WHITEPAPER

Bottomline Technologies

EXPLORING BANKING INSIGHTS

The Changing Payments and Financial Messaging Landscape

A special paper on the rapid evolution of the global payments and messaging ecosystem and the benefits of an integrated cloud-based aggregation platform.

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FOREWORD

Payments Innovation in the Digital Era

By **Peter Hazou**
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Since their inception, financial institutions have been uniquely positioned as the source of economic empowerment. Banks have been central to helping businesses and consumers reach their goals.

The combination of new technology, regulatory change and market expectations is transforming the way businesses and consumers pay and are paid, and has brought the industry to a pivotal moment. New payment infrastructures and instruments are challenging the established order, jeopardizing profitable business lines and revenue streams previously taken for granted.

"For financial services organisations, success in the coming decade depends on how well they transform to create new value, becoming indispensable partners in increasingly interdependent networks."

For financial services organisations, success in the coming decade depends on how well they transform to create new value, becoming indispensable partners in increasingly interdependent networks and complex value chains that cross business, geographic and industry boundaries.

At Microsoft, we work and partner with financial services organisations and payments solution providers across the globe, helping them innovate and deliver value to their customers and communities. Bottomline Technologies is one such valued partner. The benefits of holistic cloud-based solutions that integrate and simplify previously complex, siloed and proprietary processes are many.

As this insightful paper outlines, cloud-based solutions can break down technical and cost barriers, enabling rapid adoption and access to a global matrix of payment rails, together with providing the rich innovation platform that all financial institutions across the globe require. The requirement is to innovate, demonstrate relevance, and deliver value on a foundation of trust. I welcome the publication of this Bottomline Technologies report and its contribution to developing the digital transformation agenda that we all share.

Peter Hazou

Director Business Development, World Wide Financial Services Industry Group, **Microsoft**

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THE CHANGING LANDSCAPE

Embracing Transformation and Enabling Agility

The Way We Pay is Changing

The confluence of technology advances, increasingly complex regulatory mandates, new payments and settlement processes, and heightened customer expectations in a highly dynamic cloud-first, mobile-first landscape, is transforming banking and payments at an unprecedented velocity.

Today's digital transformations impact every industry and every business process, regardless of geography, from how corporates and consumers make and receive payments and connect with their banks, to the way in which banks connect to settlement networks in order to make new services available to their customers.

In this fluid and innovative environment, the continued success of financial institutions is dependent upon how well they adapt and evolve to serve their customers' needs, to provide the new solutions and value propositions that today's economy demands and expects.

New Payment Models

New payment services and models, such as the increasing global adoption of real-time payment schemes, along with regulatory changes across geographies are transforming the ways we pay. New technology paradigms – such as blockchain/distributed ledger technology (DLT), and Open-API connectivity – represent enormous potential opportunities, as well as considerable technical complexities and operational challenges for banks and other financial institutions.

The introduction of new payment instruments, along with regulatory steps to increase competition, and increasing instances of payments fraud, are additional transformation drivers for financial institutions and payment service providers.

The Payments Transformation Agenda

In the midst of these monumental digital transformations, a 'business-as-usual' approach is simply not an option if banks wish to remain relevant and thrive. They face challenging decisions and choices about aligning with new circumstances and opportunities. How can we best adapt and innovate? How do we manage the integration and connectivity to multiple global payments and settlement

infrastructures? How does the adoption of real-time payments capabilities impact existing batch-based end-of-day processes? Is it possible to retain our investment in existing core banking systems? Can we easily maintain regulatory compliance? Is our infrastructure secure from fraudsters?

The imperative to adopt and connect to an increasingly complex global matrix of infrastructures, networks, and counterparties, to integrate disparate and evolving technology standards while maintaining the highest levels of security and compliance, are considerable challenges for financial institutions.

This paper addresses these issues.

Such transformation and innovation is essential in today's dynamic digital environment. There is however an alternative to the costly, complex and siloed approach of connecting to and supporting multiple payments infrastructures and settlement networks globally, of duplicating messaging and compliance systems, and of continually building and bolting-on new technologies to cater for emerging payment instruments.

