owner Whitbread made sure that its newly branded CostaExpress machines could be found in motorway service areas, on petrol forecourts and in WHSmith retail outlets. With multiple different varieties of hot drinks they are now reportedly the largest coffee machine provider for forecourts in the UK. Previously customers would pay at the till, rather than at the machine itself, but Costa is now addressing this by including an in-built payment terminal, or enabling payment through its mobile app.

Not to be outdone, in 2021, Pret a Manger announced that it was launching a trial 'Pret Express' coffee-to-go station which would be available in locations unattended by Pret baristas, including convenience stores, universities, healthcare facilities, workplaces, and of course, petrol forecourts. Payment is an in-built function of the unit.

Apart from reinforcing and expanding its brand, Pret is taking advantage of smart vending to create an efficient retail solution that can deliver its familiar produce without the need to pay for baristas, or any other member of staff. These digital, IoT-enabled machines use AI and analytics to track usage patterns, enable fast transactions, and, because they gain customer data, they also have the power to provide personalised experiences. What customer wouldn't want their usual order of a large caramel macchiato to be delivered without lifting a finger?

But it's not just coffee providers that have upped their game. In the pharmacy sector, medical vending machines are being used to dispense prescription medication and medical devices in clinics, hospitals and other health facilities and again, payment is managed through an interface in the unit with some facilitating mobile payments to improve efficiency.

The key to the success of these smart vending units is that customers can quickly purchase from a favoured brand, pay and go. Often managed as franchise operations, the franchisee will have a designated territory from which it can operate the rented unit, and the more popular it is, the more it can earn. The franchisee can work within a business framework that has already been tested and in return for this, and the support and training it receives, it will be liable to pay a percentage of the profit they make on every sale to the franchisor or owner.

Managing the complexity of vending machine accounting

Of course, this has the potential for complex accounting. How does the franchisee keep track of each sale, and how doe it manage the process of paying what could be hundreds of small amounts to the franchisor every day? The answer lies in the IoT element of the machine, and its integrated payment facility.

Because each of these vending machines is connected to the Internet they automatically provide information with every transaction made. At the heart of this is the payment service provider (PSP) who manages each transaction, and as an extra string to their bow, PSPs are beginning to offer more to help entrepreneurs involved in the smart vending machine business.

Replacing the traditional bookkeeping process of producing invoices and making bank transfers for every payment that is due from the franchisee to the owner of the unit, PSPs like Computop are beginning to offer 'debtor management' services. This means that the PSP collects the monies from customers, calculates how much is owed by the franchisee, or 'debtor', to the unit owner (or to a wholesaler if they too are involved in the chain) and allots the amounts to be paid to each party.

The constant micro-payments are transferred seamlessly by the PSP ensuring that the franchisee keeps on top of the money they owe, while the owner receives instant transactions with no negative impact on cashflow. In effect the PSP is removing the complicated and time-consuming process of accounting for each unit.

Unique usage information can be turned into a business advantage

Having access to information about the many transactions that are made at vending machines, also puts PSPs in the driving seat when it comes to extracting other useful data, such as who is using it, when and how. The power of this real-time data allows the franchisee to better understand the customers that are using the machine, their payment habits, the performance of specific products, and even product lifecycles, all of which can potentially provide insight on how footfall can be increased to inform business decision making.

Away from vending machines, the same principle applies to other smart or IoT enabled service units. Payments made at electric vehicle charging stations, for example, are processed through payment service providers, who are uniquely positioned to provide data on usage. Given the difficulties for EV drivers of finding suitable, and available, charging facilities and the various cost structures depending on the provider, that data could be put to very good use. Different charging rates for off-peak and peak times that help to manage electricity grid load and spread energy demand is just one example, but this can only be exploited if the data is used to deliver meaningful information.

The message is clear, payment service providers are at the heart of the self-serve revolution. As smart vending machines and other autonomous services become more and more prevalent, so PSPs will be required to expand their offers and dig into the data that is at their fingertips. Not only will this streamline payments between parties, it will also unveil a wealth of insight that can make the difference between success and failure for business people with bright ideas.

Computop

PROGRESSIVE FINANCE FOR A CHALLENGING WORLD: DEVELOPING ADAPTABILITY

Significant changes in business and regulatory requirements have created a challenge all organisations face – the need to embrace technology. Companies must embrace digital adoption to improve existing processes continuously.

Modernising operations through digital adoption helps manage risk and improves efficiency and employee and client satisfaction. An inability to adapt can lead companies to fall behind, especially when their clients seek innovative ways of working.

