

Euroclear Finland

Special
Supplement:
QUARTZ

PostFinance

**KUWAIT
CLEARING
COMPANY**

PLUS

- Real-Time Payments and SWIFT gpi
- UK Cloud ■ TCS BaNCS in China ■ TCS BaNCS in Australia



THE NEXT FRONTIER IN BANKING AND FINANCIAL SERVICES



By **Venkateshwaran Srinivasan**, Head of TCS Financial Solutions,
R Vivekanand, Co-Head of TCS Financial Solutions

Try to imagine a world in which today's technology trends are amplified and accelerated. It's a world where everyone's on the cloud, all endpoints are mobile, all businesses make decisions using easy-to-interpret analytics, and IT development approaches the speed of thought.

That's the next frontier in banking and financial services. Even with a few bumps along the road, the frontier is quickly coming into view, driven by the visions of an "always-connected" generation that has always been so.

A few examples to bring home the changes now underway:

- Wealth management providers now deliver mass **personalization** with robo-advisors, giving the power of customized investment advice even to smaller retail investors in far-flung parts of the globe. Previously, this level of advice was only available to institutional investors and ultra-high-net-worth individuals. Also, by offering top-quality advice at a disruptive price, banks are creating exponential value for customers. Exponential value in this context means that the benefits of the product continue to increase without limit even as the price approaches a minimum.

- Financial institutions are **leveraging ecosystems** with flexible messaging standards like ISO 20022, open banking standards such as IFX and BIAN, and high-speed networks that make data available anywhere instantly.

- Banks are **embracing risk** by taking advantage of market infrastructure improvements such as faster

and safer settlements, real-time risk monitoring, 24x7 consumer payments, and interbank payments tracking with SWIFT gpi.

The frontier in financial services relies upon the successful deployment of one or more of the enabling technologies of Business 4.0: cloud computing, automation, data analytics/AI, and Agile/DevOps. Yet it's not enough to deploy any of these technologies on its own. The essential element for long-term success is a business-led strategy that anticipates and even drives evolving customer behavior under the conditions of widespread technological advancement and universal adoption of mobile devices.

Our planning assumptions should consider, anticipate, and build towards tomorrow's economy. What types of businesses will succeed? How will financial services evolve to serve retail, business, and corporate customers? How will new technology change customer behavior, societal trends, and regulatory practices that often play catch up? Will there be other types of institutions who will deliver financial services? By pondering these questions together, we can establish more effective strategies.

As we make near-term business decisions, we can also make strides toward the anticipated future by advancing our capabilities with respect to the key technologies of Business 4.0.

Cloud computing facilitates worldwide on-demand

service delivery, with rapid innovation and value creation, all at a lower cost than siloed systems. Also, full participation in emerging marketplace ecosystems will increasingly require the real-time access and operational reliability enabled by cloud computing.

Mobile is evolving toward mass personalization in the form of customized apps powered by microservices. Rather than one-size-fits-all apps intended to appeal to an entire market, we will see customized apps configured and assembled in real-time for individuals or narrowly-defined market segments based on their investment and transaction needs.

Data Analytics/AI makes it possible to implement mass personalization. Financial institutions will increasingly rely upon instant decisions on how to personalize apps, when and where to offer promotions, and through which channels to make offers, based on real-time data such as location, purchase history, shopping behavior, lifestyle change indicators, and payments data.

Agile/DevOps: IT organizations can become faster and more flexible in their responses to marketplace changes, technology transitions, and competitors' offerings. Adopting Agile and DevOps methodologies supports enhanced IT readiness with higher capacity to meet evolving business requirements, increased flexibility to change course in response to customer feedback, and improved ability to deploy quickly with lower risk to customers and stakeholders.

Drawing upon those technologies, we are investing in the following initiatives designed to prepare our customers for the emerging Business 4.0 economy:

1. Enabling Ecosystems

● **Quartz:** Blockchain solutions designed for specific business challenges, built using the embedded design principles of Co-existence, Integration, and Interoperability. We are already engaged in projects planned for production in 2019, and are also participating in a few pilot programs with our clients.

● **TCS BaNCS Cloud:** TCS BaNCS in a SaaS model, available through the cloud in multiple markets. We have launched in the UK and in selected countries in Asia, and are quickly adding clients to the offering.

● **TCS BaNCS Marketplace:** A venue for TCS BaNCS customers to share and exchange production-ready, customer-focused solutions with one another, and to leverage our growing partner solutions and apps.

2. Enhancing Customer Experience

● **TCS BaNCS Digital:** Ready-to-deploy consumer and enterprise apps.

● **TCS BaNCS Digital App Development Kit (ADK):** Allows banks to build mobile and online apps using configurable, domain-aware widgets.

● **AI and Analytics:** Predicts customer needs by evaluating available data, with machine learning being deployed to continuously improve system performance.

● **Conversational UI:** Voice-powered interface with the sophistication to handle customer queries and requests.

3. Powering the Digital Core

● **Microservices:** Aggregate business capabilities and data into API-enabled microservices, which improves access for customers while promoting code reuse. By deploying microservices, organizations can reimagine business transformation with elastic scalability to match business demand in real time.

● **Zero-Touch Operations:** We are working toward the goal of zero manual interventions in the operating environments within our client financial institutions. To this end, enhanced automation and machine learning capabilities are being embedded into our core solution components.

● **Collaborative Ecosystems:** Ensure that core systems are ecosystem-ready to support innovation and faster time to market.

● **APIs:** Real-time 'plug-in' for TCS BaNCS to support ease of integration with a wide range of internal systems, customers, and business partners. We have vastly enhanced the range of capabilities in our powerful, finely-grained APIs.

● **Open banking:** Facilitate adoption of industry standards for ISO 20022 messaging in a way that coexists with earlier standards, and build components aligned to BIAN and IFX Forum specifications.

We envision a world in which these diverse initiatives will enable TCS BaNCS customers succeed in taking advantage of the opportunities unleashed by the digital economy, and we strive to be a partner of choice for our customers in this exciting journey.

We really look forward to discussing ideas for reaching the next frontier with you at Sibos 2018 in Sydney and at TCS BaNCS Dialogues throughout the upcoming year, and then realizing these ideas in your organizations in the days to come.



editor's letter



If you're a regular reader of the TCS BaNCS Customer Newsletter (and why wouldn't you be?), you've probably already noticed something a little different about this, our 30th issue.

Celebrating the milestone of TCS turning 50 years old in 2018, we have taken on the vibrant colors and the TCS 50 brand, a "look and feel" that conveys a sense of diversity, fluidity, and agility appropriate for our heritage and our identity as a truly global organization.

TCS BaNCS was created as a strategic business unit of TCS in 2007, but the foundations of TCS BaNCS go back almost to the beginning of the company's history in 1968.

Take a moment to visit the **TCS 50 Time Machine** (<https://www.tcs.com/tcs-50>), and you'll see several examples of how the early history of TCS established the foundation for the capabilities delivered to TCS BaNCS customers today.

We believe our accomplishments with TCS BaNCS in 2018 will rank among the other milestones in our 50-year history.

Among our recent go-lives:

Euroclear Finland has replaced multiple legacy core systems with Infinity, a solution powered by TCS BaNCS for Market Infrastructure. The successful go-live positions Euroclear Finland as an industry-leading CSD, including strong support for European market harmonization and adoption of ISO 20022 standards in coexistence with earlier standards. (See page 10.)

PostFinance has completed a four-year transformation

project onto TCS BaNCS, while simultaneously guiding the entire Swiss marketplace towards adoption of the ISO 20022 standard for payments. (See page 6.)

Both transformations were challenging multiyear projects with large numbers of stakeholders, involving not just the companies themselves, but also surrounding ecosystems of business partners and customers. As such, these go-lives were significant accomplishments. We are excited to see how the continued successes of Euroclear Finland and PostFinance will inspire organizations throughout the world to follow their example.

This issue also includes updates on TCS BaNCS in Australia, the UK, and China; a briefing on Real-Time Payments & SWIFT gpi, and a special supplement on Quartz that you won't want to miss.

We may be 50, but we're just getting started.

Until next time...

