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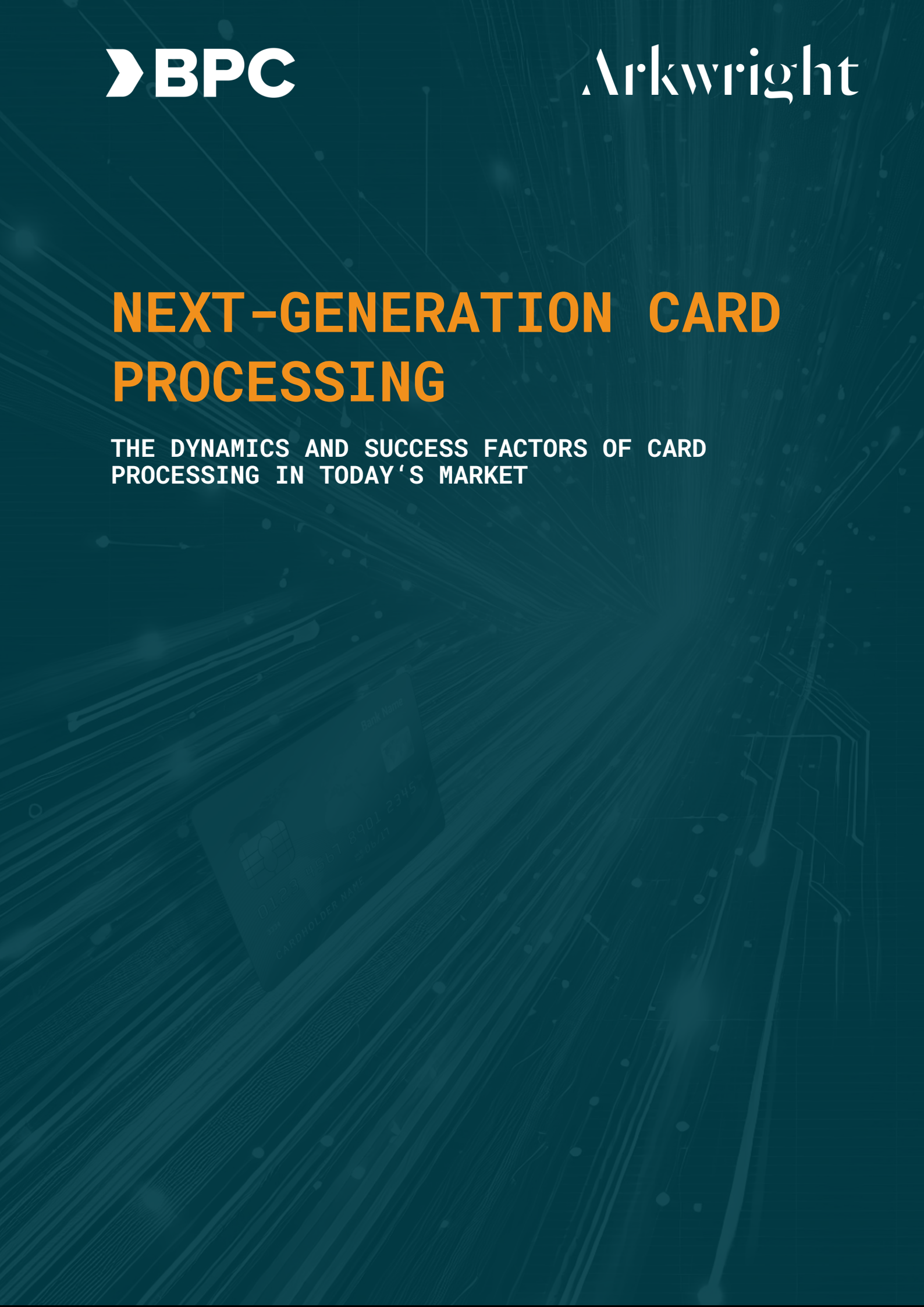
NEXT-GENERATION CARD PROCESSING

THE DYNAMICS AND SUCCESS FACTORS OF CARD PROCESSING IN TODAY'S MARKET



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NEXT-GENERATION CARD PROCESSING
The dynamics and success factors of card processing in today's market

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1.0 Executive summary

In recent years, new forms of card processing have been gaining increasing amounts of attention in the payments market, with providers like Pismo, Marqeta, Enfuce, and BPC growing faster than established processors. Their success is driven by more advanced processing systems and a focus on new target groups, with concepts such as "cards as a service" taking hold in embedded finance.

In this white paper, we analysed a sample of 10 challengers and found that their growth rates are four times higher than the overall card processing market. While this growth must be considered relative to their baseline, it raises an important question: What defines "next-generation card processing", and what is key to its success? To explore this, we tested three working hypotheses regarding factors in market adoption:

1. **Openness and integration:** Although API-based integrability was once a distinguishing feature of new processing solutions, incumbents have largely caught up in terms of functionality, meaning that this is no longer a clear differentiator.
2. **Regulatory enablement:** Regulatory and scheme licensing access can unlock new market segments, including non-banks and smaller financial institutions. However, in this study, this was not found to be a defining factor.
3. **Functional innovations:** Based on our analysis of 46 providers and over 150 card portfolio wins, we concluded that, at their core, new card processing solutions are not driven by isolated elements like open APIs, regulatory access, or advanced technical features. Instead, it is the interplay of these factors, coupled with the ability to effectively target specific customer segments or parts of the issuing value chain, that drives success.

Notably, no single provider offers all of the innovative features identified in our research, highlighting the uniqueness and differentiation potential of these offerings. In collaboration with BPC, this whitepaper presents several case studies and examples which illustrate these findings.

2.0 Introduction

Over the past decade, the card processing market has been shaped by several key dynamics. Increasing commoditisation has led to overcapacity and declining prices, driving consolidation across incumbents pursuing a buy-and-build approach to leverage economies of scale and scope.

At the same time, new entrants and challengers have steadily gained traction by developing advanced processing platforms. Some of these players have proven able to secure major customers and high processing volumes within a relatively short period, claiming that they are "redefining card processing" and, to all appearances, outpacing overall market growth. This raises the question of what new card processing technology is and what makes it successful?