With heightened market demand for always-available, simple and secure services, along with tighter regulatory obligations and increased payment fraud risks – the benefits of next-generation cloud-based payments aggregation capabilities have never been more pronounced.

Financial Services Aggregation

The move from fragmented, complex and disconnected infrastructure connectivity and workflows, towards a modern, integrated, and secure platform approach brings a wealth of benefits far beyond efficiency, ease of innovation, and security: the total competitive advantage is far greater than simply the sum of these parts. In addition to looking at the key trends and challenges facing the market today, this paper provides an in-depth analysis of the challenges faced, and the benefits of a cloud-based aggregation approach.

TRENDS DRIVING CHANGE

2 Industry Challenges and Opportunities

Global Trends, Local Drivers

Technological innovation and heightened market expectations of simple and streamlined payments processes extend across all geographies and jurisdictions. Global adoption of instant payments systems reaches from Argentina to Australia, Singapore to Switzerland. Likewise, the potential benefits and impact of Open APIs crosses all borders, regardless of varying regional regulations. Almost by definition, blockchain and distributed ledger technologies are no respecter of national boundaries.

Intertwined with these broad global market trends, are no less impactful regional or national drivers – from concerns around political instability, country-specific decline in margins, road-map uncertainties for established legacy systems, or broad market-shaping initiatives such as the Second Payment Services Directive (PSD2).

Local market dynamics can further exacerbate these pressures. For instance, in the UK and Europe, there is a need for a one-stop financial messaging provider that can deliver technology to access and manage settlement accounts, as well as support Open Banking and PSD2 initiatives through secure APIs.

While interconnected and overlapping, we can identify five broad transformational categories, with both global trends and local drivers common to each:

Collectively, these trends are transforming the world of payments and financial messaging. After looking at each in turn, this paper examines how cloud-based 'plug-and-play' aggregation addresses these challenges, providing significant efficiency benefits, innovation capabilities, and reputational security for financial institutions of any size or scale – whether a start-up payment service provider or a global transaction bank.

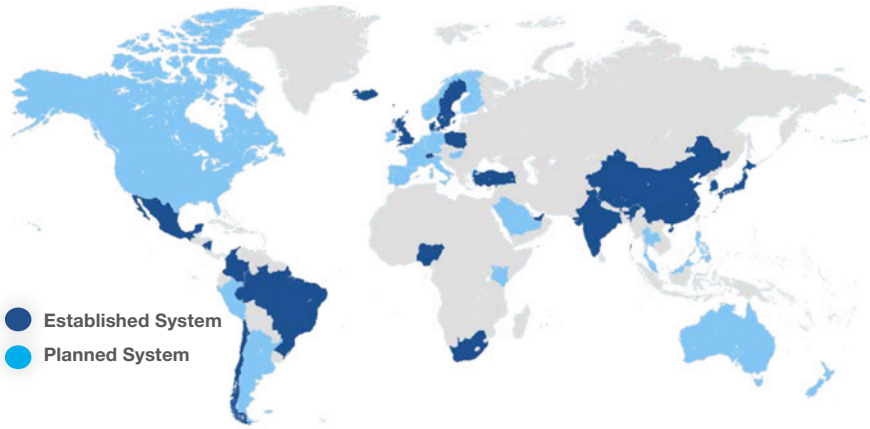
New Payments Services and Models

Financial institutions face an increasing requirement to connect to and support an expanding and divergent number of payment and settlement networks and instruments. Depending on institution and territory, these can include SWIFT, EBICS, SIC4, Bacs, Direct Debit, Faster Payments, CHAPS, CASS, Crest, ACH, TCH-RTP, NACHA, PayM, and more.

Global market demand for 24/7 365 instant payments – with the necessary processing, immediate availability of funds, and real-time compliance and reporting – provides additional integration, connectivity and daily management burdens. Following on from the Faster Payment initiative in the UK, the recent introduction of SEPA Instant enables real-time cross-border payments for 34 participating European countries. Existing legacy end-of-day and batch-based systems are ill-equipped for the always-available and instant processing demands of real-time payments.