Dennis Roman

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Supplement:
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Networks and
Ecosystems



About TCS Financial Solutions

TCS Financial Solutions is a strategic business unit of Tata Consultancy Services. Dedicated to providing business solutions to financial institutions globally, TCS Financial Solutions has compiled a comprehensive product portfolio under the brand name of TCS BaNCS. The TCS BaNCS universal financial solution is designed to help financial services institutions enhance end customer experience, enabling them to embrace open and innovative technologies that embody true digital customer engagement. Deployed at more than 450 installations worldwide, it is the largest collection of components, enterprise and consumer apps for the financial industry made available through the cloud, helping firms become more agile and intelligent by leveraging the power of new and extended ecosystems.

To know more about TCS BaNCS, please visit: <http://sites.tcs.com/tcsbancs/>

Follow us on Twitter @TCS_BaNCS, and on LinkedIn at <https://www.linkedin.com/showcase/tcs-bancs>.

About Tata Consultancy Services LTD (TCS)

Tata Consultancy Services is an IT services, consulting and business solutions organization that partners with many of the world's largest businesses in their transformation journeys. TCS offers a consulting-led, Cognitive powered, integrated portfolio of IT, Business & Technology Services, and engineering. This is delivered through its unique Location Independent Agile delivery model, recognized as a benchmark of excellence in software development. A part of the Tata group, India's largest multinational business group, TCS has over 394,000 of the world's best-trained consultants in 46 countries. The company generated consolidated revenues of US \$ 19.09 billion for year ended March 31, 2018 and is listed on the BSE (formerly Bombay Stock Exchange) and the NSE (National Stock Exchange) in India. For more information, visit us at www.tcs.com.

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case study

PostFinance

By Yogesh Maheshwari
Program Director – Europe, TCS



Four-year Master Plan
culminates in
core banking
replacement and
market-wide
ISO 2022 adoption

AT A GLANCE

Company: PostFinance

Headquarters: Berne, Switzerland

Business Challenge:

Core banking transformation in parallel with
marketplace adoption of ISO 2022

Solution: TCS BaNCS for Core Banking,
TCS BaNCS for Payments



FAST FACTS

PostFinance is one of Switzerland's leading retail financial institutions and the number one provider for Swiss payment transactions.

PostFinance has over 2.9 million customers, including 40 percent of Swiss citizens.

PostFinance Ltd is a fully-owned subsidiary of Swiss Post Ltd, regulated by the Swiss Financial Market Supervisory Authority (FINMA).

PostFinance, one of Switzerland's leading retail financial institutions, holds accounts for around 2.9 million customers, meaning that almost 40 percent of Swiss citizens are PostFinance customers.

As a government-owned entity, PostFinance has the obligation to provide payments services to consumers and companies throughout Switzerland, and currently processes over 1 billion transactions per year, making it the largest payments provider in Switzerland.

Apart from payments, PostFinance also provides customers with investment solutions including mutual funds, retirement funds, and structured products. In recent years, customer assets at PostFinance have quadrupled to its current level of CHF 120 billion, making PostFinance one of the major financial services players in Switzerland. PostFinance started its relationship with TCS in 2011, using TCS BaNCS for Securities Processing to manage its funds administration, foreign exchange, and money market products.

In 2014, PostFinance launched a four-year "Master Plan" initiative to complete the core banking transformation onto TCS BaNCS, including full support for the ISO 20022 standard for payments. The Go-Live was scheduled for Easter weekend starting at the end of March 2018.



case study



Dr. Beat Jaccottet,
Executive Board Member
and Head of Strategy &
Business Development,
PostFinance Ltd

"We handle over one billion transactions per year for a broad variety of customer requirements and configurations," says Dr. Beat Jaccottet, Executive Board Member and Head of Strategy & Business Development, PostFinance Ltd. "It all needs to work together perfectly to ensure stable and efficient payments throughout Switzerland."

The first step, which PostFinance and TCS completed in October 2015, was to facilitate rapid adoption of the full set of messages in the ISO 20022 standard.

"We were the first bank in Switzerland to go live with a fully-compliant implementation of ISO 20022," says Jaccottet. "This demonstrated to the market that the joint teamwork of TCS and PostFinance was working well and delivering quickly."

By being first to market with ISO 20022, PostFinance was first to explain the importance of the ISO 20022 standard to its business partners and customers.

"Our sales force and our product management team put significant effort into explaining to our customers what was changing, why it was changing, and what it meant for their systems," says Jaccottet. **"The good aspect of being first is that we were able to demonstrate our knowledge and capabilities in the payments area by helping customers through their migrations."**

PostFinance IT, operations, and product management and sales teams, along with resources including TCS subject-matter experts, guided customers through their migrations with frequent consultation and collaboration. By the end of 2017, virtually all PostFinance customers were successfully migrated to the ISO 20022 standard. With this milestone, an important pre-condition for the Easter Go-Live had been met.

Easter Go-Live

As the Easter weekend in April 2018 approached, PostFinance prepared internal and external stakeholders for the switchover.

In January 2018, PostFinance held a press conference, including statements not only from the bank's CEO, Hansruedi Köng, but also from N. Ganapathy Subramaniam, COO of TCS, as a demonstration of TCS' high-level commitment to the success of the project.

In the weeks leading up to the go-live, PostFinance held workshops for business customers, sent notifications to retail customers, and conducted hands-on testing with two additional dress rehearsals.

"We ran dress rehearsal migrations exactly as we planned the go-live weekend, together with business users, end users, IT personnel and partners in order to gain the required proof that the new solution was working," says Jaccottet.

Meanwhile, PostFinance and TCS worked together to complete the full core banking transformation. For PostFinance, the core banking transformation was a project with broad complexity beyond what it had seen before. The required changes prior to the go-live involved over 60 systems, over 450 interfaces, over 15,000 requirements, and over 50,000 test cases. On top of that, PostFinance had to conduct training to onboard over 3,000 users onto the new platform, to make sure things were working smoothly after the go-live. On Easter weekend, about 400 people were involved in the go-live effort, working intensely, day and night over several days to ensure a seamless go-live.

"TCS demonstrated full commitment from top management to all its employees in this important exercise," says Jaccottet. "At all times, members of the project were working together, solving issues swiftly, and helping each other to make things possible — an effort which made us feel very proud of the team delivering such a performance."

With PostFinance being one of the major banks in Switzerland and responsible for ensuring the majority of payments on a day-to-day basis for Swiss citizens, SME's and corporations, the transition was a very



PostFinance executives visit India to celebrate the Easter 2018 Go-Live.

high-profile event. “Everybody was quite aware that PostFinance was going to change its core banking over the Easter Weekend,” says Jaccottet. “We even made the national evening news on the Thursday before the go-live, which put everybody on their toes.”

Given the extent of the preparations, the go-live weekend itself was actually “very calm,” says Jaccottet. “People knew exactly what they needed to do, and it worked extremely well.”

Looking back on the entire project, Jaccottet regards trust as being the key element to success.

“When we first started this project, some people doubted that it was going to work,” says Jaccottet.

“Our approach was to talk to everyone involved—PostFinance people went to Bangalore to make sure TCS understood what was important to us, and we made sure we understood what was important to TCS.”

“Everyone was professional, showing that they were ambitious toward achieving our joint goals, which contributed to building overall trust,” he adds. **“As people started to believe in the project, more and more people wanted to be a part of it.”**

Success breeds success, and early wins created momentum for larger achievements later in the project. “Although we were running the ISO 20022 software releases and the core banking transformation in parallel streams, our organizations proved themselves capable of managing this complexity,” says Jaccottet. “Together, we were able to hold to our Go-Live release dates while sticking to our budget and avoiding any bad press.

“I am very proud of this joint TCS-PostFinance team effort,” he adds.

Three Clicks, Three Minutes, No Paper

Looking ahead, PostFinance is now positioned with TCS BaNCS to build the future of the customer experience for financial services in Switzerland. PostFinance’s vision is to build customer experiences that pass a simple test: In the digital, information-rich economy, conducting a transaction should happen with no more than three clicks of a button, in no more than three minutes, and with no paper.

“Customer-facing banking services need to be radically simplified,” says Jaccottet.

For example, you should be able to open a new account with three clicks, in three minutes, without having to sign and mail paperwork. Or, you should be able to download a new digital payment card onto your mobile device through a similarly streamlined process.