A lack of trust and understanding of emerging technology is often the most significant barrier to digital adoption. Assessing and adopting new technologies within the governance and regulatory framework provides a holistic approach to digital innovation across organisations. Understanding how new technology works within an existing governance framework gives end users the confidence to adopt it as a valuable and helpful tool. At Phundex, we've spent years helping organisations transform their organisations to improve efficiency and regulatory compliance, encouraging the use of technology to reduce administrative inefficiency and free up time for more value-added work. Some consistent points impact how successfully organisations can embrace these changes and encourage adaptability.

Thinking about digital adoption as just another technology project is a sure pathway to resistance. Organisations need to think of technology as a tool to streamline and simplify the way work is done and to understand that this is a continuous cycle, not a one-time event. Being open to this ongoing change is key to increased adaptability for the organisation and its internal and external stakeholders. Understanding and encouraging this is fundamental to successful adaptation for modern business. It must be encouraged top-down from the senior management within an organisation and supported throughout the company to be effective.

For financial services businesses, there is the added complexity of regulatory requirements and ensuring compliance with myriad complex issues. A well-defined regulatory and governance framework to assess digital opportunities is key to successful adaptivity. That framework is often overlooked in a rush to buy technology tools to solve specific problems. A more holistic approach to that framework and how technology fits into it will make decisions about using technology more focused.

Jersey, one of the world's leading offshore international financial centres, is focusing on modernisation amongst businesses. The drive to adopt technology is encouraged by international regulatory bodies, including the OECD and Moneval, and echoed by the Jersey regulators. In July 2022, the Jersey Financial Services Commission (JFSC) released a report regarding the use of Regulation Technology (RegTech) on the island. With 78% of firms agreeing that RegTech is necessary for achieving compliance, there is a growing sentiment toward adopting technology to assist businesses in their operational duties. The report also shows that adoption is a long-term goal of organisations, but anecdotal evidence suggests that the delayed adaptability is due to a concern about how the regulator will view technology. Having the regulatory framework noted above will help regulated businesses to clearly understand and explain to regulators how technology will enable them to meet their regulatory requirements. This, in turn, encourages the adaptability necessary to meet the constantly evolving business requirements faced today by all businesses.

Adapting to a hybrid working environment during COVID was the perfect storm that encouraged firms to adopt more technology and different ways of working. Aside from the additional flexibility and enhanced work-life balance for employees, organisations were exposed to the power of technology and its true reliability and potential. The pandemic served as a silver lining in the shift of mentality towards the need for harnessing digital adoption more than ever. A compelling case for adoption, businesses need to remember how many changes were required during the pandemic and continue encouraging that adaptability in the future.

The development of blockchain-based platforms has given rise to increased transparency using technology. This blockchain technology provides an auditable, valid ledger of transactions which cannot be tampered with. By utilising such technologies aligned with or to replace legacy systems, data access and integrity is enabled. For example, through digitising authorised signatories, a substantial amount of administrative work is automated, economising time and cost of internal processes. In terms of accessibility, this adoption must also be viewed from an internal perspective, where businesses have begun to utilise cloud computing in place of legacy networks. Hence, employees are able to access data where and when they need it, especially with the embracement of hybrid working environments. The myriad of FinTech solutions today can make the choice overwhelming and a focused approach to selection is vital for successful adoption.

Businesses need to look at how easy the technology is to implement with existing systems, but also how easily employees can use it. Optimising the time-to-market cycle is a vital aspect for the success of many businesses.

It is therefore important for the business to be thoroughly assessed to determine where technology will best enhance the efficiency of this cycle. Automating current manual tasks is pivotal to concentrating, enabling teams to focus on business growth and freeing time for clients.

Phundex is a cloud-based platform which requires no technical integration, allowing rapid deployment and quick adoption. Designed to support the way businesses operate, it is easily customised to meet current and future business requirements without the need to technology teams and software developers.

Many organisations today operate on a global basis, with teams scattered around the world.

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By shifting from emails and ad hoc tools to technology enabled remote working teams, transparent, effective collaboration and communication are achieved.

To face the challenges of today, organisations need to be able to utilise technology to manage the risks of tomorrow. Successful adoption requires selecting tools with minimal technical integration requirements and easy adoption with existing processes without increasing operational risk. Through an increased reliance on digital technologies to leverage operational management, people skills can be leveraged to enhance the productivity and growth of the business where it really matters. It is no longer a matter of a choice for organisations to embrace digital adoption, as, without it, they will inevitably be unable to keep up with increasing regulation and business requirements, particularly in the financial services industry.