In collaboration with BPC, this paper analyses the key characteristics of cutting-edge card processing technology, exploring current growth dynamics and the reasons behind this above-market-average growth with a particular focus on:

1. **Market overview and growth dynamics:**
   - What are the current market dynamics?
   - What does the provider landscape look like?
   - Do next-generation card processors outperform the market? If so, by how much?
2. **Analysis of success factors:** based on three working hypotheses:
   a. Openness & integrability: Next-generation card processors offer greater openness and integration capability using well-designed, well-documented APIs, enabling embedded finance and facilitating easier bank integrations.

   b. Regulatory enablement: Next-generation card processors provide regulatory and scheme licensing access, unlocking new market segments, including non-banks and smaller financial institutions.

   c. Functional innovation: Next-generation card processors harness the interplay of cutting-edge APIs, regulatory enablement, and flexible processing systems to deliver tailored solutions for specific groups and use cases.

3.0 Market overview

In this chapter, we will examine key industry trends from a customer perspective, outline the card processing landscape by comparing incumbent and challenger providers, and assess the growth of both segments.

The "customer perspective" vis-à-vis card processors is not limited to issuing banks, but also includes card program owners

3.1 Key trends

It is important to note that, to an ever higher degree, the "customer perspective" vis-à-vis card processors is not limited to issuing banks, but also includes card program owners. With the growing significance of embedded finance, these program owners—who typically do not hold a banking, payment, or scheme license—use an "as a service" model to issue cards through a licensed card processor acting as a white-label supplier.

While trends from a cardholder perspective are rather straightforward – e.g. mobile-first experiences, real-time functionality, and seamless digital integration – the requirements for traditional issuing banks and card program owners are far more complex. The main considerations in this context are illustrated in Fig. 1:

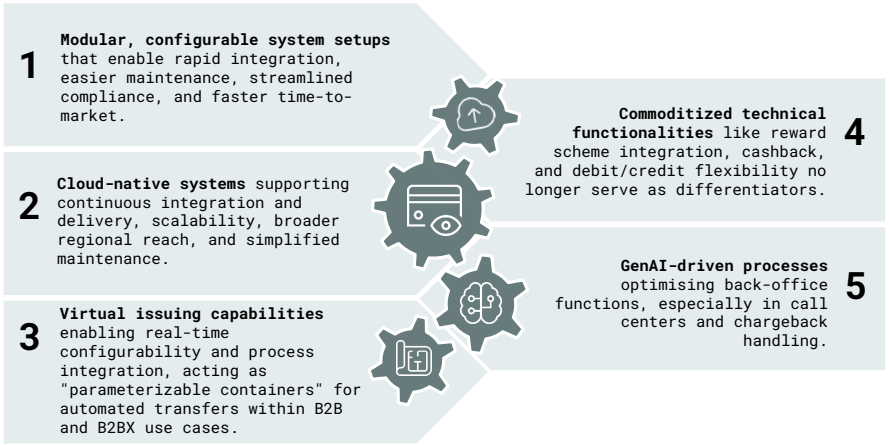


Fig. 1: Key trends shaping card processing services[1]

1) Source: Arkwright analysis.

3.2 Market landscape

As previously outlined, the provider landscape can be divided into two segments based on the date of their operational start: incumbent card processors and challengers. Figure 2 illustrates this timeline by geographical region.
This timeline highlights two main phases: firstly, the period during which incumbents became established and then, later, the rise of challengers. One of the principle reasons for the emergence of has been the increased need for real-time capabilities and seamless integration with front-end systems, driven by the appearance of mobile services. The key features of this classification are included in the table in Fig. 3.

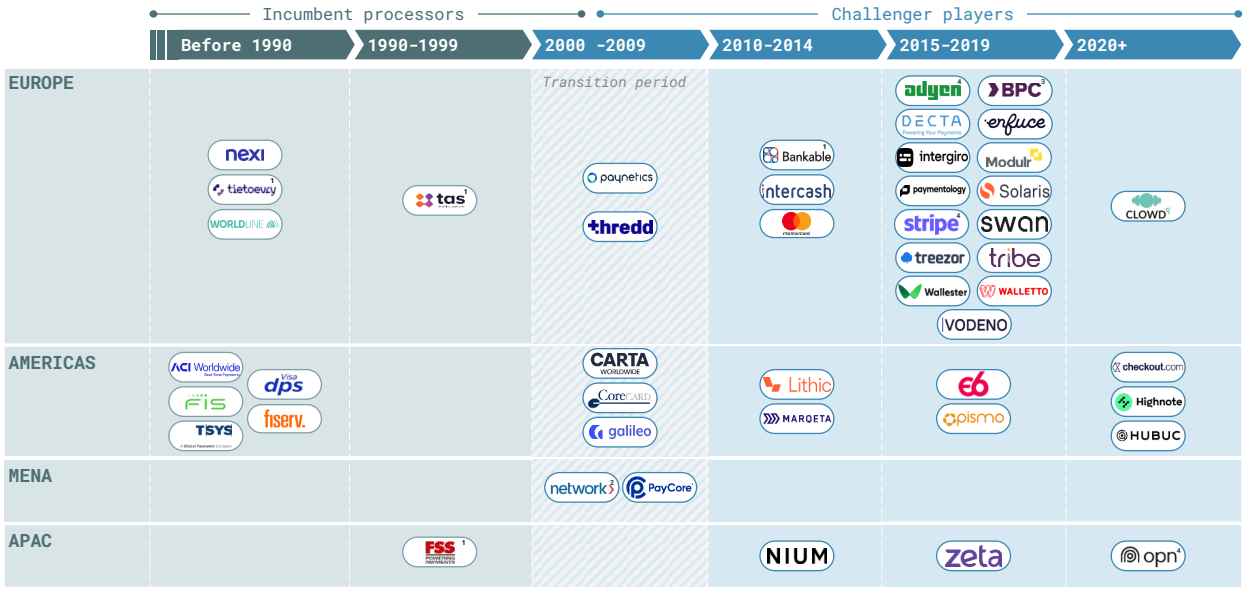


Fig. 2: Timeline and player landscape by region of origin (non-exhaustive)[2,3]

2) Market participants are categorised on the year in which they were founded and – wherever available – the year they entered the card processing market. Bankable, FSS, TAS and Tietoevry began as software providers and moved into card processing at a later date; Network International began third-party card processing in 2003, while BPC began as a software vendor, subsequently moving into development and provision of issuing software and then card processing in 2018.
3) Source: industry press, companies' annual reports, Arkwright analysis.