This simple goal – three clicks, three minutes, no paper – requires the sophistication and capabilities of a modern core banking solution like TCS BaNCS. “It’s very easy to build cool customer experiences from scratch, but if you put a nice customer experience in front of messy legacy solutions, it won’t be a good solution,” says Jaccottet. “With TCS BaNCS, we have established the necessary foundation for our next wave of digital transformations.”

PostFinance also plans to expand its investment offerings, drawing both upon the Securities Processing solution of TCS BaNCS along with access to highly-scalable human resources through the broader TCS organization. **“We can make use of existing functionality in TCS BaNCS to increase our speed to market,”** says Jaccottet. **“Based on our good experiences working together with TCS in the past, we can count on TCS’ commitment as we grow into new business areas.”**





cover story

To Infinity with

Euroclear Finland
modernizes with
TCS BaNCS for
Market Infrastructure

Euroclear Finland



By **M Anand**, Head of Product Development, TCS BaNCS for Market Infrastructure, and **Samuel Johnson**, TCS Program Manager for Euroclear Finland



Euroclear Finland has completed the full replacement of multiple legacy core systems with **Infinity**, powered by TCS BaNCS for Market Infrastructure.

Infinity now serves as **Euroclear Finland's** core system for securities issuance, safekeeping, management of investors and their accounts, settlement of on-exchange and over-the-counter (OTC) trades, account transfers and portfolio transfers, corporate actions, and management of rights and restrictions. **Infinity** also supports core depository functions and legal requirements pursuant to Finnish proprietary rights and restrictions. It provides comprehensive support for both ISO 15022 and 20022 standards for the entire settlement cycle and for corporate actions processing.

The momentous achievement of a CSD core transformation gives **Euroclear Finland** one of the most advanced market infrastructure implementations in Europe, positioning **Euroclear Finland** and the Finnish capital markets as a leader in terms of investor-friendly benefits and capabilities.

The initiative started in 2012 when **Euroclear Finland** sought to align its corporate actions processing with emerging European market harmonization efforts along with the push to standardize on ISO 20022.

At the time, **Euroclear Finland** was running two separate settlement systems, one for fixed income and another for equities. An extensive internal

analysis determined that retrofitting the legacy systems for new standards and regulations would have been unwieldy and an expensive proposition.

With these considerations in mind, **Euroclear Finland** made the strategic decision in late 2012 to deploy a single, standards-based settlement solution, making it the first CSD in Europe to undertake a full replacement of its legacy core systems. "We were doing what nobody had done before in Europe — to replace their core CSD system" says Hanna Vainio, CEO, **Euroclear Finland**.

The RFP process took less than six months, which in March 2013 led to the selection of TCS BaNCS as the centerpiece of **Euroclear Finland's** technology transformation. "TCS BaNCS was a



Hanna Vainio,
CEO,
Euroclear
Finland

cover story

FAST FACTS

Euroclear Finland

is part of the Euroclear Group, a trusted provider of post-trade services including settlement, safe-keeping, and servicing of domestic and cross-border securities for bonds, equities, warrants, mutual funds, and other financial instruments.

Euroclear Finland

services 22 Depository Participants and Settlement members and 13 Issuer Agents, and provides safekeeping for over 1.4 million accounts and over 3.5 million holdings.

Euroclear Finland

also provides issuance services and manages over 7,000 securities across various financial asset classes.

clear choice, and as soon as the first team from Chennai arrived in Helsinki, we were off to a quick start,” says Vainio.

Euroclear Finland’s objective was to replace multiple legacy systems with **Infinity** — a single, integrated, modern, standards-based system for all asset classes, including fixed income, equities, warrants, and mutual funds, and with significant enhancements and upgrades to issuance and post-trade services.

The complexity of the initiative was intensified by the direct holding model in Finland, in which end investors’ holdings are held directly by the CSD. **Euroclear Finland** handles more than 1.4 million directly-held accounts as CSD, which is more than any other CSD in Europe. In addition, the CSD had to handle connectivity and messaging for a host of participants including custodians, issuers, foreign CSDs, CCP’s and the Central Bank.

On top of managing a complex transformation for its entire internal operations, **Euroclear Finland** also faced the challenge of coordinating these major changes with the ongoing IT transformations of their clients, including Northern Europe’s largest banks.

“Our clients are involved with their own development initiatives, from consolidating systems to reinventing entire lines of business,” says Vainio. “We needed to make sure that whatever we launched was synchronized with what they are doing.”

To convey the detailed requirements to stakeholders in different countries and time zones, **Euroclear Finland** placed considerable effort into clear communications. “We tried to be very comprehensive in our documentation, including service descriptions and functionality at each layer of our services,” says Vainio. “We were pleased to hear good feedback from market participants for the quality of our documentation.”



"One Team, One Goal" in Chennai.

Stakeholder-centric implementation

Euroclear Finland's legacy IT architecture, with its dual settlement systems, permitted a phased approach to replacement – first, fixed income and money markets; and second, equities.

“We knew that equities would be more complex given the extensive functionality and support for corporate actions,” says Vainio. “That’s why we included ISO 20022 messages and other base capabilities during the first phase.”

“As we replaced our fixed income systems, we set the foundation for what we would then do in the equities markets,” says Anu Puttonen, Head of Product Management for **Euroclear Finland**.

“Our clients interact with our systems on a daily basis, and so they were closely involved and engaged with what we are doing,” adds Puttonen. “At the same time, we keenly understood that clients have their own priorities, and that whatever we launch has to be synchronized with their own development initiatives.”

Multi-tier engagement with participants

To gather detailed, ongoing guidance and feedback with clients, **Euroclear Finland** established several engagement groups for covering business changes, technical changes, project management, testing, and data migration. The engagement groups met regularly to uncover and resolve potential issues within their respective domains.

Overseeing the activities of the engagement groups, a Market Advisory Committee consisting of senior executives from **Euroclear Finland** and its key clients monitored the overall progress of the initiative.

Euroclear Finland established a dedicated team solely for client account management. “The client account management team was responsible for being the central contact point between us and our clients,” says Puttonen. “They not only answered client queries, but also made sure that we understood what was going on with our client organizations.”

Throughout the project, **Euroclear Finland** met regularly with the Finnish regulators, who were also key stakeholders. “We operate critical infrastructure for the financial markets, and so the success of **Infinity** was essential for risk management throughout the Finnish capital markets,” says Vainio. “Our regulators supported us throughout the entire journey.”

Partnership approach

TCS worked in close partnership with **Euroclear Finland** throughout the **Infinity** initiative. TCS’ onshore team in Helsinki sat alongside **Euroclear Finland** business analysts, IT teams, development and technology teams and business users. “We had a team of almost 100 people on one floor, all sitting together, learning together and celebrating together, to create that ‘One Team, One Goal’ feeling,” says Vainio.

To further build a collaborative culture, experts from both sides traveled often between India and Finland, and teams also met frequently with offshore teams via dedicated video teleconferencing facilities. Other collaborative approaches included the use of cloud-based issue tracking and project tracking software, training sessions, and sharing of detailed documentation between teams.

TCS created a dedicated offshore delivery center for **Euroclear Finland** at Chennai, staffed with development teams, testing teams, and SMEs with deep knowledge of the European landscape. A specialized team was also set up to handle the performance and other non-functional needs of the program.

Senior management teams from both TCS and **Euroclear Finland** provided strong governance and monitoring throughout the project. “There was a strong commitment at senior levels on both sides that this was a joint journey that we had to conduct

cover story

AT A GLANCE



Company:
Euroclear Finland

Headquarters: Helsinki

Business Challenge:
To comply with regulatory demands while anticipating marketplace transformation.

Solution:
Complete replacement of core solutions with Infinity, powered by TCS BaNCS.



"One Team, One Goal" in Helsinki.

together," says Philip Van Hassel, Program Director for Infinity at **Euroclear Finland**. "That senior-level support complemented the bottom-up effort to create a strong dialogue across teams, creating a perfect understanding of what we need to build."

All these approaches combined to bring out better results. "This was a challenging and ambitious program," observes R Vivekanand, Co-Head of TCS Financial Solutions. "For teams on the ground working under this kind of pressure, the important thing was knowing that the program had 'One Team, One Goal,' with complete alignment and the full support of top management from both sides."