Heather-Anne Hubbell, CEO, Phundex

Heather-Anne Hubbell has an extensive record of transformation in the risk, regulation and finance areas within Financial Services. In her various roles as lawyer, banker, risk manager and consultant, she has helped improve transaction and process management, leveraging technology to reduce operational risk, increase regulatory reporting capability and enhance collaboration across teams.

Phundex

Phundex is a collaboration platform for people, processes, and technology, allowing transactions to close faster and processes to be completed more efficiently. Our centralised process, transaction and data management hub improves efficiency, reduces operational risk and improves communication across stakeholders. We've worked in the industry for years, so we designed Phundex to streamline and standardise processes, improve go-to-market time and provide better transparency and disclosure.

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Financial IT
Innovations in FinTech

About Rene Siegl:

HOW PAYMENT ORCHESTRATION EMBRACES THE DIGITAL TRANSFORMATION OF PAYMENTS IN A CONSTANTLY CHANGING WORLD

In the wake of an ever-evolving world, our financial values are transforming as well, changing the long-lasting nature of ownership. Today, entrepreneurs increasingly rely on sharing assets to build businesses rather than investing vast amounts of time, money, and resources into creating their own alternatives. Businesses built on shared resources have every chance to become highly profitable ventures, as proven by multi-billion dollar Uber and Airbnb and countless less well-known but equally successful brands.

Let's consider Uber, one of the premier taxi services used worldwide without a single car in its possession. Fifteen years ago, we could not even imagine building an empire without having at least a couple of years and thousands of dollars in storage. However, the sharing economy has made this possible by allowing entrepreneurs, including those in financial technology, to scale their businesses using rented resources.

The sharing economy is a concept built on the willingness of people or organizations to rent or borrow goods instead of buying and owning them. It emerged as a peer-to-peer interaction of acquiring, supplying, and sharing access to services and goods. But, over time, the sharing economy has evolved, incorporating a wide range of online economic transactions that now include business-to-business interactions.

Fintech has given the sharing economy a warm welcome. At the time when to become a payment service provider, one is not required to own the payment infrastructure or source code, the world of payments has opened the door for new progressives: ready-made white-label payment solutions. Essentially, a white-label payment solution is the one in which the service provider develops and maintains payment software and infrastructure and rents it to other fintech companies, for instance, payment gateways, for them to use as their own.

The payment orchestration platforms rank among the most advanced white-label payment solutions. POP is software that integrates and manages multiple payment processors and service providers on a single software layer, automating the entire process of online payments. Akurateco, for example, is a Netherlands-based payment software provider that offers a white-label payment orchestration platform with cutting-edge technologies, including cascading, smart routing, advanced fraud prevention, and automated invoicing among others. It is a ready-to-use up-to-date payment infrastructure that a payment gateway provider can use instead of developing one from zero.

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The sharing economy, also known as the platform economy, adheres to this model. Simply put, the payment orchestration platform can make its user an Uber in the world of payments by renting a ready-made payment infrastructure for efficient transaction processing. Surely, there is an option to build a payment system from scratch, but there is no need to reinvent the wheel: the payment orchestration platform already contains the latest technology for robust and stable payment acceptance. At Akurateco Payment Orchestration Platform, such issues are covered:

1. Shorten time-to-market

Based on most conservative estimates, developing a payment solution from zero takes six months to a year, whereas a white-label platform's time-to-market can be a matter of days. Furthermore, the platform will not require additional resources, such as a team of developers, time, or money investments.

2. Reduced processing cost

Among the main features of the payment orchestration platform is routing technology. Payment routing selects the channel for each transaction that is more likely to approve it and has the lowest processing fee. This way, the provider increases the approval ratio, saves on transaction fees, and improves customers' checkout experience. As a result, saving up to 50% of the processing cost.

3. Access to a variety of ready-to-use third-party integrations

Users get access to payment connectors through a single integration to the payment orchestration platform. In other words, the system is already integrated with the most relevant banks, payment gateway providers, and other value-added services. As for Akurateco, there are more than 200 of them. Also, an integration to a new payment connector can be developed within two weeks upon request.

4. Fraud prevention

With the digitization of payments has come the development of fraud. Indeed, fraud becomes increasingly sophisticated, being difficult for anti-fraud algorithms to detect and prevent. Therefore, payment providers should only use trustworthy and powerful anti-fraud rules and filters. For example, Akurateco has an advanced internal fraud prevention system to detect, analyze, and prevent potentially fraudulent transactions, keeping the approval ratio high. Integrations to third-party anti-fraud providers for identifying potentially fraudulent transactions and informing customers about them are also available on the platform.