	Incumbents	Challengers
Positioning	Well-established relationships with banks, enabling incumbents to process the majority of global card volumes	Mostly cater to the needs of new digital financial and non-financial service providers (e.g., neobanks, delivery platforms, ERP solutions).
Platform	Operating at scale, often with fully depreciated assets, leads to comparatively lower operating costs. However, overcapacity, price compression, and increased competition have resulted in lower prices and shrinking margins	Built for mobile-first services platforms, prioritising functionalities such as seamless integration, real-time interaction, and modularity to support a wide range of B2C and B2B2X use cases.
Key Challenges	Major platform updates are, in some cases, still needed or currently pending	Ability to scale while maintaining competitive pricing and a resilient, high-availability infrastructure

Fig. 3: Characteristics of processors classification

Labelling incumbent providers as "legacy platforms" would be an oversimplification. Many have overhauled their systems over the past decade.

It should be noted that labelling incumbent providers as "legacy platforms" would be an oversimplification. Many have overhauled their systems over the past decade and can now be considered cutting-edge card processors. Whether full-scale or limited, however, the extent of their system development has been primarily driven by internal strategic priorities and often is not apparent from the outside.

3.3 Growth dynamics

In order to understand the growth dynamics of challengers, we will begin by examining overall market growth, as illustrated in Fig. 4. Based on data published by the two international card schemes, Visa and Mastercard, the card-based payment market has experienced an average annual growth rate of 9% in recent years.[4] In 2021, the volume was 18,100 billion USD, rising to 21,330 billion USD over the following two-year period.

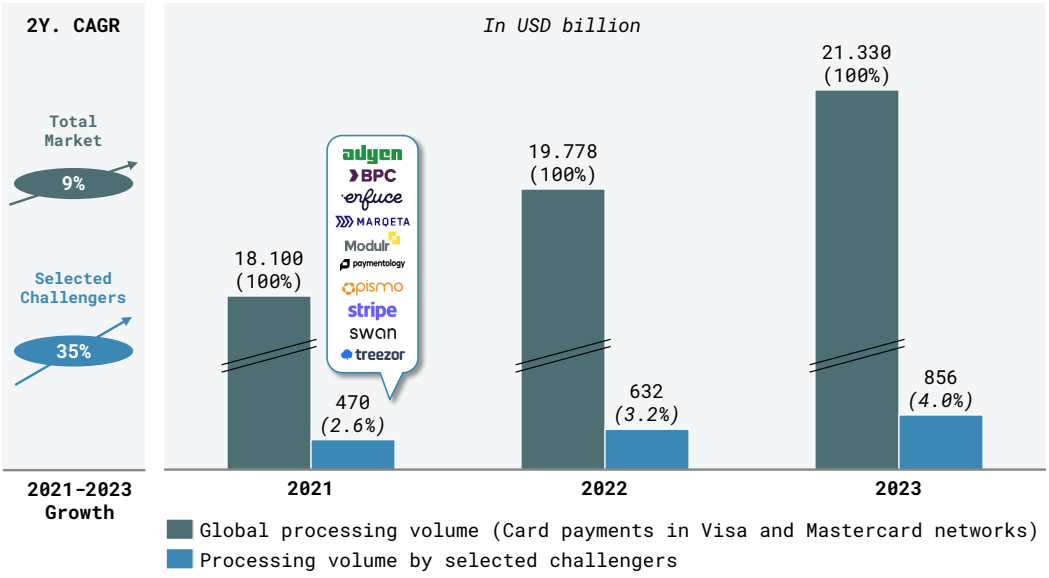


Fig. 4: Estimated market shares challenger processors compared to global card payment volume[5,6]

For the purposes of comparison, the analysis included a sample of 10 challengers and examined their processing volume growth over the same period. The findings show that these challengers have achieved a compound annual growth rate (CAGR) of 35% in processing volumes since 2021, significantly outpacing overall market growth.

4) Visa, Annual Report 2023 and Mastercard, Annual Report, 2023
5) Visa data excludes Europe co-badged volume and transactions on co-badged European networks (e.g., V PAY, Interlink). Mastercard data focuses on Mastercard-branded cards, while excluding Maestro and Cirrus cards. The estimation of challenger processing volume is approached conservatively, relying on published information regarding ten challenger card processors (Adyen, BPC, Enfuce, Marqeta, Modulr, Paymentology, Pismo, Stripe, Swan and Treezor)
6) Source: Annual reports, Arkwright analysis.

Consequently, their market share has increased from 2.6% to 4.0%, although starting from a relatively low base compared to the total market size.

To understand the drivers behind this above-average growth, we compared contracts won by selected challengers and incumbent players[7] based on press-releases and other sources of information in the public domain. These data points for the period between January 2021 and April 2024 are illustrated in Fig. 5.

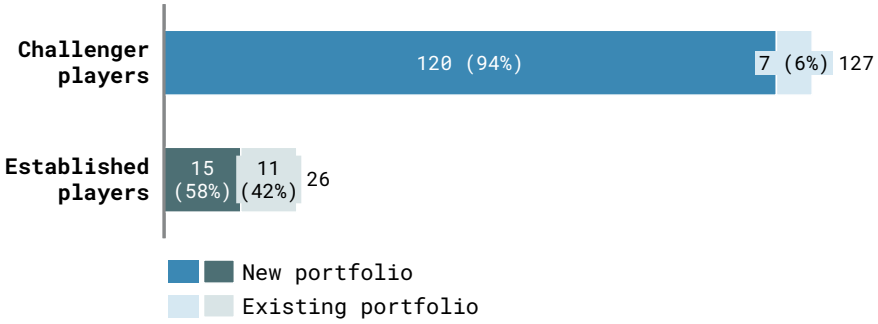


Fig. 5: Client contracts signed by incumbent and challenger players (selection of six incumbent and six challenger players) based on press releases and other sources of information in the public domain[8]

The new-client business identified falls into three segments: banks, FinTechs (including neo-banks, SME lenders, BNPL providers etc.), and non-financial services companies (e.g. retailers, large consumer brands, HR, mobility, gig economy platforms, and marketplaces).

7) The sample of incumbent players includes TSYS, Worldline, Fiserv, Nexi, FIS Global and Worldline. The set of challenger players includes BPC, Swan, Paymentology, Enfuce, Marqeta and Wallester.

8) Illustrative analysis based on the publicly-available information regarding new client activity of selected incumbent and challenger processors between 2021 and April 2024.
Source: company's annual reports, press releases, industry media, Arkwright analysis.

