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The modern
issuer's playbook:

Renewing your card business

The essential guide to
card system renewal

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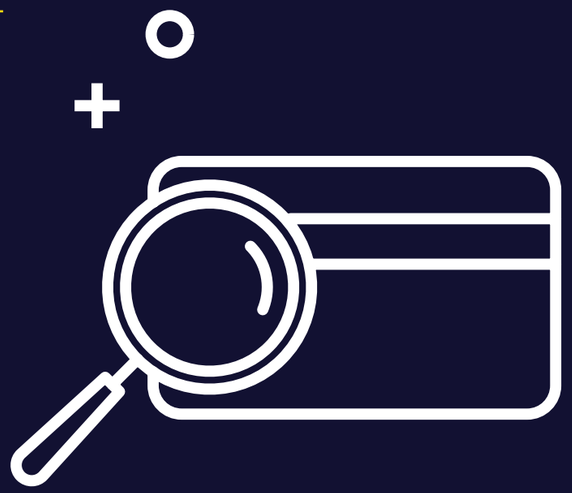

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Why modernise your card processing system?

Faster than ever, all of us are realising that software is eating the world And the same can be said of payments.

As the world embraces digital commerce, new payment forms and players are building a world where money moves seamlessly around the globe.

Where they used to be siloed – confined to bank-to-bank interactions and tightly operated by schemes – payments are now found everywhere; embedded in e-commerce sites, subscription services, mobile apps, and brick-and-mortar stores – wherever customers spend their time online and physically.

Consumers have learned to expect the freedom of paying seamlessly, raising the bar for established and emerging payment providers alike. Fintechs and tech giants have blurred the boundaries of traditional issuing, by redefining what payment methods look like, and what consumers expect from them. Along the way, these challengers have pushed the issuing industry to launch digital payment products and features.

Two things make card payments stand out: transaction data, providing valuable new insights into customer behaviour and entire industries – and the cardholder relationship itself. As a result, we have seen that payments and strategy have become intertwined. Rebundled services where payments are embedded into user journeys – and real-time data provides granular customer insights – have become a key part of strategies as well as future-proof and personalised value propositions.

Even corporations, known as loyal and valuable customers of established issuers, are launching convenient and speedy payment products in order to build direct consumer relationships, offering their users better and more targeted offerings.

The strategic choice of migration

These developments force issuers to keep their card-processing engines finely tuned. Whether local or global, big or small, issuers face a crucial choice over the next few years.

Either they can continue relying on processing systems with approaching sell-by dates, and stick to incremental upgrades. Or they can take the uncharted route, and transform their architecture by making it API-driven, modular and truly scalable.

A growing number of issuers are choosing the latter. And that's where the work really begins.

Once an issuer has decided to modernise their card system, important considerations will unfold. For example, they have to decide between "as-is migration" of an existing system, or a more holistic overhaul of their entire card business. This can result in tough confrontations between departments; visions and priorities; on-premise tech and cloud software. Not to mention the implementation itself.

How will a migration be performed?
Which stakeholders and partners will be assigned to which tasks?

These are strategic choices, with implications that go far beyond cost efficiency. As you will learn in this guide, launching a new generation of payment cards provides great opportunities for unlocking new revenue streams and target audiences. It can entirely change the way your business interacts with end-users. That is, provided you have a strong enough processing engine to meet their needs.

While limiting a migration to, for instance, only card data can be entirely justified, piecemeal upgrades may end up harming your business.
Because the worst form of migration is one where end-customers notice a change or hiccup in the system – but experience no value in return.
The more sustainable path might involve bigger investments, wider buy-in, heavier experimentation – and game-changing opportunities.

Whichever path suits you best – a gradual modernisation of your existing issuing and processing architecture, or a cloud-based migration in one fell swoop – we are here to guide you along.

Regardless of your circumstances, our aim is to help your business turn the complexity of a card system migration into a competitive advantage, a programme that fosters both growth and future competitiveness.

With this guide, we want to help issuers to learn:

- How to design and implement future-proof processing architecture
- How to identify well-suited partners for this
- The business case and new revenue streams a modern processing system can bring
- How a modern payment processing system works
- How issuers globally have sucwcessfully modernised their processing architecture and introduced new card products to the market
- How to keep pace with industry developments and design a card solution that stays relevant in the face of ever-changing consumer needs

1

Basics of payment cards

Card processing has been fuelling global commerce for decades, with few changes to its basic structures. All that is changing now. Traditional industry players are seeing the emergence of new actors with a technology-first approach to processing. These challengers have designed their value propositions to meet growing demands on speed and flexibility – delivered through modular Software as a Service (SaaS) solutions.