5. Security compliance

Since the payment information contains sensitive data, the provider must comply with security standards. In the case of a white-label payment platform, the software is already compliant with all the required security standards, including the Payment Card Industry Data Security Standard (PCI DSS).

6. Simple customization

A white-label payment solution implies simple customization of the payment infrastructure. The possibilities of customization vary depending on the setup option. SaaS payment orchestration platform has its limitations in personalization but can be customized by Akurateco at the client's request. Source code purchase, however, is a fully customizable option. The design is also entirely brandable and incorporates the company's style, color, and logo.

In view of the various setup options available, entrepreneurs can choose to work with rented software or create their own payment solutions based on a state-of-the-art white-label platform. Akurateco has three installment options. SaaS allows clients to rent the software with its maintenance and development done by Akurateco. On-Premise implies that the platform can be installed on the servers of a hosting provider or cloud infrastructure, with Akurateco being in charge of maintenance. Source Code purchase provides them full ownership and authority over the software, including the right to change the code.

As the payment industry undergoes a rapid digital transformation, payment orchestration platforms will continue to grow in demand. Akurateco aims to provide a solution that addresses the current challenges the industry is facing. With the help of the above-mentioned technologies, the company is expanding the borders of online payments, making simple, cost-effective, and efficient transaction processing accessible to payment service providers and merchants.

Vladimir Kuiantsev is the CEO and Managing Partner at Akurateco Payments Orchestration Company, founded in 2019. Since 2020 Vladimir has been leading the overall management of Akurateco, which delivers easily customizable PCI DSS certified white-label payment software to payment service providers and merchants worldwide.

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IN A MOBILE-FIRST WORLD, DIGITAL TRANSFORMATION STARTS AT THE CORE: ACCOUNT SECURITY

A decade ago, banks could still expect customers to appear in-branch, with ID in hand, to conduct important transactions or confirm their account details. The inconvenience was an understood part of the need for identity verification.

Fast forward to now, everything is online, mobile, and instantly accessible. From groceries to real estate, users expect to have their needs met within seconds on their smartphones.

Banking too is increasingly mobile-first, if not mobile-only.

Challenger banks that are digital-native from the ground up have met with early success: in a survey of personal and business account holders by the UK's Customer and Markets Authority (CMA), the challenger banks came out on top for customer experience compared to traditional players.

Account experience is at the heart of relationship banking in a digital world. But challenger or incumbent, banks are still dealing with people's money, so they need to ensure accounts remain safe.

Expensive, cumbersome security isn't what customers want – but financial institutions still need extra factors of assurance to verify access. Default digital methods, such as SMS OTPs, are frustrating to users and notoriously vulnerable – but other alternatives introduce complication to a process that needs to be both streamlined and secure.

There's now a verification solution that solves for both requirements.

Mobile banking: a revolution

The smartphone has become the catch-all device for modern life.

Not long ago, you needed to carry your keys, wallet, mobile phone, MP3 player, and more. Now, you only need your keys and mobile phone – and soon you may not need physical keys at all.

Banking is the same – according to Insider Intelligence, 89% of people use mobile banking, including a whopping 97% of millennials.

Account security needs to be mobile-centric and airtight, as well as comply with regulations such as Strong Customer Authentication (SCA).

The most traditional method of step-up security, the SMS OTP, can be spoofed, compromised, rerouted, or sent on to fraudsters, a flaw that has been exploited in high-profile cryptocurrency heists and personal data breaches.

Most banks now look elsewhere for strong customer authentication that relies on a strong possession-based or biometric factor. But doing so creates new problems, as the experience once again becomes disjointed, introducing complexity and frustration to an experience customers want to be seamless.

The UX dilemma

When you compete closely against other players for customers, the better UX will win out. Smooth, easy customer experiences are assumed, but bad experiences are talked about.

There's a wide array of MFA alternatives that banks are using to increase account security for online and mobile banking. From handheld card readers with time-based PIN codes, IVR and call-back, device binding with biometrics, and even requiring scans of passports and documents.

These fixes provide the theatre of tighter security, but they're both expensive to implement and support, and complicate the customer journey with fiddly external requirements or biometric technology barriers.

Meanwhile, tolerance for these delays and friction has dropped dramatically: 68% of consumers abandoned a financial app in the past year, an increase compared to 2020. It's hardly surprising, when technology that should be making life simpler is getting more complex.