Incumbent processors appear to be facing greater competitive pressure insofar as 40% of their portfolio wins involve displacing an existing provider; this compares to just 6% for challengers

From this research, two key insights emerge:

1. Challengers publicly reported five times more new contracts (namely 127 vs. 26 in the sample), suggesting that they are acquiring customers at a significantly higher rate. However, these customers mainly consist of smaller or newer portfolios which may not be immediate targets for incumbent processors.

2. More importantly, incumbent processors appear to be facing greater competitive pressure insofar as 40% of their portfolio wins involve displacing an existing provider; this compares to just 6% for challengers, who are signing over 90% of new portfolios, indicating a focus on clients outside the traditional card processing target market.

These findings raise a question: what are challengers doing differently to enter new market segments and outpace incumbents in client growth—particularly beyond traditional banks – and what are their key success factors?

4.0 Success factors

Challengers appear to be more successful in winning new portfolios than incumbents. Analysing their value propositions, three working hypotheses emerge as possible explanations for their higher rates of customer acquisition and growth—and these potential factors will be examined in the following paragraphs:

1. **Openness and integration:** Next-generation card processors offer greater openness and integrability through well-designed, well-documented APIs, enabling embedded finance and facilitating easier bank integrations.

2. **Regulatory enablement:** Next-generation card processors provide regulatory and scheme licensing access, unlocking new market segments, including non-banks and smaller financial institutions.

3. **Functional innovation:** Next-generation card processors harness the interplay of cutting-edge APIs, regulatory enablement, and flexible processing systems to deliver tailored solutions for specific groups and use cases.

4.1 Openness and integration

Hypothesis 1: *Next-generation card processors offer greater openness and integrability through well-designed, well-documented APIs, enabling embedded finance and facilitating easier bank integrations.*

To test this hypothesis, we analysed 46 payment processors to determine whether their APIs were publicly available on their websites. The results of the analysis are illustrated in Fig. 6.

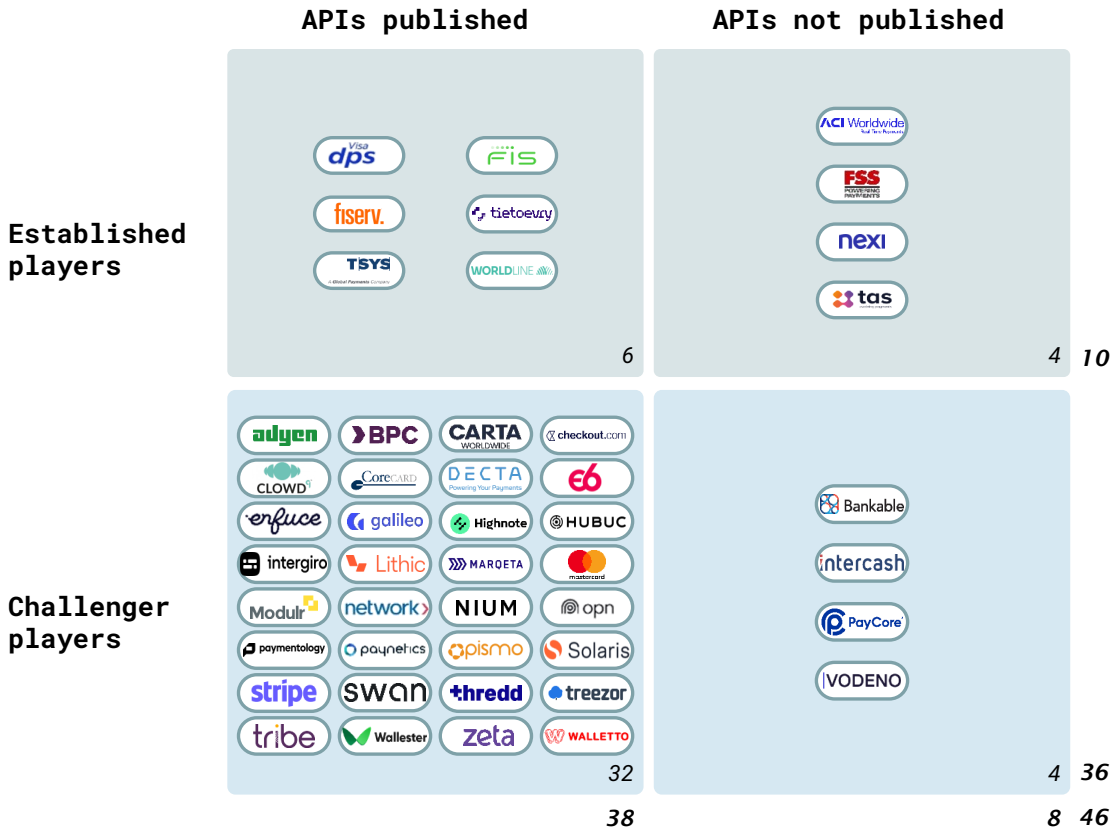


Fig. 6: API openness of incumbent and challenger players based on API availability (N=46)[9]

9) Source: companies' websites and product documentation, Arkwright analysis. Illustrative and non-exhaustive.

The majority of challengers (89%) provide access to their APIs, typically offering general API descriptions, Postman collections, documentation, as well as tutorials and open sandboxes. Notably, 60% of incumbent players have also made their API documentation public. Overall, 38 of the 46 processors publish API information, indicating a shift toward an API-first approach as a new industry standard.

The widespread availability suggests that API openness is no longer a unique differentiator, leading to the rejection of our first hypothesis.

It should be noted that, while some providers may choose not to publish APIs for confidentiality reasons, there are strong benefits to doing so: publishing APIs demonstrates technical sophistication and broadens market reach by allowing customers to build solutions on the processor's infrastructure early on.

4.2 Regulatory enablement

Hypothesis 2: *Next-generation card processors provide regulatory and scheme licensing access, unlocking new market segments, including non-banks and smaller financial institutions.*

The second hypothesis suggests that, by offering access to a banking or payment license, new-entrant card processors can broaden their reach to non-banks and smaller financial institutions. This "cards as a service" (CaaS) model opens up new market segments beyond issuing banks.

To test this hypothesis, we analysed 46 payment processors based on publicly-available information to assess whether they hold relevant licenses such as electronic money institution (EMI), payment institution (PI), or full banking licenses. The findings are illustrated in Fig. 7.