The table is set for the next generation of payments. An Application Programming Interface (API)-driven landscape will have profound implications on all actors. And it will bring major benefits to issuers, processors as well as end-users. Let’s have a look at the basic outlines of today’s card processing systems.

The core elements in a card processing system:

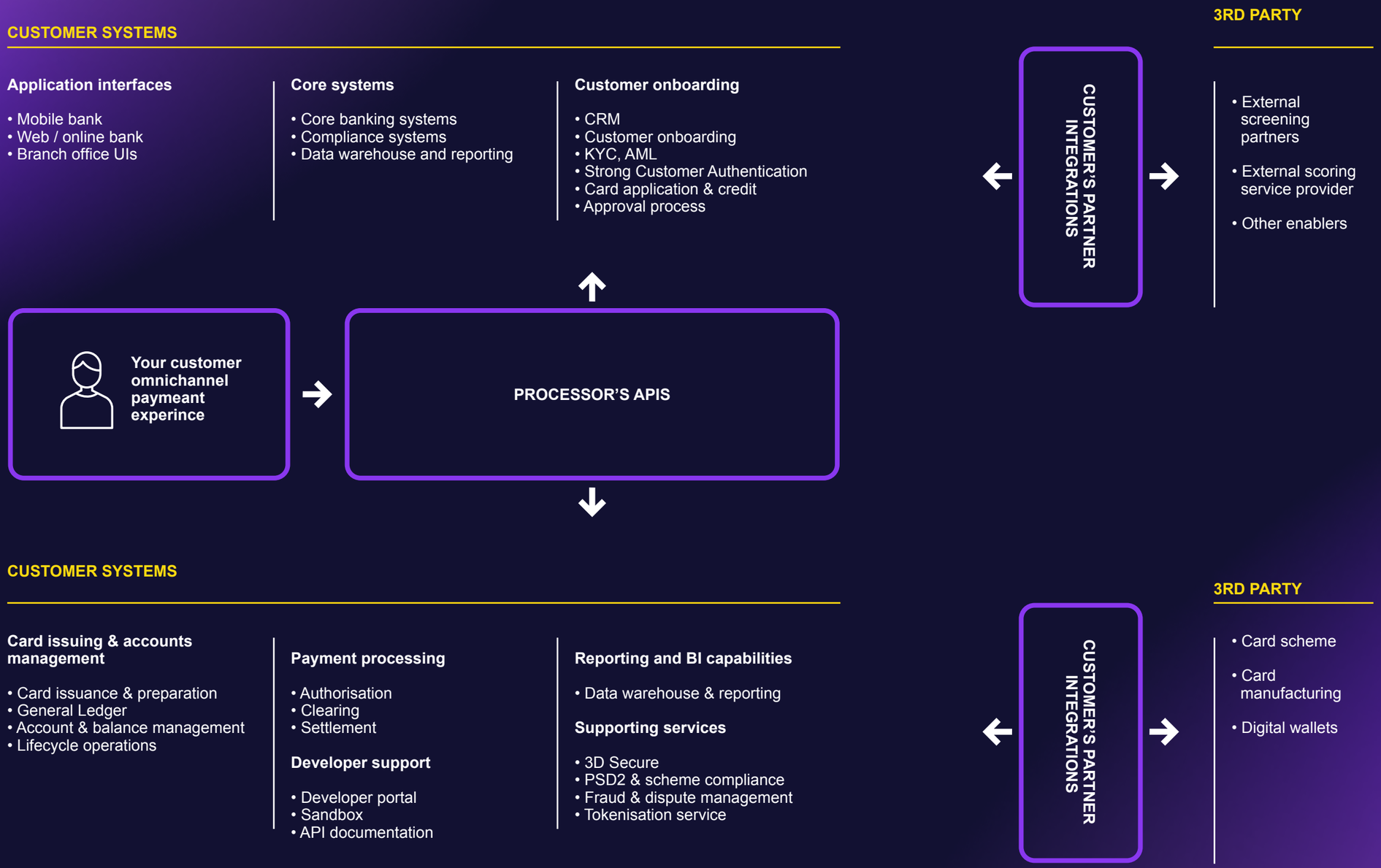
- Offering the card as part of your subscription service
- Offering tiered interest rate or usage fees depending on a customer's payment activity and loyalty
- Offering the card for free as driver for increased customer spend and loyalty
- Collecting card usage fees from cardholder

Essentially, a card processing system is made up of various interlinked components. Each one plays a crucial and often highly specialised role in the card transaction value chain.

The basic "plumbing" of processing remains fairly rigid, controlled by card scheme and compliance actors overseeing industry standards. But as one gets closer to cardholders the diversity of actors and service models increases.