"The commitment from TCS' senior management was 100 percent," remarks Vainio. "This exceptional commitment and cooperation from TCS, which continues today, gave us the ease to move forward in the face of challenges that we encountered."

TCS worked hard to meet the high expectations of **Euroclear Finland**. "We focused on collaboration to achieve the desired outcome through a combination of automation, agility, and close attention to detail," says R Vivekanand.

Through this collaboration, the TCS team had a crash course in Finnish culture. "The Finnish desire to 'perfect perfection itself' was something our teams came to understand very well," remarks R Vivekanand.

Coordinated go-live

The first phase of the **Infinity** go-live was completed in February 2015 for fixed-income products, covering government bills, government bonds, corporate bonds, and other fixed income instruments. With this implementation, Euroclear replaced one of its main legacy platforms with TCS BaNCS Market for Infrastructure; consolidated all its reference data layers onto **Infinity**; and established the building blocks for the introduction of ISO 20022 standards to be further developed in the second phase of **Infinity** implementation.

The second phase of **Infinity** was completed in

May 2018, placing equities onto the consolidated, standards-based, multi-asset settlement system of **Euroclear Finland**.

Each phase required extensive coordination across multiple stakeholders. Production support teams, which included business users and IT operations staff, ran “operational-day tests” simulating typical production scenarios as well as extreme volume scenarios. These tests enabled the people using and maintaining production systems to prepare for new processes. Leading up to the go-live, readiness was assessed through a comprehensive weekly “Go-Live Readiness” dashboard covering IT, business, and operational items.

Given **Euroclear Finland**’s role as market infrastructure, the entire Finnish marketplace had to switch over at the same time. Moreover, the calendar for the Finnish capital markets left only a small window of opportunity for the launch of **Infinity**. “It was an all-or-nothing challenge,” says Van Hassel. “While we were getting ready, there was a question whether our clients would also make it at the same time, but we understood their challenges and worked with them closely throughout the transition.”

In the first weeks following the launch, **Euroclear Finland** published daily reports on uptime and other issues to market participants. “We wanted to be entirely transparent,” says Vainio. “Global custodians quickly escalate any issues to their own risk managers, who will no longer accept a simple note saying that something happened and was fixed — now, they want to hear about root causes, explanations, and much more.”

“The first month was a bit bumpy with expected issues, the second month was much better, and after that it’s been about 100 percent,” says Vainio.

Infinite Benefits

Euroclear Finland now has the capability to differentiate itself as a CSD by rolling out new services faster, at lower cost, and without needing to invent new protocols and standards. Customers can access these powerful capabilities through an easy-to-use, browser-based user interface, designed for depository participants, settlement members, and issuer agents.

“Through ECSDA [European Central Securities Depositories Association] and various other committees, the discussion about European harmonization has been happening for the past 15 years,” says Vainio. “To turn this into a reality for Finland, we had to translate Eurozone regulatory expectations into local practices. This took quite a long time, but in the end, we created new features, new services, and new standards for the Finnish market.”

With straight-through-processing (STP) delivering increased automation using ISO 15022 and ISO 20022 standards, the international capital markets will realize significant benefits both in enhancing their short-term capabilities and in preparing for the long-term evolution of the marketplace. The entire marketplace will also benefit from the improved, automated handling of corporate actions.

From the perspective of Euroclear Finland’s internal operations, the new solution makes significant improvements in several areas:

FIRST, Infinity’s integrated fees engine enables **Euroclear Finland** to implement tariff rules for safekeeping fees, settlement fees, and issuer agent fees. Earlier, these fee calculations were performed on separate systems, and the consolidation to a single platform has resulted in significant cost savings from operational efficiencies in reconciliation.

SECOND, the establishment of a common set of reference data, including business relations, accounts, and instruments, reduces costly errors and discrepancies. Now, any change in reference data is automatically reflected in all business components with no delay.

cover story



Anu Puttonen,
Head of Product
Management,
Euroclear Finland

Philip Van Hassel,
Program Director
for Infinity,
Euroclear Finland



THIRD, IT footprints can now be scaled to better match business requirements. The future-proof solution of TCS BaNCS provides a layered, enterprise Java-based architecture that scales on demand, delivering high performance and high availability through clustering and parallel processing across multiple data centers. A separate reporting database allows **Euroclear Finland** to perform real-time reporting without affecting operational performance.

FOURTH, **Euroclear Finland** has been able to address all the business requirements associated for compliance with CSDR, GDPR, and TARGET2, at a faster speed and with greater efficiency than legacy systems would have permitted.

These comprehensive operational improvements support the development of additional innovative customer-facing solutions, thereby positioning **Euroclear Finland** for steady growth for years to come.

Foundation for market growth

With the successful launch of **Infinity**, **Euroclear Finland** has made a significant step forward towards standardization, harmonization, and efficiency in the capital markets. “Clients now have a platform with a higher level of standardization, which provides a stronger foundation for building additional services and seeking cost and process efficiencies,” says Van Hassel.

Infinity also raises the profile of the Finnish marketplace. “For market participants in Finland, the cost of refreshing their systems, bringing in new software, and integrating with the marketplace will be substantially lower than what it would be in a marketplace reliant on proprietary standards and messages,” says TCS’ R. Vivekanand. “This establishes Finland’s capital markets as a global leader in terms of quality and efficiency.”

Vainio sees the entire effort as setting a positive example for the European capital markets. “We’ve always recognized that we’re the first movers here, but other markets can benefit from the journey that **Euroclear Finland** has completed,” she says.



QUARTZ

In this special supplement:

- How blockchain accelerates the value of economic network effects
- The massive implications of blockchain for the global financial system and information management
- The need for financial institutions to become blockchain-ready
- Using Quartz Gateway to connect any core solution with any blockchain ecosystem; the benefits of blockchain-enabled TCS BaNCS; and the possibilities enabled by The BaNCS Network.

Networks and Ecosystems

An abstract graphic featuring a cluster of 3D cubes in light blue, red, and white, interconnected by thin lines. The background is a gradient of purple and blue, with a network of white dots and lines visible on the right side.



By R Vivekanand, Co-Head of TCS Financial Solutions

The more people connect to a network, the more valuable it becomes.

That's the Economics 101 idea of "network effects." For example, whenever anyone gets a telephone for the first time, the value of your own telephone increases by an infinitesimal degree. Even if it's unlikely that you will ever do so, you may call or message that person directly, which accrues positive economic value to you and to every person with a telephone.

The same principle applies for any other networks, whether social networks or interbank networks such as closed-loop payments, clearing and settlement networks, credit card networks, or SWIFT. Each new member increases the value of the network to all participants.

Yet there's an important distinction to be made between **messaging networks** and **information-sharing networks**. It's the difference between asking for someone's phone number and sending a friend request through a social network. If you have someone's phone number, you can call or text. If you connect through a social network, you can find out everything that person has ever shared, including photos, how far they've walked today, and what they've had for dinner. These networks may coexist and complement one another, but they have very different usage patterns.

In a **messaging network**, each node acts as the repository of its own information, which implies that messaging is the core activity on the network. If you want information about another node, you must send a request and wait for a reply.

In an **information-sharing network**, each node contributes information in a standardized format to a repository, in advance of any requests made from other nodes. This reduces the need for node-to-node messaging, while amplifying the power created by the ecosystem.

Blockchain technology is a step from messaging networks like SWIFT toward highly-effective information-sharing networks that have embedded algorithms in the form of smart contracts.

Blockchain amplifies the value of network effects. With blockchain, each new additional node on the network represents not just another endpoint that may be reached, but also the promise of a continued flow of new data into a shared distributed ledger. As participants contribute their own information into a distributed shared ledger, other network participants gain near-instantaneous access to a single version of the truth, replicated within their own environments for their own use.

Blockchain curtails the need to exchange messages. For the most frequently-asked questions, the answers will already exist in your own environment. Messages become less frequent, tending toward higher-value discussions.

Messaging is the main driver of complexity for financial institutions seeking to drive operational efficiency with straight-through processing (STP). IT specialists must anticipate every possible outcome for every message exchange, and organizations must establish extensive operational procedures to deal with the inevitable exceptions. Lacking a single source of information, messages must be carefully exchanged simply to validate whether the data on hand is correct, and then to reconcile any errors that arise during the data duplication process.