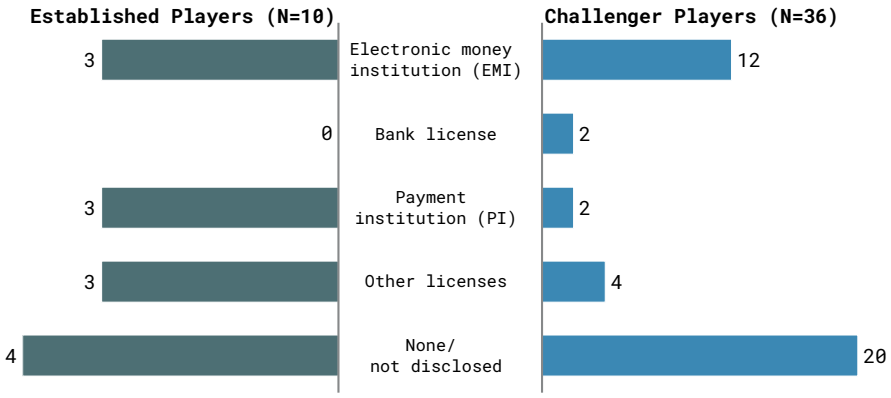


Fig. 7: Licenses held by incumbent and challenger players (N=46, multiple licenses possible)[10]

Of the 36 next-generation card processors reviewed, 16 hold licenses (EMI, PI, or full banking), while 20 either lack licences or have not disclosed their licensing status. Notable examples include Enfuce, Modulr, and NIUM, which are licensed in both the UK and Europe. Among incumbent players, six are licensed, and four have not disclosed their status. Key players like Nexi and Worldline hold EMI and PI licenses, while US-based processors such as TSYS and FIS operate under money transmitter licenses.

This working hypothesis fails as, on the basis of the above findings, the two categories of players appear to have similar licensing reach. This is further underscored by the various partnership models in which a processor provides regulatory coverage and a scheme license through other partners.

10) EMI and PI refer to, respectively, electronic money institutions and payment institutions authorised by the competent national authority. A bank license refers to a full banking license, or in some cases, depending on national regulations, it could also include credit institution licenses or similar certifications. Other licences refer to payment institution licences not included in the other categories (e.g. licence for money transmitters.

4.3 Functional innovations

Hypothesis 3: *Next-generation card processors harness the interplay of cutting-edge APIs, regulatory enablement, and flexible processing systems to deliver tailored solutions for specific groups and use cases.*

In order to clarify the interplay between these elements, we have defined five functional layers: core processing functionalities at the foundation, followed by three additional layers: cloud-native architecture, platform integrability and regulatory coverage. Together, these layers form the basis for innovative features, represented by the top layer as illustrated in Fig. 8.

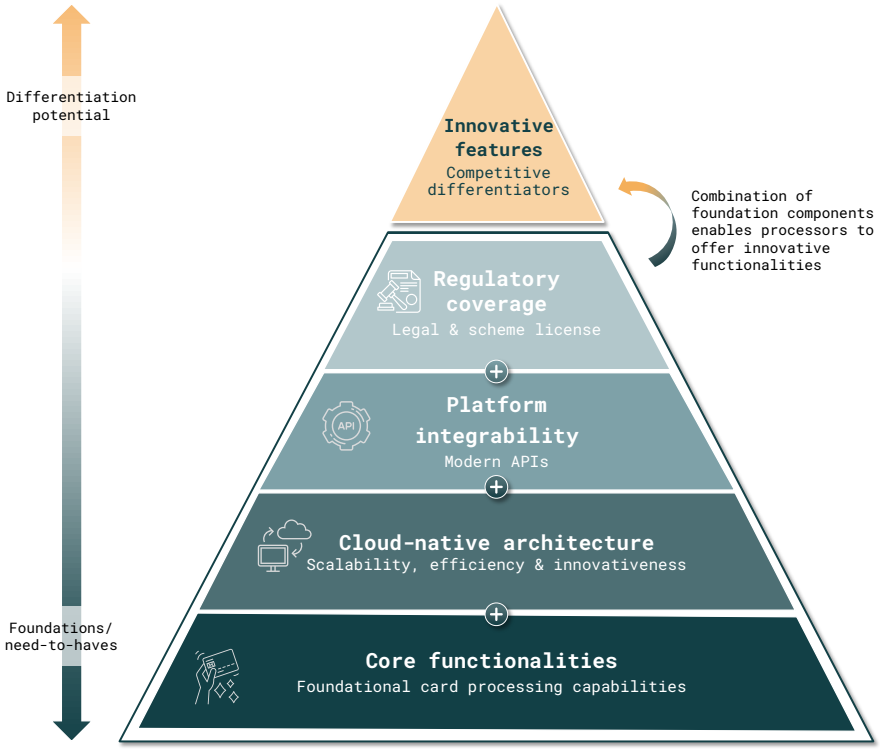


Fig 8: Pyramid of solution components for cutting-edge card processing

Now largely commoditised, these core functionalities are offered by most processors.

4.3.1 Core functionalities

Core functionalities for credit and debit card processing range from card account set-up to various stages of transaction processing. These are often bundled with service operations like fraud monitoring or chargeback handling, as well as additional technical features, such as consumer finance capabilities. Now largely commoditised, these core functionalities are offered by most processors and are described in detail below in Fig. 9.

Card account mgmt.	Account setup	Setup of customer and account including master data and product
	Instant issuing	Immediate issuance of a card (typically a virtual card), after customer has been approved for an account or card (incl. KYC, AML, scoring)
	Card holder management	Management of cardholders and their accounts, incl. posting transactions, managing limits and customer data
	Card control	Self-service functions for cardholders, e.g. limits, approval for certain channels, blocks, PIN changes, etc.
Transaction processing	3D Secure	Additional authentication step to enhance security and prevent fraud especially for card-non-present transactions
	Tokenisation & X-Pay integration	Ability to use the issued card in digital wallets such as Apple Pay or Google Pay, with sensitive card data secured through tokenization
	Transaction authorization	Verification and approval of payment requests by checking funds availability and assessing fraud risk
	Clearing & settlement	Reconciliation of payment orders between financial institutions, followed by the final transfer of funds between the parties
	FX management	Multi-currency transaction processing
	Fraud prevention & management	Technical solutions to prevent and manage fraud cases
	Dispute & chargeback handling	Technical solutions to manage disputes and chargebacks
Value added services	Operations	Contact center & backoffices including manual chargeback and fraud handling
	Product related features	Range of product functionalities (including loyalty programs, insurance integration, sub-accounts, partner cards etc.)
	Business reporting & analytics	Collection and analysis of card payment data to gain insights into card program performance and maximise customer lifetime value
Consumer finance capabilities		Ability to provide revolving credit, convert transactions into individual instalment plans, issue virtual cards in BNPL contexts etc.