Real-Time Payments Systems

Argentina	*Luxembourg*
Australia	*Malaysia*
Belgium	*Netherlands*
Canada	*New Zealand*
Europe/SEPA	*Norway*
Germany	*Peru*
Finland	*Philippines*
France	*Portugal*
Hong Kong	*Saudi Arabia*
Hungary	*Spain*
Italy	*Switzerland*
Ireland	*Thailand*
Kenya	*United Kingdom*
	United States



Global adoption of instant payments systems reaches from Argentina to Australia, Singapore to Switzerland. Likewise, the potential benefits and impact of Open APIs crosses all borders.

Meeting today's enhanced customer expectations and demands – delighting your customer – is an essential requirement to not just remain relevant, but to grow as a business, and to drive new revenue streams. The ability for banks to access new services and offer enhanced capabilities to their customers, will be a key market differentiator and essential in meeting heighted customer expectations.

An aggregated payments infrastructure enables the rapid adoption and incorporation of new technologies or payment rails and the highly efficient and cost-effective deployment of scalable new services. This increases customer choice and provides users with a clear competitive advantage over traditional and more complex development and deployment models.

The utilisation of blockchain and distributed ledger technologies such as RippleNet for financial messaging is also growing rapidly, as is market adoption of new payment instruments, such as Request to Pay, Enhanced Remittance Advice, and SWIFT gpi.

A Request to Pay will enable businesses and consumers to create and send payment requests. It allows recipients to easily decide how and when they want to respond, giving customers more control and flexibility over their outgoing payments, and improving money management.

SWIFT gpi is transforming cross-border payments and is set to be the standard for all such payments by the end of 2020. It has already been adopted by over 150 banks and enables beneficiaries to be credited in minutes or even seconds. It allows banks to track payments across the entire life-cycle, delivering transparency on fees, and ensuring remittance data remains unaltered when the payment arrives.

Today's Challenge: *To remain competitive by offering, supporting, and managing connectivity to a wide range of global payment networks, standards and instruments.*

Technology Innovation

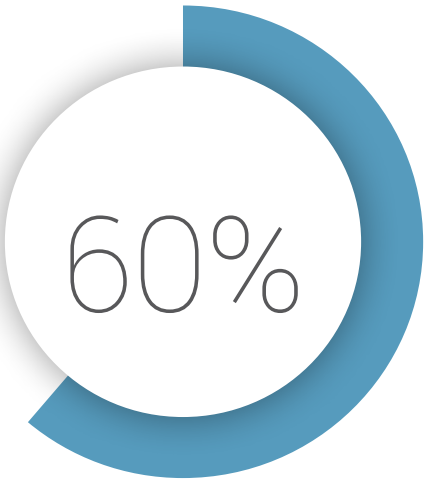
The opportunities afforded by the digital transformation of banking underpins every broad market trend and driver, with today's financial, corporate and consumer reliance upon cloud technologies being one of the most significant. The migration to cloud deployment of applications, computational power and data storage has been an essential architectural premise of the modern digital economy. The incorporation of cloud can also play a vital role in bridging the gap between legacy core banking systems and modern payment architectures, while retaining past investments and existing banking systems.

Distributed ledger technology (DLT) is driving payment services innovation, and Machine Learning capabilities are increasingly central disiplines in order to reason over customer data, provide personalised customer advice, and protect against payments fraud.

Regardless of regional regulatory mandates, the adoption and integration of Open API capabilities are technology essentials in order to meet market demand and customer expectations of a rich interoperable payments ecosystem.

The regulatory drive in certain markets to expose existing core banking systems to Open API integration represents far more than a regulatory challenge – it is a strategic opportunity for banks, non-bank financial institutions and new payment services providers to deliver innovative and compelling services to businesses and consumers.

A recent survey by the Banking Industry Architecture Network found that over 60% of Banks confirmed they are struggling to adopt API integration because of the "current state of banks' core architecture" – only 16% were prepared to integrate APIs into their banking processes. The API integration capabilities of a payments aggregator facilitates interoperability with global counterparties and services, removing the complexity and considerable integration challenge of individually



Over 60% of banks confirmed they are struggling to adopt API integration because of the "current state of banks' core architecture"

– Banking Industry Architecture Network Survey*1*

interfacing with a large volume of proprietary or national API formats and protocols – a costly and onerous exercise to achieve with legacy back-office banking systems.