Messaging itself takes time. When you send someone a message, there's no built-in guarantee as to when you'll receive a response, if at all. Organizations cope with this through quality-of-service (QoS) guarantees and other network management practices, but this adds cost and complexity, and increases settlement times.

Blockchain technology eliminates the need for back-and-forth messages. Once the data you require is automatically included in your local copy of a distributed ledger, you no longer need to wait for responses from counterparties. You can also

be assured that data will be in the correct format, with nothing out of date relative to what everyone else on the network sees. With blockchain as a foundation, you can redesign processes to amplify automation and raise STP to new levels.

The potential of blockchain to optimize processes and increase automation is being discovered not only by the financial services industry, but also by other industry sectors from transportation and logistics to government and life sciences. A private, permission-based blockchain network opens new opportunities that are just starting to come to fruition, and financial institutions will be among the first to take advantage of these opportunities.

What happens when the global financial system transitions from a messaging network into an information-sharing network?

The envisioned end state:

- Legacy core systems will shrink in scope and functionality given the availability of shared ledgers that contain a more accurate, timely version of the financial information within a marketplace.

- Message traffic will dry up for entire categories of requests and acknowledgements, given the availability of that required information in a locally-stored copy of a distributed ledger.

- Data will be in one place, with one version of the truth, so that statements need not be broadcasted to multiple participants in a network, or balances held in various Nostro accounts.

- Reconciliation will be automatic for entire classes of transactions for entities using the same ledger.

Granted, this won't happen immediately, and in some markets, it may only happen partially, if at all. Yet given the economic benefits unlocked by the technology, we should expect massive changes to manifest in the years to come.

In the legacy financial system, banks differentiated themselves based on how well they maintained and protected their own separate ledgers. The new, blockchain-based financial

system will bring about entirely new ecosystems with immense opportunities for technology-aware organizations that can manage the transition.

New ecosystems will bring together participants, business partners, and other stakeholders across the value chain for entire industries.

Here are some possibilities for how these ecosystems may emerge.

- A central bank creates a payments ecosystem within a country, with institutions each having a subaccount on a shared ledger. A new ecosystem would emerge to support the settlement and cash management needs of enterprises. By extension, this could even extend to accounts for individuals, with the ecosystem supporting the financial planning needs of consumers.

- Government entities build blockchain ledgers for information about ownership of assets such as real estate and insurance contracts. A new ecosystem would enable rapid closing on home purchases and better management of mortgage assets for collateral, with involvement from the banks for buyer and seller, realtors, title company, insurance company, and government agencies.

- Banks involved in international remittances create accounts on a shared ledger to facilitate faster exchange of funds. As a result, they could offer in-network remittance services at lower cost and with better foreign exchange rates.

- Vehicle data stored efficiently in a single registry would simplify processing of vehicle-related insurance claims and better protect against fraud.

- Outside the financial industry, other applications may include digital identity systems, social services, clinical trials, and many others.

To participate in these ecosystems, your financial institution will need to be blockchain-ready.

One approach would be to develop blockchain interfaces for each specific network as it emerges, participating only in selected ecosystems.

The problem with this approach is that doesn't scale across marketplaces, regions, or business areas. As blockchain gains acceptance, there will be too many emerging ecosystems for an organization to respond effectively in a timely manner, and the need to embark upon an IT project for each initiative will create a significant barrier to entry.

Our recommendation is to prepare now for the blockchain-enabled future. To that end, TCS has taken several steps to ensure the continued success of our customers.

1. Quartz Gateway connects your existing systems to blockchain networks.

The design principles of Quartz — coexistence, integration, and interoperability — enable any financial institution to access multiple distributed ledgers from any existing core banking solution. This lowers the barrier to participation, enabling financial institutions to take advantage of new opportunities as they arise.

For example, if a central bank creates a blockchain-based payments ecosystem in a country within your bank's footprint, you can deploy Quartz Gateway to ensure that you can participate fully from the outset, without having to engage in the full complexity of working with blockchain technology.

Moreover, you can redeploy Quartz Gateway for every other blockchain-based ecosystem, whether sponsored by governments, bank consortia, industry-led partnerships outside of financial services, or entities such as Ripple.

With Quartz Gateway, you can scale your participation as the technology gains adoption.

2. Every single solution and component on TCS BaNCS will be blockchain-enabled.

For TCS BaNCS customers, the benefits of Quartz will be embedded into the core products. This will ensure that any information made available through a shared ledger can propagate quickly throughout all functions of a bank, from

back-office processing to middle-office risk management, and then to all front-end channels.

Although organizations using Quartz Gateway will also have access to information on the distributed ledger from within their internal systems, TCS BaNCS customers will have the advantage of having the entire solution optimized, front to back, for integration with distributed ledger data without the need for further modification.

3. The BaNCS Network will connect all TCS BaNCS customers in a single ecosystem

TCS BaNCS customers will be able to conduct transactions with one another through a blockchain-based network. Participants in the network will be able to exchange information and even conduct transactions through a trusted, private, permissioned blockchain ledger. In this way, The BaNCS Network offers an alternate routing mechanism solely for the use of TCS BaNCS customers.

Already, participants have used The BaNCS Network to test the initiation of cross-border transactions in Africa, which is just one example of the exciting services being developed by our customers working with one another.

Another way to benefit from The BaNCS Network is to experiment with blockchain technologies in a sandboxed environment. TCS BaNCS customers are evaluating technologies, piloting projects, and trying out transactions using example datasets that can be simulated with real-world conditions.

Our investments in blockchain technology will give TCS BaNCS customers an inherent edge in the ecosystems that are emerging from the accelerating adoption of information-sharing networks.

At TCS, we are investing in the technology and business strategies to ensure that TCS BaNCS customers will be at the forefront as the blockchain-powered future unfolds.



Watch for upcoming
TCS BaNCS Dialogues
meetings for 2019
in Latin America, Asia,
North America
and Europe.

TCS BaNCS DIALOGUES

User groups discuss
AI, Blockchain and Data

Singapore

TCS BaNCS Dialogues in Singapore held in May 2018, included participants from Standard Chartered Bank and DBS Bank. The one-day session included coverage of topics in custody and corporate actions in Asian marketplaces.

London

TCS BaNCS Dialogues in London, held in July 2018, covered topics in custody and corporate actions, with a specific focus on UK and European contexts.

New York

TCS BaNCS Dialogues in New York, held in July 2018, was a two-day event with the first day focused on custody and the second day on corporate actions. Specific discussion areas covered the usage of AI, blockchain, and data analytics in the capital markets.

Zurich

TCS BaNCS Dialogues in Zurich, held in September 2018, was entirely focused on banking. Attendees heard updates on TCS BaNCS strategy and upcoming solution capabilities, and participated in sessions on microservices, API banking, and regulatory compliance.



TCS BaNCS in AUSTRALIA



Longevity as a trusted partner in banking, capital markets, and insurance

By **Colin Sword**, Country Head – Australia and New Zealand, TCS

As in all markets, the Australian market continues to evolve with more compliance regulations and increased customer expectations. It is understandable that financial institutions turn to their trusted business partners to see them through these immense changes.

As an example, Australia's New Payments Platform (NPP) is a convenient and inexpensive way for retail consumers to pay someone within seconds without having to know the recipient's full account details. TCS facilitated the readiness for the go-live "on date" for all its local financial institution customers, with two being early adopters. As NPP moves into mainstream acceptability, now with over two million registered participants, the next wave of value-added services is arriving.

TCS BaNCS clients are building customer-focused solutions that incorporate NPP in ways that make sound business sense. With the real-time capabilities of TCS BaNCS along with API-based access to open banking components, financial institutions are creating value propositions that are not dependent upon legacy fee structures or business models. That's the kind of flexible technology and strategic thinking that makes for successful lasting partnerships.

Our longevity as a trusted business partner in Australia is evident from our long-term relationships:

Australia's first direct bank started on our core banking system in 1999 and has grown to become Australia's fifth-largest bank.

A Pacific Island bank has gone through multiple ownership changes and name changes over the past 20 years, and for the entire time, we have been their core banking solution provider.

Australia's largest credit union won the 2014 Celent Model Bank Award for its implementation of TCS BaNCS Core Banking, including online and mobile banking, and the credit union continues to innovate with new digital services.