Fig 9: Core functionalities for card program owners and cardholders[11]

11) Source: Arkwright analysis.

4.3.2 Cloud-native architecture

In addition to the "what" of the processing scope in the first layer, this section focuses on the "how" from an IT architecture perspective. From this angle, cloud-native processing solutions have emerged as state-of-the-art technologies, specifically designed for cloud environments and fundamentally different from traditional mainframe set-ups. Beyond simpler maintenance and improved system performance, the key advantages in card transaction processing include:

1. **Innovation capability:** Faster development cycles and releases are insured using continuous integration and deployment (CI/CD) and DevOps practices. This is especially important for timely regulatory compliance and security updates, as well as rapid product innovation.

2. **Security and availability:** Redundant and geographically-distributed data centres ensure high availability and enhance disaster recovery capabilities. Regular global security updates provided by cloud vendors help maintain security standards.

3. **Scalability:** Automatic and elastic resource adjustments enable providers to handle spikes in transaction volumes while also supporting portfolio growth, including international expansion due to the global availability and consistent service delivery across regions.

While some of these benefits also apply to updated legacy systems made cloud-ready through re-platforming or containerisation, cloud-native systems offer greater advantages in terms of agility, efficiency, and scalability.

4.3.3 Platform integrability

The third layer focuses on APIs which integrate processing functionalities in a cloud-based environment, both for banks and non-licensed card program owners in the context of embedded finance. While offering open APIs is now almost a standard commodity service, the quality of those APIs – along with comprehensive documentation and a tech-driven culture– remains a crucial factor in being considered among the relevant partners in embedded finance. These features are described in detail in the table below (Fig. 10).

Setup	Self-serving & testing	Enables experimentation with new products/services in secure sandboxes, reducing time to market
	Developer resources	Offers comprehensive documentation, SDKs, and community support to guide smooth integration and maintenance
	Ecosystem integration	Allows relatively easy integration with third-party systems, including partner ecosystems
Functionality	Real-time connectivity & performance	Provides instant, event-driven transaction processing and data updates with high availability and low latency
	Scope of features	Delivers a broad API set (e.g., APIs, webhooks) for real-time interaction across multiple channels and formats (JSON, XML, etc.).
	Microservices & scalability	Cloud-based, modular architecture enables independent scaling of components, supporting cost-effective “build once and grow” strategies. This allows seamless expansion in both transaction volume and geographic reach as business needs evolve
	Parametrisation & personalisation	Customisable APIs allow dynamic decision-making based on user-specific parameters (e.g., credit limits, thresholds).
	Security & compliance	End-to-end encryption and compliance with global regulations (e.g., GDPR, AML) ensure robust data protection.
	Versioning & backward compatibility	Version-controlled and backward compatible APIs allows upgrades without disrupting existing operations.
Delivery	Time to market	Enables rapid deployment and integration of new services or features.
	Monitoring & analytics	Real-time monitoring and analytics provide actionable insights, optimize performance, and detect fraud or issues in real time

Fig 10: Key characteristics of state-of-the-art APIS[12]

12) Source: Arkwright analysis.

4.3.4 Regulatory coverage

The fourth layer addresses requirements for both scheme and regulatory licenses (e.g., banking or payment institution licenses). While medium and large banks typically do not require this capability, in the context of embedded finance or white-label issuing, it is essential to offer these services (either directly or through partners) to support card program owners. This capability allows providers to serve a broader range of target customers, with even small and medium-sized banks seeking to benefit from the advantages of scale in this area:

1. **Regulatory license:** grants legal authorization to issue payment cards within a specific jurisdiction; depending on the partnership structure and product type, key compliance areas may include credit scoring, regulatory reporting, GDPR (data protection), AML (anti-money laundering), KYC (know your customer), and equity requirements.

2. **Scheme license:** permits issuance of payment cards and processing of transactions within the framework, network, and brand of a payment scheme (e.g. Visa, Mastercard).

These features are unique and, by addressing the needs of particular customer groups, can provide significant competitive advantages

4.3.5 Innovative features

Based on our analysis of over 45 processing providers and more than 150 client signings, we have identified a wealth of innovative features which emerge from the interplay between the underlying functional layers described above and from a targeted focus on specific customer segments or use cases. In some cases, these features are unique and, by addressing the needs of particular customer groups, can provide significant competitive advantages; the most relevant are outlined in Fig. 11.

Program development and management	Conceptual support for card program planning, product development, sales training, and go-to-market strategies.
No-code / low-code program set-up	Self-service card set-up via drag-and-drop interface. Fully customizable parameters (fees, limits, rules etc.) for rapid deployment of new card programs.
White-label solutions	Customizable mobile and web apps for card issuers. Ensures seamless integration and brand consistency, enhancing user engagement across the customer journey.
Onboarding-as-a-Service	Automated onboarding with streamlined KYC, AML, and credit checks. Integrated with various registries and identity providers.
Credit-scoring-as-a-Service	Real-time credit scoring, regulatory reporting and adjustable risk thresholds and limits to issue revolving cards and other types of consumer finance.
Instant funding	Real-time funding integrated with authorization processing. This event-triggered funding can reduce fraud risks and optimise working capital management
AI-powered customer support	GenAI-powered chatbots for automated, multi-channel customer support, including chargeback handling. Reduces operational costs, improves efficiency, and enhances customer satisfaction
Merchant related solutions	Tailored card solutions for specific verticals, including temporary virtual cards for transaction splitting, mixed baskets, FX, and merchant payouts. Ideal for marketplaces and SME finance.
Public/ government related solutions	Prepaid cards for government payouts, e-ID authentication, and mobility solutions.

Fig 11: Innovative features for card program owners and cardholders[13]

For instance, offering adjustable credit scoring solutions for revolving cards requires both the appropriate licensing and technical capabilities. Another example is instant funding of card accounts at the moment of an authorisation request, which is particularly useful in fraud-prone scenarios or where minimising working capital is critical, such as in B2B solutions. This feature demands real-time capability and seamless integration across multiple transaction processing systems and databases.

These examples demonstrate that combining functionalities from the first four layers—tailored to specific target verticals or use cases—often creates a strong unique selling proposition (USP). **By addressing the needs of specific customer groups through a blend of cutting-edge technology, integrability, and regulatory coverage, these innovations validate our third hypothesis** – and capture the essence of next-generation card processing as we understand it.