While it's fairly common that issuers handle many activities in-house – from compliance to payment processing itself – the overall trend is one of decoupling. A new generation of providers have stepped in, bundling key processing activities and making them available through APIs.

More concretely, a typical modern processing system provides real-time connections to issuer systems, in addition to external parties like card scheme, digital wallets and card manufacturing. For issuers, these specialised services can form a key part of their payment value chain. Together, these components enable issuers to offer cardholders both physical and online payments.



Integration layers.
Integration layers. Looking at the architecture level, a processing system's core consists of an account and card ledger, or database.This database manages the information of cardholders, their accounts, and their respective balances and transactions – in modern processing systems it can be accessed by the issuer and the required external parties through a real-time integration layer, which is often API based.

Reporting and BI capabilities.
Reporting and BI capabilities. In addition to database and integration layers, today's processing systems typically contain various reporting capabilities. These allow issuers to gain real-time business intelligence, and cardholders to achieve a new level of product visibility.

Developer support.
Developer support. Modern processing systems are designed for developer-friendliness, and this allows issuers or processors to test, deploy and further configure the system in a streamlined way. Robust developer support is beneficial to everyone involved, as it enables processing systems to be developed and continuously adapted to new cardholder demands.

2

Build new business with your card product

The decision to renew a card processing system is one typically initiated by IT.

They are naturally positioned to scope and kick off a migration programme, and set budget constraints in addition to delegating in-house development resources. But the truth is, a migration concerns so much more than IT and technology: it's often a high-stakes project that touches all aspects of an issuing business.

In this chapter, we look at the pure business perspective of migrations. And we provide food for thought on how card system renewal can drive new revenue.

By modernising their card offering, issuers can deliver better payment services that satisfy underserved segments or boost loyalty among existing ones. Simultaneously, they can build a strong business case for renewing their processing systems, one's better suited to a mobile-first world.

The digital payments cake is growing globally, driven by booming e-commerce, a strong cashless trend and new consumer behaviours being fuelled by the pandemic. Established issuers can claim their share of this growth, and take on challengers like neobanks and paytech companies. But that requires boldly investing for the long term, and making fundamental changes to one's processing architecture.

The key is to find alignment between a well-defined set of business building initiatives, and a legacy migration. This will likely boost the chances of garnering support and resources from business departments – as well as keep the focus on end-customer retention and acquisition.

By launching new card products, established issuers can address these business pain points:

Customer churn or limited loyalty in a certain customer segment:

A modern processing system is a key source of customer analytics and personalised customer offerings. Collecting insights from customers and analysing this information in new ways provides the raw material for engaging services. For instance, analytics can enable your business to offer products based on a customer's overall financial situation. Providing targeted new card offerings is a proven way to boost retention and quickly onboard new customers. Card products also provide a seamless touchpoint for customer interaction, and enable your business to launch new features in order to grow engagement and loyalty among end-users.

Targeted offering for a niche customer segment:

Launching a card offering aimed at specific audiences, like SMEs or certain age groups, enables your business to gain relevance in new segments. This can be achieved quickly and cost-effectively through an API-based solution – whereby issuers can add a specialised card product that's run separately from their main processing system. For instance, if an issuer wants to pilot tailored, configurable cards to self-employed entrepreneurs, they're able to get up and running with low upfront investment – with no need to own the required services and software.

Regulatory compliance requirements consuming development bandwidth:

Many traditional issuers see their development resources being consumed by ever increasing regulatory requirements.
The biggest reason? Their architecture consists of various legacy modules where data is spread across disparate systems. The problem can be overcome by leveraging partnerships and premium APIs, instead of committing to costly in-house development or acquisitions. Established issuers tend to have a large user base, which they can monetise in new by working with the right type of partner. This circumvents development bottlenecks and enables you to reach the market faster with new card and payment revenues – while having a continued focus on regulatory compliance.

Attract new customers and match the competition in digital payments:

APIs enable established issuers to introduce digital payments products quickly and cost-effectively – while circumventing their proprietary systems. Offering compatibility to relevant products with the help of a modular architecture paves the way for better payment innovation and larger volumes.

Take the case of implementing an in-demand digital wallet capability, like Apple Pay or virtual payment cards. Normally, this would be a costly and time-consuming project to complete on top of legacy architecture. By leveraging modern service partners, however, the implementation becomes faster and maintenance smoother. This way, the crucial tokenisation capability required for digital wallets will be run outside of the core processing system (including in-app provisioning with a dedicated provider)

Optimise operating expenses:

With a modern processing system, it has become easier than ever to reduce costs related to service delivery and maintenance. The reason is simple: cloud-based card payments provide inherent cost-based benefits and better economies of scale.