In addition, aggregation technology enables the easy integration and embedding of future technologies into existing payments systems and processes as they emerge and are required.

Today's Challenge: *To integrate and embed new and emerging technologies into existing payment systems and processes.*

Customer Expectations

While consumer payments are ubiquitous and frictionless, business payments have traditionally remained obscure and counter-intuitive. In today's digital banking era, the inherent complexities of larger transaction volumes, proliferated ledgers and regulatory oversight are no longer accepted as justification for poor and complex service

Increasingly enterprise customers demand the same ease of use, convenience and control that are common in the consumer market. Existing legacy and proprietary third-party solutions can struggle to adapt and scale to meet today's requirements. Banks that remain tied to closed systems and fail to innovate will lose relevance and market-share, unless they can adapt quickly. New payments processes and technologies such as APIs and DLT threaten established and entrenched infrastructures and core banking systems – systems largely residing in mainframe environments dating back to when the internet was a mere glint in the eye of Tim Berners-Lee.

The opportunities afforded by the migration to cloud deployment and the adoption and integration of API capabilities are technology essentials in order to meet market demand for a rich interoperable financial messaging ecosystem. Artificial Intelligence disciplines such as Machine Learning and Natural Language Processing are increasingly central disciplines in order to understand data, provide personalised customer advice, and protect against payments fraud.

The expectation of a seamless and frictionless payment process, 24/7 and 365 is the new norm – and one that insular legacy systems are ill-equipped to provide.

For financial institutions to remain relevant and meet the heightened expectations of a digital marketplace, innovation is simply essential. Even from a narrow compliance perspective, regulatory mandates in many territories are opening existing banking systems up to third-party API access, driving innovation and increasing competition.

The expectation of a seamless and frictionless payment process, 24/7 and 365 is the new norm – and one that insular legacy systems are ill-equipped to provide. A modern payments infrastructure enables the embedding and integration of new technologies and capabilities with legacy backend environments, delivering the rich and versatile payment and settlement solutions.

Today's Challenge: *To meet and exceed the demands of a mobile-first, cloud-first market, providing simplicity, convenience, control, speed, and security in an omni-channel environment.*

Compliance and Regulatory Mandates

Compliance with a growing matrix of regulatory regimes and international standard and security requirements, is essential for banks to operate and to ensure financial and reputational integrity. New regulatory initiatives impact virtually all territories and payments processes – often carrying significant compliance costs. These can range from global campaigns such as SWIFT's Customer Security Programme (CSP), to the regional directives such as the broad and far-reaching PSD2, promoting API adoption and Open Banking, to national mandates such as SIC4 in the Swiss market.

Financial crime compliance obligations have also never been more stringent and wide-ranging. With global sanctions obligations becoming less monolithic and more nuanced, complex and fluid, and with a growing number of individual entities and corporations being blacklisted, the requirement to screen all transactions and counterparties with fully updated global watchlists can be onerous, with severe financial and reputational penalties for non-compliance.

"Migrating our financial flows to an outsourced infrastructure was a key step in providing us with greater resiliency, flexibility and security, and reducing transaction costs for our customers."

– Markus Beck, Head of Business Technology, ARIZON Sourcing AG

In addition to tackling the many compliance challenges and the need to access multiple payment infrastructures, format standardisation and the adoption of ISO 20022 can create further integration or migration burdens.

Aggregator connectivity solutions address these challenges, providing a seamless and secure access point to multiple payments systems, integrated with backend environments and ensuring compliance with all technical and regulatory requirements. Such an aggregated gateway can include a fully integrated and configurable sanctions screening service, along with market-leading real-time fraud detection and protection capabilities. Centralising, automating, and screening your payments processes in this manner can significantly reduce operational and compliance risk – and costs – for financial institutions.

Scalable, secure and interoperable aggregation technology provides far more than connectivity efficiencies and cost savings – it represents the innovation foundation upon which banks and payment service providers can develop and deploy their own category-defining products and services that adhere to current regulatory mandates.