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Paul McGuire, CEO-Founder tru.ID:

Global mobile verification platform tru.ID is Paul's third venture, building on over 20 years of entrepreneurship in telecoms, mobile and financial services. Prior to tru.ID, Paul founded Paymo Inc which was acquired by Boku, where he became Board member and ran worldwide business development. Prior to Paymo, Paul was co-founder and COO of mBlox, pioneers of mobile messaging, building a business active in over 50 countries that was acquired by Sinch. Paul's early career was at Booz, Allen & Hamilton. Paul holds an MBA from INSEAD and an Engineering degree from Cambridge University.

Customer authentication should take place all within the mobile banking experience, with no need for extra hardware or context switching.

A false perception in security is that the more complicated a solution is, the more secure it is. However, a really simple security process is not only more airtight – it also increases user satisfaction.

Modern user-friendly security: SIM-based authentication

The SIM card is a secure possession factor with a unique advantage. Every customer already has one at all times, in their mobile phone – and they're very motivated to keep it safe.

SIM-based authentication is how mobile networks already verify their 6 billion customers every time they make calls or use data in order to charge them. No extra credentials are needed to 'log in' to a mobile network – authentication happens automatically in the background between the SIM card and the operator.

Now, tru.ID makes the same network authentication available to banks and FinTechs for a stronger method of customer and transaction authentication.

By checking real-time presence of the expected SIM card directly with the mobile network, tru.ID verifies possession of a mobile number against the network-issued SIM card, thereby providing the device-binding checks needed for SCA-compliant authentication.

SIM-based verification with tru.ID is silent, and therefore provides three advantages compared to existing solutions:

1. tru.ID is phishing-resistant and tamper-proof. When there's nothing to intercept or share, like PIN codes or passwords, there's no easy way for attackers to takeover accounts.
2. tru.ID keeps verification within the app environment. There's nothing extra that's needed – nothing to type, upload, tap or use separately like card readers.
3. tru.ID does not collect or store any personally identifiable information during verification. tru.ID simply provides a yes/no verification from the network.

Verification security that was only available to mobile networks themselves, or required integration with multiple parties, is now open to all from a single technology platform that is live in over 20 countries, covering 2bn+ mobile accounts.

To find out how tru.ID silent SIM-based authentication can accelerate your digital transformation, deliver innovation in customer experience while complying with regulations, look no further than https://tru.id.

tru.id

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Tobias Hann,
CEO,
MOSTLY AI

BANKING ON SYNTHETIC DATA

Banks and financial institutions are aware of their data and innovation gaps and AI-generated synthetic data is their best bet.[1] According to Gartner, by 2030, 80 percent of heritage financial services firms will go out of business, become commoditized or exist only formally but without being able to compete effectively.

"A pretty dire prophecy, but nonetheless realistic, with small neobanks and big tech companies eyeing their market. There is no way to run but forward. Survivalist banks and financial institutions need a strategy in which creating, using, and sharing synthetic data is a key component," says Tobias Hann, CEO of MOSTLY AI.

Synthetic data is generated by AI trained on real-world data. The resulting synthetic data looks, feels and means the same as the original. It's a perfect proxy for the orignal, since it contains the same insights and correlations, plus it's completely privacy-secure with zero links to the original data.

Easy-to-deploy data science use cases in banking demonstrate clear value from the adoption of synthetic data. These include AI, advanced analytics, and machine learning; data sharing; and software testing. Benefits are echoed when you take a closer look at banking trends in 2022 as well as the continuous tightening of data privacy regulations.

Synthetic data for AI, advanced analytics, and machine learning

Synthetic data for AI/AA/ML is one of the richest use case categories with many high-value applications.[2] According to Gartner, by 2024, 60% of the data used for the development of AI and analytics projects will be synthetically generated.

"Machine learning and AI unlock a range of business benefits for retail banks. These include advanced analytics which improve customer acquisition by optimizing the marketing engine with hyper-personalized messages and precise next-best actions. Intelligence from the very first point of

About Tobias Hann:

Tobias Hann joined MOSTLY AI in 2019 and became CEO in 2020. He is a technology enthusiast with a deep technical understanding of software, data and machine learning, and has a passion for customer centricity and innovative product development. Tobias holds a PhD from the Vienna University of Economics and Business, and an MBA from the Haas School of Business, UC Berkeley, and is currently based in New York. Prior to joining MOSTLY AI, he worked as a management consultant with the Boston Consulting Group and as Co-Founder/MD of three start-ups. Tobias' leadership and consulting experience spans 15 years in the US, Europe, and the Middle East, across diverse industries including enterprise software, insurance, transportation, education, and telecommunication. Whether it's winter skiing or summer hiking, Tobias loves to travel, often heading for the nearest mountainous area for a healthy escape.