Plus, we have started a long-term journey toward the next generation of core banking with our deployment of the TCS BaNCS Universal Banking solution for a major Australian institution. Phase 1 has already gone live, and Phase 2 will soon follow.

TCS BaNCS is also gaining ground in Australia in the domains of Capital Markets and Insurance.

TCS BaNCS for Corporate Actions was our first cloud-based offering in the region.

TCS BaNCS for Market Infrastructure now supports the operating requirements of a local stock exchange.

TCS BaNCS for Insurance is at the center of a group life business building an entire technology ecosystem around the capabilities of the TCS BaNCS policy administration system.

These longstanding relationships and recent wins demonstrate the tremendous efforts that TCS makes to localize the TCS BaNCS product suite, including sustained compliance for local markets. To illustrate, TCS BaNCS for Insurance had to comply with 147 separate laws in Australia, a multiyear initiative that we validated with our accounting firms. One advisor judged our level of compliance and flexibility as being ahead of everyone in the Australian insurance marketplace.

We take our obligations seriously. Whether it's KYC, AML, controls to prevent security breaches, or day-to-day operational support, we make certain that all relevant compliance, security and safety issues are duly considered across the banking, capital markets, and insurance domains.

In fact, our high level of expertise in the Australian marketplace is facilitating the launch of new startup banks. Australia's banking regulator recently started offering new "restricted" banking licenses that give market entrants a two-year rolling start for accepting limited deposits, allowing them to demonstrate their operational fitness prior to opening their doors to the broader public. TCS BaNCS will be enabling startup banks to launch quickly with a complete set of tested capabilities, including support for highly-innovative business models along with multi-language capabilities that represent an important element in our diverse Australian culture.

The Australian market is changing quickly, and TCS BaNCS customers have the power and flexibility to thrive amidst these changes.



UK Cloud



By **S. Sambamurthy**,
Head, UK & Europe,
TCS Financial Solutions

Pathway to modernization for UK credit unions and banks

A rough estimate in the industry is that about half of all core banking transformations fail.

For these transformation initiatives, the stakes are enormous. Just this year, a large UK bank suffered a major failure during the migration of customer accounts. This high-profile, customer-facing failure caused the bank major losses of £100s of millions, a precipitous stock price drop, untold reputational damage, and leadership turnover.

Smaller banks and credit unions in the UK have also encountered difficulties with their core transformation initiatives. Although for a small credit union the absolute scale of losses may be minimal compared to that of a large bank, it's a major upheaval for any organization to cope with a failed or abandoned transformation project.

Given the obvious risks, it's noteworthy that so many financial institutions still find it necessary to undertake transformation initiatives.

For UK credit unions and smaller banks, the pressure to transform comes from three main sources:



Competition from new entrants:

Like other banks around the world, UK credit unions and smaller banks are trying to figure out how to attract and retain the next generation of savers, homebuyers, and investors. To do so, they will have to compete with a world of fintech startups and innovators. This effort will require new digital capabilities, supported by scalable business models that can compete with powerful competitors.



2 Expanded possibilities for products and services:

UK credit unions, including workforce-based credit unions and community-oriented credit unions, have been successful in lobbying to expand the range of their product and service offerings. For example, UK credit unions have only recently started offering credit and debit card products. Yet many credit unions' core and ancillary systems lag behind, unable to support the expanded range of offerings now permissible by regulation. For credit unions to take advantage of these nontraditional avenues for lending, they need to enable open banking with a wide range of partners, which in turn requires core systems capable of simple, API-based, real-time integration.



3 Increased regulatory scrutiny: Although not the highest-profile targets for cyberattacks, smaller banks and credit unions nevertheless face the same risks as do larger banks without the benefit of large IT staffs backing them up. Recognizing the potential vulnerabilities and exposures, UK regulators are now looking more closely at the operations of smaller financial institutions, including the business practices involved with managing cloud-based platforms. As they become reliant upon a growing number of cloud-based software providers in the open banking landscape, credit unions and smaller banks will need to increasingly rely upon their core banking solutions to coordinate the various information flows and access privileges, providing an auditable and maintainable record of customer and employee interactions.

Considering these business drivers, the only thing riskier than undergoing a transformation would be doing nothing.

What does it take to modernize a credit union in the UK?

As with any major transformation project, the foundation of success starts with suitable technology combined with experienced management.

TCS has, by far, the industry's best track record in completing core banking system transformations and the accompanying data migrations. Whether from analyst surveys or customer testimonials, TCS has demonstrated the ability to organize and implement large-scale transformations and migrations in the UK, in Europe, and around the world.

We have years of experience working with financial institutions of every size and configuration. We know what has to go right for a transformation to be successful, and just as importantly, we know what can go wrong.

Our unparalleled experience is valuable for smaller organizations with relatively limited IT resources, for whom the prospect of a combined transformation and migration may otherwise be an overwhelming challenge, and as well as for larger organizations facing the largest risks.

The cloud-based deployment of TCS BaNCS for UK credit unions and banks includes a full range of market adaptations to UK regulations, including connectivity with the various types of payment schemes used in the market. For example, smaller banks and credit unions in the UK must connect through an intermediary bank to access either of the systems run by the UK's New Payment System Operator (NPSO)—Bacs for automated payments, or to Faster Payments for immediate payments. TCS BaNCS supports the required position-keeping, reporting, risk management, and operational procedures that have to be followed for UK financial institutions.

TCS has also built an extensive partner network in the UK, enabling financial institutions to embrace the open banking trend by instantly offering an expanded set of products and services.

The cloud-based core banking solution of TCS BaNCS has been live for over two years in the UK, supporting London Mutual Credit Union, Community Savings Bank Association, Cussco in Scotland, and others.

With TCS BaNCS in the Cloud, UK credit unions and banks can safely modernize their core systems to best prepare themselves for the rapidly-emerging future.



briefing

REAL-TIME PAYMENTS & SWIFT gpi



TCS BaNCS for Payments prepares banks for key evolutions in global payments

By **Nitin Sirohi**,

Head of TCS BaNCS Product Management – Banking,
TCS Financial Solutions

Alongside the emergence of Ripple, Ethereum, and other alternative payment clearing schemes, two major innovations have arrived to accelerate the speed of payments clearing for banks: Real-time payments for domestic transfers, and SWIFT gpi for international transfers. How banks adapt to these key evolutions will definitively shape their response to their customers' demands.

Real-time payments

In a growing number of markets including Australia, India, Singapore, Sweden, the United Kingdom and now in the SEPA Zone, bank transfers have moved toward real-time clearing and instant credit to the beneficiary in environments regulated by the respective central banks.

Previously, in the traditional banking ecosystem, real-time payments were only possible when both parties to a transaction were account holders of the same bank or members of closed-loop services tactically built on card scheme-based networks. Now, people in countries with real-time payments can send or receive real-time funds 24x7, without additional overhead and without the complexity of having to agree upon and join a specific network in advance.

Domestic real-time payments enable the maturity of

e-commerce by giving buyers more control over the timing of payments, while expanding the potential of billers or sellers to offer real-time services.

Real-time payments have become the **de facto** standard in countries where they have been made widely accessible. As an example, India's real-time Immediate Payment Service, or IMPS, is now offered by almost all the major banks at minimal cost. One of the largest banks in India offers free transfers for transactions under INR ₹ 1,000 (USD \$14), with larger transfers available for INR ₹ 3 (USD \$0.04) or less. This fee structure is highly disruptive to legacy methods of payments, and the 24x7x365 experience is redefining expectations for payment speed throughout India's online economy.

SWIFT gpi

International payments associated with trade and foreign exchange are also moving faster than ever. SWIFT gpi ("global payments innovation") provides end-to-end visibility of transactions at each stage throughout the payment processing chain until the money reaches the beneficiary's bank. With SWIFT gpi, banks can process international payments on the same day, and with greater transparency over the fees and foreign exchange rates applied.

Prior to SWIFT gpi, cross-border payments were expensive and often difficult to track from one correspondent bank to the next. At times it would often take several days for funds to be credited to a beneficiary, and during this extended transfer period, senders of a payment had only limited visibility into its status. Moreover, following the payment, both sender and receiver had to reconcile complex, opaque fee structures.