For example:

- **Better fee structures.**
  Developing new, more flexible fee structures can enable issuers to introduce more versatile card products with better profitability.

- **Smoother PIN Management.**
  By relying on a "view PIN" capability offered by many modern processors, you can reduce PIN management costs like printing and mailing.

- **Reduced service desk load.**
  Various self-service features offered to cardholders with a pleasant UX results in a lighter service desk load – leading to a better cardholder experience.

- **Lower maintenance cost.**
  Through the built-in cost benefit of public cloud architecture, there's no need to maintain extra capacity required for eventual peak loads.

- **Streamlined infrastructure.**
  For example, providing the same multi-currency card solution for multiple markets instead of maintaining several market specific on-premise solutions.

Case story:

Apple Pay compatibility in three months

Description:
Push provisioning for digital wallets implemented outside core processing system

Cards portfolio:
Cards portfolio: 200,000+

Project type:
New card product outside legacy system

When looking at in-demand payment features, digital wallets top the charts. But building one with legacy technology is far from a seamless proposition. So this regional bank charged their cloud-based provider with a quick Apple Pay launch, circumventing legacy systems.

Targeting increased transaction volumes and customer satisfaction, the medium-sized bank wanted to enable an Apple Pay capability for their card base. But implementing the digital wallet into their core processing system was simply considered unfeasible, due to a lengthy project timeline and high costs.

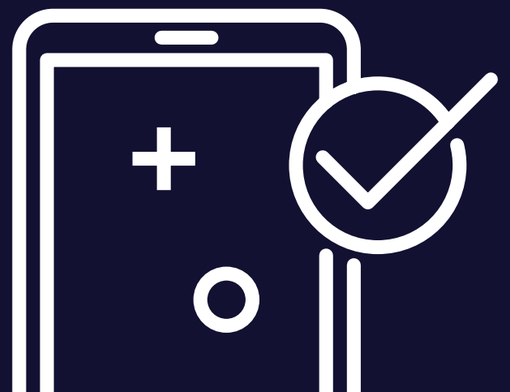
The bank decided to explore an in-app provisioning solution, allowing users to add cards to their digital wallet directly in their mobile application. This way, the bank didn't need to integrate the mobile card application to their core processing system. Choosing instead to work with a full-service partner specialising in push provisioning, the bank could avoid integrating towards card scheme tokenisation services, or performing required certifications –

as the partner managed these things on the issuer's behalf. With this setup, the bank issuer could simply encrypt data elements like PAN, and relay these to the mobile wallet app. This would initiate a provisioning request to the wallet provider. After schemes were validated and cardholders accepted issuer terms, the tokenized Apple Pay card would be ready for use in seconds.

With this setup, the bank issuer could simply encrypt data elements like PAN, and relay these to the mobile wallet app. This would initiate a provisioning request to the wallet provider. After schemes were validated and cardholders accepted issuer terms, the tokenized Apple Pay card would be ready for use in seconds.

The solution proved smart on many levels. First and foremost, the bank could achieve fast time-to-market thanks to low involvement of the legacy processing system. This naturally led to higher transaction volumes and a cutting-edge user experience.

> **"The solution proved smart on many levels First and foremost, the bank could achieve fast time-to-market thanks to low involvement of the legacy processing system."**



Most of the provisioning requests could proceed inside the digital wallet app. Secondly, the solution leveraged the bank issuer's existing mobile banking authentication and identity and verification (ID&V) process ensuring that most of the provisioning requests could proceed inside the digital wallet app, entirely without ID&V step-up.

This in turn resulted in reduced call center ID&V volumes and – since most requests could be handled immediately – lower abandonment rates.

Key learings:

- Launching a new card product becomes possible through a partner that can handle the complex orchestration of scheme integrations and required certifications, while avoiding the need to immediately migrate the entire core processing system.
- Issuing tokenisation cards can be done with a two-month lead time, provided that the processing provider can fulfil necessary requirements related to card base coverage, etc.
- It's important to consider whether proprietary mobile applications are actually needed when implementing digital wallet products. A proprietary app will not be needed to provision (tokenize) a card – unless the card is fully virtual and no plastic exists.

3

Anatomy of cloud-based processing systems and card APIs

Why process payments in the cloud? Payment processing is changing rapidly.

Payment processing is changing rapidly. The industry's high pace of change has consequently put new requirements on service providers, who depend on systems that support scalable business models and can be easily adapted in terms of form, function and size. These systems also need to be cost-effective, secure and compliant with regulations – and that's where cloud-based architecture enters the picture.