Notably, no single provider offers all of the innovative features identified in the analysis, highlighting the uniqueness and differentiation potential of these offerings.

13) Source: Arkwright analysis.

5.0 Conclusion

These capabilities also allow next-generation providers to extend their customer base beyond the traditional scope of card processing

In recent years, providers of next-generation card processing have grown faster than the overall market. Our analysis suggests that this success is not the result of isolated factors such as open APIs, regulatory enablement, or advanced technical features. Instead, it stems from the interplay of these factors, along with the ability to target specific customer segments or address various parts of the issuing value chain. These capabilities also allow next-generation providers to extend their customer base beyond the traditional scope of card processing, offering a wider range of use cases for issuers and card program owners, both in B2C and through embedded finance in B2B(2X) contexts.

Looking ahead, the question of which providers will emerge as market leaders in next-generation card processing remains decidedly open. On the one hand, challengers may continue to grow at an above-market rate and capture substantial market share. On the other, incumbents' efforts to keep pace by overhauling their systems may prove successful, allowing them to leverage their scale and resilient systems in order to maintain their strong market positions. In any case, it is to be expected that the range of applications for card products will increase in the coming years, driven in large part by new processing solutions.

6.0 Case Studies

Seeking to render next-generation card processing more tangible, this chapter presents three case studies, each focusing on a different customer segment and highlighting the background, objectives, challenges, and solutions at play, including applied technology, timeline, and results.

Complied with BPC, these case studies feature a public transportation company, a remittance FinTech, and a traditional bank, illustrating that the effect of next-generation processing concepts extends beyond traditional banks.

6.1 Case 1: Payment network for Uzbekistan's Ministry of Transport

Highlighting how new card processing technology can be implemented beyond financial services, in this case, Uzbekistan's Ministry of Transport and UZCARD partnered with BPC to create a national digital payment network for public transport. To do this, BPC's O-CITY platform was used, enabling contactless payments across various transport modes (see Fig. 12).

By 2022, Uzbekistan's commercial banks had issued 34.2 million payment cards for a population of 35.7 million, and digital payment users grew from 5.4 million in 2017 to over 12 million by 2023. In 2020, the Ministry and BPC launched an NFC-based mobile app for public transport covering 3,000 buses, taxis, and subway stations in Tashkent.

14) Uzbekistan Daily, "Some 49.6 million banking cards issued in Uzbekistan" (2024)
15) Statista Market Insights, "Digital Payments – Uzbekistan" (2024)

Background

The Client

- Uzbekistan's Ministry of Transport
- The ministry appointed the national payment switch, UZCARD to modernise the payment system for public transportation
- For this purpose, the dedicated company ATTO was founded 2020

The Market

- The project started in the capital Tashkent with a population of 2.5m people. Within Uzbekistan, it connects every major city and surrounding areas by train
- After the roll-out in Tashkent, the payment system was extended to 7 additional cities

Key Statistics

- ATTO connected 45 bus operators from the capital and other cities
- 7000+ validators to scan cards installed in the fleet consisting of:
  - 3000+ buses
  - 6 taxi carparks
  - 43 underground stations

Objectives

- Create a nationwide digital payment network for the public transport services
- Implement an automated fare collection system with flexible pricing and multi-party digital settlement
- Generate insights to improve fleet management and increase quality and safety of transport services

Challenges

- The new solution needed to integrate with existing public transport systems, which vary by transport mode
- Low digitization and process transparency due to a historical reliance on cash

Solution

Approach & Technology

- BPC's O-CITY platform offers a solution that allows for open-loop automated fare collection with an account-based ticketing system
- Deployment of an on-premise model on ATTO's existing platform
- Training of employees at start and ongoing support during digital transition phase (e.g. how to create customisable dashboards)

Timeline

- Pilot developed within 2 weeks. Full deployment in Tashkent within 6 months

Results

- Unified digital ticketing experience across all transport modes
- Digital adoption of passengers increased to 52% in 2022
- 222% growth of payments through contactless bank cards within one year (resulting in 50+ million bank card transactions in 2023)
- Instant payments by multiple methods, including closed-loop physical cards, virtual ATTO transport cards, QR-codes, NFC devices, FacePay, wearables etc.
- Third-party apps can deliver real-time API calls for journey tracking, top-ups etc.
- 58% of all passengers now use mobile apps to top-up their transport card

This case highlights not only the potential for digitisation to transform public transport and offer users more convenience but also the ways in which integrated, cross-channel solutions can be implemented for issuing and acquiring. Focused on the mass-transit sector, the platform incorporates mobile solutions and enables cost-efficient micropayments in an emerging market.

16) Source: BPC.

6.2 Case 2: Next-generation card processing platform for remittance Fintech OneFor

Background

The Client

- A Germany-based fintech in the remittance sector, enabling remote workers to send funds within and outside the EU via a digital wallet.
- In 2022, OneFor chose BPC as a strategic partner to provide a modern processing platform.

The Market

- Remittance providers connect remote workers from countries as UK or Germany to receiving parties, e.g. in North Africa

Key Statistics

- Shortly after implementation, daily transactions rose to 7,000+
- 15,000 cards issued immediately after German launch
- 60,000 cards issued immediately after Kosovan launch

Objectives

- Bridge the gap for diaspora communities by offering a simple, accessible, and affordable money transfer app.
- Launch operations in Germany and Kosovo initially, with plans to expand to other European countries.

Challenges

- Balance the simultaneous requirements for rapid transaction speeds, low costs, and a secure experience

Solution

Approach & Technology

- Implemented modules of BPC's SmartVista suite include, among others, ATM management, fraud prevention, switch, and API gateway
- BPC provides Mastercard issuing, incorporating security features like geo-blocking, APIs plug-and-play, and the option to issue cards at convenience
- Launch of a mobile app for account openings and digital KYC

Timeline

- German launch within 4-5 months. Kosovan launch within 2-3 months

Results

- Users can complete card applications within a few minutes in the new app
- Cost-free transactions between OneFor users
- Instantaneous money transfers through SEPA services
- Introduction of junior cards to add versatility, allowing users to create linked accounts for family members

Fig. 13: Summary of OneFor case study[17]

This case illustrates the partnership between BPC and remittance FinTech OneFor, which implemented BPC's SmartVista Suite payment platform (see Fig. 13). The remittance sector plays a vital role for many developing economies and their populations, with approximately 651 billion USD transferred to low- and middle-income countries via remittances in 2022. Operating as a bank identification number (BIN) sponsor, Moorwand supported OneFor in meeting regulatory requirements and facilitated the issuance of Mastercard debit cards.