[1] *Source: Gartner Says Digitalization Will Make Most Heritage Financial Firms Irrelevant by 2030, 29 October 2018; Gartner.com*

[2] *By 2024, 60% of the data used for the development of AI and analytics projects will be synthetically generated, 24 July 2021; Gartner.com*

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contact increases customer lifetime value. Since synthetic data is not personal data and contains all the intelligence of the original, no customer consent is needed to harness its power," says Hann.

Another benefit of synthetic data in AI/AA/ML is the lowering of operating costs should decision-making in acquisition and servicing be supported with well-trained machine learning algorithms. In addition, underserved customer segments can get the credit they need by fixing embedded biases via data synthesization; and it facilitates mass-market AI explainability which is increasingly demanded by tech-savvy customers.

Synthetic data for enterprise data sharing

Open financial data is the ultimate form of data sharing.[3] According to McKinsey, economies embracing financial data sharing could see GDP gains of between 1 and 5 percent by 2030, with benefits flowing to consumers and financial institutions. More data means better operational performance, better AI models, more powerful analytics, and enhanced customer-centric digital banking products.

The idea of open data cannot become a reality without a robust, accurate, and safe data privacy standard shared by all industry players in finance and beyond. This is a vision shared by Erste Group Bank's Chief Platform Officer, Maurizio Poletto:

"Imagine if we in banking use synthetic data to generate realistic and comparable data from our customers, and the same thing is done by the transportation industry, the city, the insurance company, and the pharmaceutical company, and then you give all this data to someone to analyze the correlation between them. Because the relationship between well-being, psychological health, and financial health is so strong, I think there is a fantastic opportunity around the combination of mobility, health, and finance data."

Synthetic test data for digital banking products

One of the most common data sharing use cases is connected to developing and testing digital banking apps and products. Banks accumulate tons of apps, continuously developing them, onboarding new systems, and adding new components. Manually generated test data for such complex systems is a hopeless task, and many revert to the risky use of production data for testing systems.

Banks and financial institutions tend to be more privacy-conscious, but their solutions are still suboptimal. Time and again, we see them roll out apps and digital banking services after only testing them with heavily masked or manually generated data.

Generally, manual test data generation tools miss most of the business rules and edge cases so vital for robust testing practices. Dynamic test users for notification and trigger testing are also hard to come by.

Risks are high, as illustrated by The Norwegian Data Protection Authority who fined the Norwegian Confederation of Sport EUR 125,000 Euros for a GDPR violation in 2021. And we know there are many more examples like this out there.

To put it simply, it's impossible to develop intelligent banking products without intelligent test data. The same goes for the testing of AI and machine learning models. Testing those models with synthetically simulated edge cases is extremely important to do when developing from scratch and when recalibrating models to avoid drifting.

Starting your synthetic data journey

Know that not all synthetic data generators are created equal. It's important to select the right synthetic data vendor who can match the financial institution's needs. If a synthetic data generator is inaccurate, the resulting synthetic datasets can lead your data science team astray. If it's too accurate, the generator overfits or learns the training data too well and could accidentally reproduce some of the original information from the training data.

Open-source options are also available. However, the control over quality is fairly low. Until a global standard for synthetic data is in place, it's important to proceed with caution when selecting vendors. Opt for synthetic data companies with extensive experience in dealing with sensitive financial data and know-how when it comes to integrating synthetic data successfully within existing infrastructures.

"Our team at MOSTLY AI has seen large banks and financial organizations from up close. We know that synthetic data will be the data transformation tool that will change the financial data landscape forever, enabling the flow and agility necessary for creating competitive digital services.

One of the most important tasks of anyone looking to make a difference with synthetic data is to prioritize use cases in accordance with the needs and possibilities of the organization. Analytics use cases with the biggest impact can serve as flagship projects, thereby helping to establish the foundation for synthetic data adoption," concludes Hann.

[3] *Source: Financial data unbound: The value of open data for individuals and institutions, 24 June 2021; Mckinsey.com*

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The bank of the future runs on synthetic data

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CAN BANKING-AS-A-SERVICE TRANSFORM THE FUTURE OF FINANCIAL SERVICES?