The full interoperability between evolving messaging standards, protocols and application interfaces provided by an aggregated payments platform, ensures future proofing against regulatory and format changes, and scheme or technology developments. The cloud-based extensible architecture enables the retention of past investment in legacy systems, while also being capable of delivering the dynamic digital services that define today's, and tomorrow's, payments and messaging ecosystem.

Today's Challenge: *To ensure reputational and financial security, with global regulatory adherence across all operating territories, including technology standardisation, management oversight, and financial crime compliance.*

Increased Security Risks

The increasing threat of highly sophisticated payments fraud ensures that risk-mitigation remains a high priority. With 74% of financial professionals reporting that their companies experienced payment fraud over the last year, fragmented payment environments are proving more difficult to secure and more vulnerable to compromise.

Institutions need a payments and financial messaging platform that boasts market-leading fraud detection capabilities, proving a highly secure payments environment. Bottomline was the first to launch a Real-Time SWIFT Fraud Detection solution, deploying Machine Learning to provide message interrogation for additional protection over the SWIFT network. Integrated transaction monitoring and real-time reconciliation ensures payment anomalies are identified and investigated immediately. Powerful exception and case management controls enable payment flows to be analysed and scanned in real-time.

Traditional security measures tend to focus on keeping outsiders from getting into the network. However, according to the Association of Certified Fraud Examiners, 78% of cyber fraud loss involved employees or someone with internal access. Insider threats can come in the form of employee error (clicking on a phishing email, for example), intentional malicious behaviours or corporate identity theft.

The challenge for security systems is recognising the difference between ordinary employee behaviour versus malicious activity. Identifying these manipulations requires a system with a wide range of fraud scenarios, intelligence, advanced analytic capabilities and high flexibility to detect anomalies within seemingly regular behaviour patterns. The full payment lifecycle visibility offered by an integrated payments platform mitigates against risk and fraud, and can uniquely provide user behaviour and transaction flow monitoring for the highest possible levels of security.

74% of financial professionals reported that their companies experienced payment fraud last year

– 13th Annual Payments Fraud and Control Survey by the Association for Financial Professionals

Today's Challenge: *To counter the growing threat of payments fraud, with real-time fraud detection capabilities and unique user behaviour monitoring capabilities.*

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'PLUG-AND-PLAY' SIMPLICITY

Increased Efficiency, Productivity and Value-Add Capabilities

Simplified Architecture

Of all the industry challenges facing financial institutions, the rapid introduction of new payments and settlement processes is perhaps the most burdensome and complex. Accessing these disparate payments infrastructures carries heavy overheads, resulting in increased operating costs, technical complexity and duplication of processes.

Controlling accurate transaction settlements in various formats from multiple counterparties is difficult and time-consuming, with regulatory compliance obligations presenting further operational challenges.

These fundamental challenges exist for all participants, regardless of position or size. New banks, or non-bank Payment Service Providers entering the payments market, can however face additional and considerable technical and financial barriers to access payments and settlements infrastructures – with these obstacles discouraging innovation.

For certain payments systems, providers have been restricted to indirect or bank-sponsored access, with the resulting need to route payments through established banks – a protracted processing model with additional expense and delay.

By adopting a cloud-based aggregation approach, financial institutions gain a significant competitive advantage, removing complexity and process duplication, lowering operational costs, and increasing productivity.

Lower Cost Access

Integrated payments infrastructure addresses these challenges by providing a significantly lower cost and faster to implement single access point to multiple payments systems, ranging from SWIFT messaging to instant payments, file-based mass payments, and other global and domestic infrastructures.

It provides flexible and secure integration with backend environments, ensuring compliance with all technical and regulatory requirements. The full interoperability between standards ensures future proofing against regulatory and format changes, and scheme or technology developments. By adopting a cloud-based aggregation approach, financial institutions gain a significant competitive advantage, removing

complexity and process duplication, lowering operational costs, and increasing productivity.

Lower Total Cost of Ownership (TCO)

Connectivity to, and the management of, multiple payments infrastructures, networks and new technologies is costly and time consuming. Managing multiple formats, protocols and interfaces, especially in a climate of rapid change, is an expensive overhead.

Legacy third-party proprietary systems are limited in functionality and struggle to integrate with today's real-time payments processes.