This study highlights how cutting-edge features such as regulatory enablement (e.g., BIN sponsoring, digital KYC) and API gateways can enable the rapid development and launch of a FinTech on a cost-efficient platform.

17) Source: BPC.

6.3 Case 3: Migration onto a new platform for TPBank

Background

The Client

- Tiên Phong Commercial Joint Stock Bank (TPBank) is a leading Vietnamese bank, aiming to expand its digital capabilities. It offers accounts, loans, and cards to retail and corporate clients
- In 2015/ -16, operations were migrated onto BPC's platform

The Market

- The State Bank of Vietnam advances in attaining a cashless society and the development of the credit card market
- The Vietnamese card market is on the rise, reaching over 150 million cards by March 2024

Key Statistics

- TPBank reached >1 billion USD transaction volume (2023)
- 4.2 million cards issued (2023)
- Roll-out to 300 ATMs and 2,000 POS terminals

Objectives

- Modernise digital banking infrastructure to boost transaction capabilities and improve security
- Drive geographical expansion and win new client segments
- Decrease high transaction costs through reducing cash dependency

Challenges

- Ensure smooth data migration to minimise downtime
- Assure seamless integration with local switch, NAPAS, and open gates towards payment schemes

Solution

Approach & Technology

- "Big Bang" migration approach, allowing TPBank to prepare data in predefined database tables which BPC imported onto its platform
- Utilised modules of BPC's SmartVista suite include, among others, switching, card issuing and management, loyalty, delinquency management, reporting etc.
- Tokenisation enhances security by replacing sensitive card information with a unique identifier

Timeline

- Migration was accomplished in 48 hours, including a downtime of only 6 hours

Results

- In 2023, TPBank reached >12 million customers. It has expanded its presence to all Vietnamese provinces and cities
- 40% decrease of operating costs and 60% reduction of customers' average transaction time at the counter
- Launch of 2-in-1 flash multifunction cards, combining multiple features on the same physical chip, e.g. NFC mobile payments that customers can customise

Fig. 14: Summary of TPBank case study[18]

The third case study presents the migration of Vietnamese TPBank's legacy platform to BPC's SmartVista Suite, along with a thorough update of the bank's service offerings (see Fig. 4). The migration was planned and executed in 2015/16, after which BPC and TPBank maintained close cooperation in order to further develop the bank's card products.

As a result, operating costs were reduced by 40% and new features were introduced, driving high demand. Notably, a 2-in-1 debit and credit card was launched, allowing consumers to choose the source of funds for each transaction.

This case study highlights how next-generation processors can help traditional banks through efficient migrations, enhancing competitiveness in an evolving market.

18) Source: BPC.

About BPC

BPC is a proven industry leader that is shaping the world of transactions with quick, safe and easy payment processing. With a focus on exceptional technology development and customer service, BPC helps financial institutions and businesses to deliver innovative and best-in-class proven solutions that fit with today's consumer lifestyle when banking, shopping, or moving in both urban and rural areas. With more than 450 customers across 120 countries, BPC collaborates with all ecosystem players to deliver services for the digital world. Its core product SmartVista suite comprises cutting-edge banking, commerce, and mobility platforms that enable innovative solutions for digital banking, ATM and switching, payments processing, card, and fraud management, financial inclusion, merchant portals, transport, and smart cities. To find out more about how BPC can help businesses deliver a seamless payments processing experience to consumers, please visit www.bpcbt.com

Short profile	BPC
Key figures	Founded in 1996 · Headquartered in Switzerland · Customer base 450+ · Customers in 120 countries · No. of employees 1,000+
Platform volume	300+ million cards in use · 10+ billion transactions processed per year
Value proposition	**Solutions portfolio** ▪ Payment processing incl. fraud and risk management ▪ Card management, issuing and personalization ▪ E-commerce and marketplace platforms ▪ Mobility and SmartCity solutions ▪ Merchant management and merchant apps **SmartVista Platform** ▪ Open API-based platform with white label solutions, low-code development, cloud-native database and configurable interfaces/ endpoints ▪ Support of various schemes – among others international (6), domestic (20+) and private label (10+) schemes as well as PIN networks (5) ▪ Comprehensive credit solutions incl. profiling and scoring models ▪ Tokenisation options for enhanced security ▪ Instant settlement and instant issuing services
Key differentiators	▪ Combination of acquirer and issuer processing ▪ White-label platform, available in a licensing model ▪ Extensive experience in migration of card and merchant portfolios ▪ Modern technology stack, low-code/no-code ▪ Global experience
Selected customer references	Banca Transilvania · Erste Bank · CredibanCo · ONE FOR · Diners Club International · CAKE · TymeBank · dskbank · Bank of Africa · HSBC · BNI

Fig. 15: Profile of BPC Group

About Arkwright

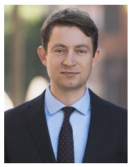
We believe in pragmatism, meticulousness and deep knowledge of the industries in which we operate

Arkwright is a leading management consulting firm specializing in strategic advisory services for private corporations, NGOs, investors, and startups. Amongst a number of different industry-dedicated teams, our Digital, Payments, and Digital Banking practice is one of the most experienced globally, positioning Arkwright as a high-end digital financial services and payments specialist strategy boutique.

We serve a diverse clientele, including major financial institutions, central banks, technology providers, institutional investors, internet marketplaces, and media organizations. Arkwright leads and supports in developing digital strategies and transformations, leveraging our global case knowledge, proprietary methodologies, and the extensive hands-on experience of our consultants and industry experts.

We believe in pragmatism, meticulousness and deep knowledge of the industries in which we operate. At the heart of our mission is the development and implementation of enduring performance improvements and growth strategies, in partnership with our clients.

When we founded Arkwright in 1987, we did so with a strong belief that clients' sustained success requires deeper Collaboration and a different working model than what we experienced at the time. This belief in deep-rooted, longterm partnerships has been central to our approach and growth. Today, Arkwright is an international consultancy with Nordic roots, operating globally from offices in Hamburg, Oslo, Stockholm, and London, and with additional presence in the Middle East and the US.



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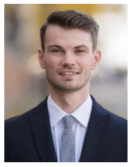

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