The rise in customer expectations and demand in financial services has resulted in many banking customers now choosing a range of financial services, as opposed to relying on one single bank. Because of this, banks are now moving away from their vertically integrated, product-based business models towards more open, horizontal model-driven application programme interfaces. A platform approach allows new services to be plugged in easily, boosting innovation and improving customer experience. By way of both these developments, it has welcomed the rise of Banking-as-a-Service (BaaS), the provision of banking products such as current accounts and credit cards to non-bank third parties through APIs.

In order for financial organisations to be integrated within the industrial environment, the embedded banking platforms need to have complex interfaces and open APIs. This will allow for the merging of banking and payment services into business apps and platforms. Software APIs form the foundation of all of this, as banking processes can be implemented in any external system. In addition to this, banking customers have the opportunity to access their services from wherever they are.

The business environment is changing to focus on organisations, modelling strategies that are service-centric, as opposed to ones where a service supports a product. Pay-per-use and subscription-based models are rising in popularity today. By utilising online services, users can receive anything they need without leaving their place of self-isolation. BaaS dissects the structure of banking into separate services that deliver what is needed of them to customers. It gives banks the opportunity to access capabilities whilst undergoing a large, internal transformation. Card processing, lending, banking, and product management are just a few examples of what solutions come out of BaaS. As companies partner with external providers to include digital services into their operations, they stand a much better chance of expanding their revenue stream and customer groups.

Recognising the need to embrace digital transformation

The Italian bank, Banca Carige is a concrete example of how to embrace BaaS. Their digital branches are equipped with remote banking workstations, where customers can access all the services of the bank in self-service mode and via remote assistance, including transaction/cash payments, sales activities, and advisory services. For example, customers can manage multiple bank accounts (linked or not to the card used) and carry out advanced transactions, cash and coin payments and deposits including paying bills or taxes by scanning

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Gaetano Ziri,
Innovation Manager,
Auriga

Gaetano Ziri is a software engineer with a high-level background and expertise in ICT and data science applied to financial services. Currently an Innovation Manager at Auriga, he plays a key role in designing, developing, and testing innovative software solutions which are also based on artificial intelligence, perfectly integrated in legacy systems.

the document. They can also buy products, receive cards in instant issuing or open a bank account if they are prospects. By centralising staff, the bank managed to focus employees on more valuable and complex activities such as advisory and financial services that require the added value of human interaction.

One of their main goals in deploying these digital and smart branches was to find a sustainable way to maintain local roots and territory presence by reopening branches, where banks had to previously leave years ago. But Banca Carige is a traditional bank, whose values are listening, proximity, empathy. They needed a model that would mix their relationship-based approach with the opportunities offered by new technologies. This result was possible thanks to an important review of their processes and infrastructure.

Banks should highlight the importance of facilitating relationships with customers. For example, by removing glass screens from teller counters and remodelling branches into welcoming spaces. This way, customers can carry out transactions at self-service terminals or discuss their more complex banking needs one-to-one with staff.

In order to remain competitive and gain the customers' trust, investing in targeted digital strategies and leveraging data as effectively as possible is the next step to better understanding. This also helps to ensure a personalised experience and, consequently, creating value propositions that enhance trust.

The application of artificial intelligence (AI) models to banking processes can help study user behaviour, improve existing services and products, or create new ones, and improve the relationship. For traditional legacy banks, it is not just a question of investing in digital transformation but also to value the impact on customers' behaviours, their loyalty and profitability by offering an alternative to traditional branches that they can appreciate and that represents value for them. Otherwise, it is a surrender to native digital banks and smart banking, which is attractive and better provided by new entrants than it usually is by legacy banks.

Top three tips for progressive finances in a changing world

To scale appropriately and keep pace with cyber risks across the industry, financial services providers need to shift their approach.

1. Adopting a customer-centric perspective, managing the relationship in an integrated and omnichannel way, and creating seamless and personalised customer experiences becomes a must for establishing new customer relationship models while optimising costs. Technologies like AI and machine learning are making personalisation at scale possible.

2. Enhance security. The irreversible intertwining of digital and physical channels, together with the use of advanced technologies and a massive increase in remote operations, is increasing the number of devices used to connect with the bank (ATMs, assisted self-service terminals, PCs, mobiles, etc). This makes critical infrastructures more vulnerable to cyberattacks. Banks therefore need a protected, secure, and resilient infrastructure. It is important that banks do everything they can to accompany strengthened cybersecurity systems with measures to simplify and automate how banks prevent and address risks and live attacks more effectively.