Legacy third-party proprietary systems are limited in functionality and struggle to integrate with today's real-time payments processes, such as SEPA Instant Credit Transfers, Faster Payments, and TCH-RTP. Financial instutions need to invest significantly to implement, access and maintain each of these systems.

Cloud aggregation technology removes the need to maintain multiple separate connectivity processes and siloed interfaces. It represents a uniquely cost-effective and 'plug-and-play' way to access global market infrastructures with significantly lower TCO compared with managing multiple in-house connections. Unrivalled in reach, unmatched in efficiency.

Increased Productivity and Value-Add Capability

The benefits of aggregation technology incorporate a comprehensive suite of additional value-added features, including payments and securities network access, real-time settlement and transactions reconciliation, file format transformation and routing of messages, fraud protection and sanction screening, market data management, and a route to aggregating and translating APIs.

A single consolidated view across all transaction flows, regardless of network, removes the traditional complexities of managing disparate workflows, facilitating increased automation along the supply chain and the removal of inefficient and error-prone siloed, manual processes.

By delivering sophisticated back-end integration, file translation, and message management, straight through processing rates are increased. With improved transparency, payments management is simplified, productivity dramatically increased.

The integration of value-added payments services additionally avoids the costs and implementation headaches usually associated with the access to and management of multiple vendor solutions.

Top 10 Aggregation Technology Benefits

- *Lower cost entry and easier access to payments and settlements infrastructures*
- *Comprehensive range of value-added efficiency services, increasing automation along the payments chain and STP rates*
- *Reduced operational costs and complexity*
- *Accelerate time to market and deployment of new services*
- *Retain existing investment by integrating new technologies such as API, DLT and Machine Learning with existing banking systems*
- *Increase competitive edge and develop new revenue streams*
- *Meet enhanced customer expectations and demands*
- *Easily extend market coverage*
- *Highest levels of compliance assurance and payments fraud detection and prevention*
- *Future proofed solution aligned to compliance requirements*

4

CONCLUSIONS

Selecting an Innovation Partner

Bridging the Past to the Future

Innovation for financial institutions in today's digital era is a business imperative. Burdened with legacy infrastructures and core banking systems, even the most well-resourced of global financial enterprises faces some daunting challenges and obstacles in pursuing a dynamic transformation process.

Bottomline Technologies Universal Aggregator solution was developed with one simple mission in mind: to address a fundamental challenge of global payments and financial messaging, and to provide a single simple interface to a disparate network of payment and settlement infrastructures, formats and technologies; to streamline, rationalise and simplify. To build a foundation for digital transformation, one that leverages and retains today's core banking systems, while providing an extensible and flexible interface for tomorrow's technology and capabilities.

Universal Aggregator is a one of a kind proposition. A multi-award-winning platform that enables the management and control of all global transactions through a standardised single interface, dramatically improving efficiency, lowering operating costs, ensuring regulatory compliance and delivering state-of-the-art real-time fraud protection.

Over the past twenty-five years, technology paradigms may have come and gone, but Bottomline's mission – our corporate DNA – has remained constant. We make complex business payments and financial messaging simple, smart and secure.

We hope you have found this paper informative and useful. Click here to see how aggregation technology is being utilised to overcome these challenges.

Alternatively, use the contact details on the next page to get in touch and to find out how we can help your organisation on its digital transformation roadmap – improving efficiency, enhancing your services and mitigating risk.

"We selected Bottomline … it is the only true 'full-service' aggregator in the field."

– Aisling Kane, Chief Operating Officer, Metro Bank

Why Choose Bottomline

Bottomline Technologies is the ideal partner to deliver market-leading connectivity and payments management solutions. We power mission-critical business transactions and help our customers optimise financially-oriented operations and build deeper customer and partner relationships by providing a trusted and easy-to-use set of cloud-based digital banking, fraud prevention and payment solutions.

Over 10,000 corporations, financial institutions, monetary authorities and banks rely on Bottomline every day to power their organisations. Bottomline solutions deliver lower costs, enable better planning and forecasting, provide greater efficiencies, enhanced decision-making, and lower risk. Bottomline makes complex global payments simple, secure and seamless.

For more information, visit www.bottomline.com.

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