The new bank-run, cloud-based approach of SWIFT gpi places correspondent banks, intermediary banks, and clearing firms together on a common platform with a consistent set of business rules and service level agreements (SLAs). Each successive transfer to

an intermediary is acknowledged with a standardized message providing transparent information on timings, fees, foreign exchange rates, and other details. This approach preserves the integrity of remittance details throughout the payment using an end-to-end payment reference code.

Just as logistics companies track the location of a package from origin to destination, banks using SWIFT gpi will be able to provide tracking details of any international payment, along with unambiguous breakdowns of fees and exchange rates. These innovations give corporate treasurers unprecedented advantages in liquidity management.

In February 2017, SWIFT gpi V1 went into effect, with standards for SLAs covering end-to-end tracking of global Commercial Credit Transfers. The next milestone takes place in November 2018 with SWIFT gpi V2, which, among other improvements, introduces the "gSRP" Stop and Recall Payment service, which will enable the sender of a payment to cancel payment already in progress, at any point prior to receipt by the beneficiary. Senders will be able to respond quickly and effectively to compliance questions, solvency issues, or any other business situations.

Challenges for legacy IT systems

The domestic and international acceleration of payments will reshape the competitive dynamics throughout the banking industry.

Prior to the introduction of industry-wide standardization for faster payments processing, banks were at risk of becoming merely back-office settlement mechanisms for non-bank networks. Now, with standardization in domestic real-time payments, banks have new opportunities to innovate in C2C, B2C, and B2B payments domains; new approaches to compete or collaborate with payment solutions offered by fintech companies and alternative solution providers; and new potential transaction-based revenue streams

briefing

REAL-TIME PAYMENTS & SWIFT gpi

from offering value-added services to their customers. Similarly, transparency in the financial supply chain through SWIFT gpi reduces the urgency for banks to pursue alternate schemes for exchanging trade-related information.

By embracing these industry trends, banks will become less vulnerable to disintermediation by having the ability to meet customer demand in the marketplace for faster and smarter payments, with the capacity to deploy new business models in the larger ecosystems in which they operate.

However, banks will have limited ability to maintain legacy fee structures for payment products, or to charge a premium for the new payment services. Much as the telecom industry in past decades were pressured to adjust to unlimited domestic calling and low-cost international calls, and later to Internet telephony, banks will have to realign pricing structures to accommodate free or low-cost domestic real-time payments and high-visibility international payments.

Throughout this transition, banks' focus should be on retaining and acquiring customers at scale by delivering market-leading services at low cost.

The new payment capabilities also offer banks an immediate opportunity to realize cost savings. Some examples include:

- **Straight-through processing.** Exceptions management for domestic real-time payments can be largely automated. For example, if a recipient no longer has an active account, the payment will automatically return to the sender without the direct involvement of the bank – a feature defined in the rules of most of the real-time payments schemes.

- **Standardized compliance.** The move to real-time payments implies the need for more robust account opening procedures and transaction checking prior to the sending of a payment. This creates opportunities to standardize and simplify compliance and anti-fraud checks.

- **Consolidation of payments infrastructure.** With 24x7 real-time payments processing accessible using APIs, banks no longer have to manage separate payments capabilities in multiple silos. Instead, they can maintain a single payments infrastructure accessible throughout the enterprise.

Maximizing profit potential

TCS is working closely with financial institutions around the world to manage the transition to the evolving payments landscape. With TCS BaNCS, a financial institution can take advantage of real-time payments processing and faster international payments processing and tracking.

Banks can deploy real-time payments processing either using the stand-alone Payments solution of TCS BaNCS or as an integrated solution that incorporates real-time payments into the Core Banking solution of TCS BaNCS. TCS BaNCS, built using modern architecture concepts such as microservices, can be adapted to business models for banks of any size or configuration.

TCS BaNCS includes several powerful and unique capabilities to support banks' payments processing:

Real-time Payments solution with auto scale-out and scale-in

With real-time payments, one of the biggest challenges is managing capacity at an optimal level. During a Black Friday sale or a major promotion from an e-commerce site, volumes may increase at extremely short notice, by 10X or more. Traditionally, banks would reserve additional hardware resources only for use during peak periods.

TCS BaNCS automatically scales out based on payment traffic. Using microservices architecture and container-based deployment, bank IT operations teams no longer need to reconfigure their solution infrastructures for a volume surge. Without any manual intervention, TCS BaNCS automatically scales out to the required capacity.

Intelligent dashboard for SWIFT gpi

TCS BaNCS customers can add SWIFT gpi capability as an incremental service (rather than as a major upgrade), to take advantage of the ability to control and view international payments.

Going beyond the basic capabilities, TCS BaNCS provides a highly sophisticated dashboard that takes full advantage of **SWIFT gpi Tracker** data. The real-time view allows banks to understand their overall cash position, as well as the specifics related to any given payment at a fine-grained level. This allows operations teams to react quickly, make decisions, and take action within the application. Using APIs deployed across bank channels, TCS BaNCS also enables banks' customers to see how their payments have performed.

With an intelligent use of Payment Tracker data from SWIFT gpi, financial institutions can evaluate and assess the health and efficiency of each participant along the payment chain. Banks can assess their correspondent banking networks, identify bottlenecks, and have ready access to information required to either remedy the situation with the correspondent banks or to identify alternative routing mechanisms.

Customizable payments factory for operations

The Payments solution of TCS BaNCS can be configured as a "payments factory" to meet a wide range of operational models, tailored to meet the front-end capabilities of a financial institution. For banks that prefer to have their customers send a single order file containing a mix of payments including low-value and high-value payments, domestic and international payments, and slower and faster payments, TCS BaNCS can route each payment through appropriate networks and channels to the beneficiaries, per the stipulated service level agreements on the respective payment clearing schemes in which the bank participates.

An experienced partner in payments

TCS BaNCS is ready for real-time payments. We are already providing real-time payments processing capabilities to our customers in Australia, the Nordics region, the SEPA Zone, and India.

We have also made TCS BaNCS ready for Malaysia's Real-time Retail Payments Platform (RPP), a strategic initiative from Malaysia's premier payments network and central infrastructure for financial markets.

In the Middle East, one of the leading banks in the region is already a user of TCS BaNCS for SWIFT gpi. By the end of 2018, we expect other banks to begin using those capabilities as well.

The evolution of the payments marketplace involves significant change throughout banks, including cost savings in back-office capabilities, process changes to middle-office risk and compliance, and rethinking of value propositions in front-office sales and channels. Having TCS as a partner enables financial institutions to manage these transitions with assurance and excellence.



news

TCS BaNCS in CHINA

Senior delegation from TCS Financial Solutions visits key TCS BaNCS client banks in China

In July 2018, a senior delegation from TCS Financial Solutions visited **Hubei Rural Credit Unions (HBRCU)** and **Shanghai Rural Commercial Bank (SHRCB)**, which are key TCS BaNCS clients in China. The delegation was led by Venkateshwaran Srinivasan, Global Head of TCS Financial Solutions.

The visit occurred at a critical stage for the Beijing office of TCS Financial Solutions. To expand from being solely a core banking vendor in China, TCS Financial Solutions has initiated a transformation journey to become a comprehensive financial solutions provider focused on delivering selected new growth solutions based on TCS BaNCS. These solution areas represent important foundations of the newly-announced TCS Business 4.0 Framework, designed for the Internet-based finance ecosystem.