3. Financial inclusion and literacy for all generations. Accompany customers into the whole customer journey and engage them in creating new services, according to their specific needs. Staff can assist older customers with self-service devices so that they have greater control over their finances. Branch designs need to take into consideration the personal consultation aspect that caters to their needs. Likewise, video banking can be used within branches to increase access to financial services and assistance for customers who need help with self-service products and technology whenever they want.

The banking landscape is ever changing, and BaaS can only shape the way financial services, economies, and most sectors conduct business for years to come. It is scalable, agile and is a clear opportunity for financial institutions to gain a deeper understanding of consumer behaviour through financial data.

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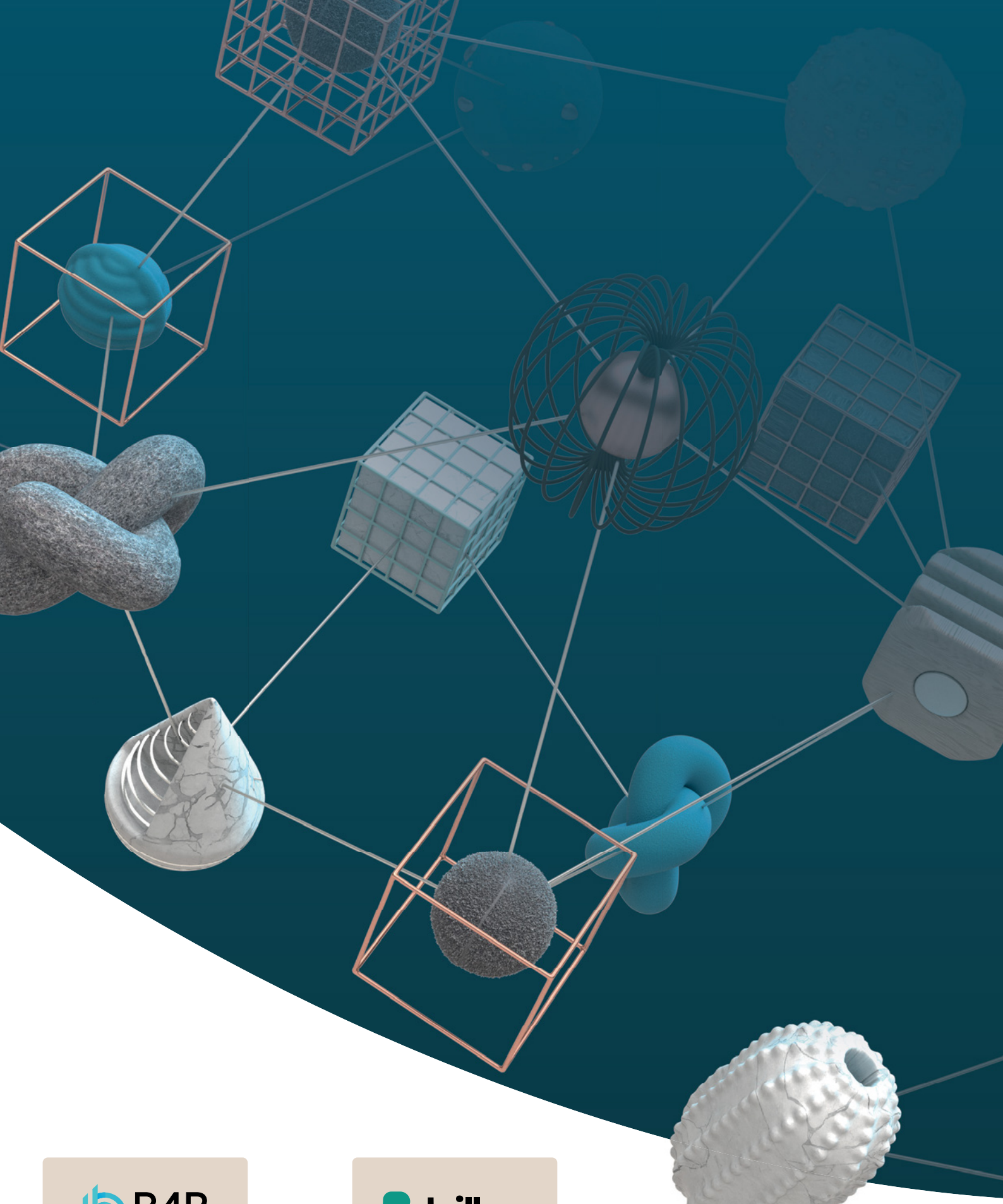

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