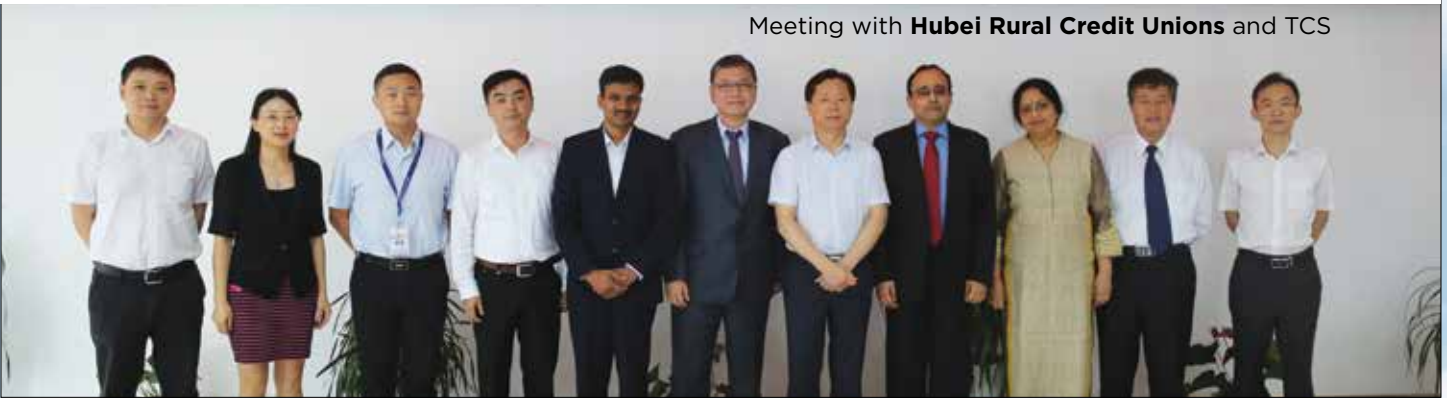
Along with this transformation, TCS has also reemphasized its commitment to core banking and its unwavering support for the 12 banks in China currently using TCS BaNCS for Core Banking.

Mr. Jinsheng Shen, Director of **HBRCU**, has affirmed the performance of TCS BaNCS Core Banking System and the satisfaction with professional services delivered by TCS in the past seven years since the implementation of TCS BaNCS at **HBRCU**, the leading rural credit union of Hubei Province.

HBRCU and TCS have both expressed their intention for further cooperation, especially in new technologies to help **HBRCU** to deal with the challenges brought by Internet-based business models and challengers quickly developing in China. The new solution set from TCS BaNCS was presented in a meeting between **HBRCU** and TCS, with positive feedback received from those in attendance, including the President and General Managers of IT and major business departments from the bank.

In Shanghai, TCS executives met with the Chairman of **Shanghai Rural Commercial Bank**, Mr. Guangheng Ji, who had visited the TCS Financial Solutions offices in Bangalore earlier in 2018. A warm and constructive discussion ensued, covered topics including the cutting-edge technology of TCS BaNCS and the IT governance strategy of **Shanghai Rural Commercial Bank**. The bank also hosted the TCS executive delegation with a visit to the Shanghai Rural Commercial Bank Museum, which impressively demonstrated the history of the bank and its major business and technology achievements.

Meeting with **Hubei Rural Credit Unions** and TCS



Also participating in all the meetings and activities were Neetha Melanta from TCS Financial Solutions, and Thomas Chern and Venketeswar Eegapati, heads of the TCS Financial Solutions Beijing office.

HUNAN RURAL CREDIT UNION

TCS BaNCS has gone live in **Hunan Rural Credit Union** following a 30-month deployment.

HNRCC has centralized TCS BaNCS operations that had previously managed by about 100 different software solutions run at the branch level. Over 830 banking functions were integrated into the single solution of TCS BaNCS, without disruption of customer service or day-to-day operations.

GANSU BANK

TCS BaNCS has gone live in **Gansu Bank**, the only provincial city commercial bank in Gansu province. The go-live was a complex overhaul of the IT infrastructure in the bank, involving the integration of TCS BaNCS with 100 other peripheral systems. Established in 2011, **Gansu Bank** has total assets of RMB 313 billion and customer deposits of RMB 198 billion as of June 2018.

Executives from **Shanghai Rural Commercial Bank** welcome the delegation from TCS to Shanghai. At center: Venkateshwaran Srinivasan, Head of TCS Financial Solutions, and Mr. Guangheng Ji, Chairman, Shanghai Rural Commercial Bank.



KUWAIT CLEARING COMPANY

**TCS BaNCS for Market Infrastructure
selected for pioneering initiative in
Kuwaiti securities market**

As part of a larger transformation of the Kuwaiti financial market, Kuwait Clearing Company (KCC) will transition from a gross settlement model to a Central Counter Party (CCP) clearing settlement model. CCP clearing will increase liquidity, reduce risk, promote greater participation by global investors, and facilitate the introduction of new products to the Kuwaiti market.

In 2016, KCC established a five-year strategy to implement international best-practice investment market standards to help Kuwait attain Emerging Market Status as defined by FTSE and MSCI, which would further the goal of attracting more foreign investment to Kuwait.

“Setting up a CCP-based clearing





الشركة الكويتية للمقاصة
KUWAIT CLEARING COMPANY K.S.C.

model is another huge milestone in KCC's strategy to fulfill the Capital Markets Authority's mandate for market development initiatives in Kuwait. We believe that this initiative will further strengthen KCC's position as the leader of change in the region," said Khaldoun Altabtabaie, CIO and Head of Strategy, Kuwait Clearing Company.

TCS BaNCS for Market Infrastructure will provide KCC with a proven, unified clearing solution for the cash and derivatives markets.

"In the selection of TCS and TCS BaNCS for Market Infrastructure, we have chosen a proven solution and a global trusted partner with a longstanding association with KCC and the

Kuwaiti market," said Altabtabaie.

TCS BaNCS for Market Infrastructure is a multi-asset class solution designed for high performance transaction management. The solution supports comprehensive clearing membership structures, trade and position management, integrated risk management, collateral management, fails management, and securities lending and borrowing; in compliance with global standards and best practices.

The choice of TCS and TCS BaNCS for Kuwait's CCP initiative further strengthens TCS' positioning as a transformation partner for such large and complex initiatives. TCS had earlier implemented a modern and robust central securities depository

and registrar solution at KCC, as part of its first wave of modernization.

"KCC's selection of TCS BaNCS for the CCP program is an endorsement of our ability to deliver market transformation programs. We believe that our contextual knowledge of the Kuwaiti market, combined with our strong presence in Kuwait across multiple financial institutions, provides a unique opportunity to build a financial ecosystem that is central to our Business 4.0 vision, and deliver exponential value to our customers in the region," said R Vivekanand, Co-Head, TCS Financial Solutions.



Deal-signing ceremony between TCS Financial Solutions and Kuwait Clearing Company. Seen here: R Vivekanand, Co-Head of TCS Financial Solutions, Khaled Abdulrazzaq Alkhaled, Chairman, Adel Y Al-Subaiee, Deputy CEO, and Khaldoun Altabtabaie, CIO and Head of Strategy, Kuwait Clearing Company.

events

Software Innovation Dialogue

BP Rao, Head of Infrastructure Services, TCS Financial Solutions, spoke about the transformation of legacy applications in July at Software Innovation Dialogue 2018, held in Jaipur, India.



Old Mutual Wealth

Executives from Old Mutual Wealth participate in the TCS50 Inauguration Ceremony in June 2018. Pictured: Leon Deist, CIO, Dave Reynolds, CTO and Deputy CIO, and Celine Tournette, CIO, Venkateshwaran Srinivasan, Head - TCS Financial Solutions, TCS Financial Solutions.



TCS has entered a strategic partnership with Securities Industry and Financial Markets Association (SIFMA) to drive thought leadership and boost customer engagement. SIFMA members will have opportunities to engage with TCS' senior leaders and industry experts through SIFMA committees, working groups, seminars, and industry events.



Gartner Strategy Day

In September 2018, Vittorio D'Orazio, Research Director in the Gartner Banking and Investment Services team, and Don Free, VP and lead core banking analyst at Gartner, met with TCS executives for Banking Platform Strategy Discussions in Frankfurt, Germany. Topics included updates on TCS BaNCS strategy and areas of investment, the evolution of core banking market, and Gartner's perception of the marketplace.

Pictured, left to right: S Sambamurthy and Venkateshwaran Srinivasan from TCS, Vittoria D'Orazio and Don Free from Gartner, and Arun Arunachalam and Nitin Sirohi from TCS.



CREDIT UNIONS: TURNING CHALLENGES INTO GROWTH OPPORTUNITIES

On October 10, 2018, TCS hosted an event in Manchester for the credit union community in the UK to exchange views on a variety of topics.

Speakers included:

Marlene Shiels, OBE, FCIBS (Hon), CEO, Capital Credit Union
Robert Kelly, CEO, Association of British Credit Unions
Frances McCann, COO, Scotwest Credit Union
Lakshman Chandrasekera, CEO, London Mutual Credit Union



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at the Open Theatre 1

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10:00 AM

Monday, October 22, 2018

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