In essence, cloud providers enable your business to leverage an extremely well-developed and operationally efficient physical processing infrastructure. This gives your business the ability to scale both in terms of processing capacity and geographic reach, without any big in-house efforts.

Several factors make cloud technology ideally suited for modern business needs. Building your issuing system on cloud architecture, you can scale fast and adapt to a mobile-first payment offering. Additionally, by having unlimited storage capacity and resources at your fingertips, you're able to quickly reach the market. And, crucially, you can achieve better availability and faster Disaster Recovery.

Since public cloud infrastructure is constantly being maintained and developed, it results in effective and reliable security mechanisms. Seeing that they cater to myriad industries, cloud providers are required to be fully compliant and certified with FSAs, PCI standards and other common financial industry certifications.

The architecture of a modern processing system. While each cloud processing system available in the industry is designed differently, there are some commonalities among them.

Core ledger:
The core ledger is the center of the system; the database that manages the accounts, balances, cards, cardholders and transactions. All new accounts, cards and cardholders are recorded and all changes done to them during their lifecycle are logged. Each financial transaction creates an entry that enables keeping a flawless audit trail. The accumulated amount of transactions are gathered and processed as different types of balances (non-invoiced, invoiced, interest accruing, overdue, overlimit).

API Layer:
The APIs connect to the core ledger and enable various stakeholders to remotely configure card management processes at any given time. This becomes possible thanks to all data being kept accessible and up-to-date throughout the entire issuing system. For instance, when an authorised API user updates an account balance, it will be shown immediately in the core ledger system.

The processing system is typically connected to at least following issuer systems:

- Mobile and/or web applications for cardholders and customer support (real-time API integrations)
- Customer onboarding and card application process CRM (real-time API integrations vs. data warehouse dumps, always a 24-hour lead time)
- Outward notifications (push notifications via webhooks vs. earlier pull/query-based pull data)
- Issuer specific strong customer authentication services, for 3D Secure
- Credit line (can also be provided by an external partner and added afterwards to an existing prepaid card, for example)
- Loyalty programme partners (and other services that augment the issuer’s payment solution)

With APIs, data will remain consistent and updated regardless if it's viewed in a mobile app or a web-based interface. By contrast, in a traditional card management system data transfer operations are based on batch files, easily creating inconsistencies between various interfaces and components.

With real-time API integrations between all systems and user interfaces, you can avoid any inconsistencies that would be caused by changes done in one system not being immediately reflected in another.

User management and access control:
Access to the service should ideally be assigned via role-based user management, enabling issuers to provide the right type of access to the right users: for instance, admin and back office roles will have a higher data access tier than cardholders. APIs combined with these modern access protocols make access management granular, and restrict access to sensitive data.

Integrations:
In addition to APIs that enable you to operate a card processing system on-demand and in real time, any authorised third-party system can be integrated to it. The processing system needs to be able to adapt to a variety of third party integration requirements, for instance the pre-specified card scheme integration formats and differing integration protocols of card manufacturers across geographical markets. The technological basis and design underpinning modern processing systems makes it possible to adapt to these requirements efficiently.

Integrations of a card processing system typically include:

- Card scheme and BIN sponsor integrations*
- Integrations to closed loop networks
- Card manufacturing (file-based integration)
- Printing house (for credit invoices)
- Know Your Customer (KYC) / Know Your Business (KYB) service providers

* Card scheme and BIN sponsor integrations are implemented in the same way for both legacy and modern processing systems. But a modern processing service needs to also support card schemes' current specifications; which include payment transaction processing as well as Apple and Google Pay support processes and 3D Secure processing. In traditional setups, the scheme integration relies on a Primary and Standby setup, whereas a modern system uses active-active principles which make scheme-related resource failovers seamless for users.

From the issuer's point of view, a modern processing system should fulfil a number of technical functionalities:

Designed for security:
Security needs to be a top priority, and never a retrofit solution. No single points of failure: Each system component should exist in multiple replaceable instances, and the mechanisms for distributing tasks across components should be automatic.

Horizontal scaling:
As transaction volumes grow, the system should support increased demand – this is achieved by adding more processing nodes.

Cloud-friendly technology choices:
Since cloud deployment underpins a real-time payment context, a modern processing system should ideally be adaptable to cloud infrastructure and its core properties – including common, off-the-shelf operating systems, scriptable software installations and web-based internal communication mechanisms.

A solid processing system can rely on a variety of technical components, but the customer-facing interfaces should be well designed, consistent and cater to relevant users. The APIs should empower developers as well as a wide range of cardholder use cases.

Technology example: Card management API

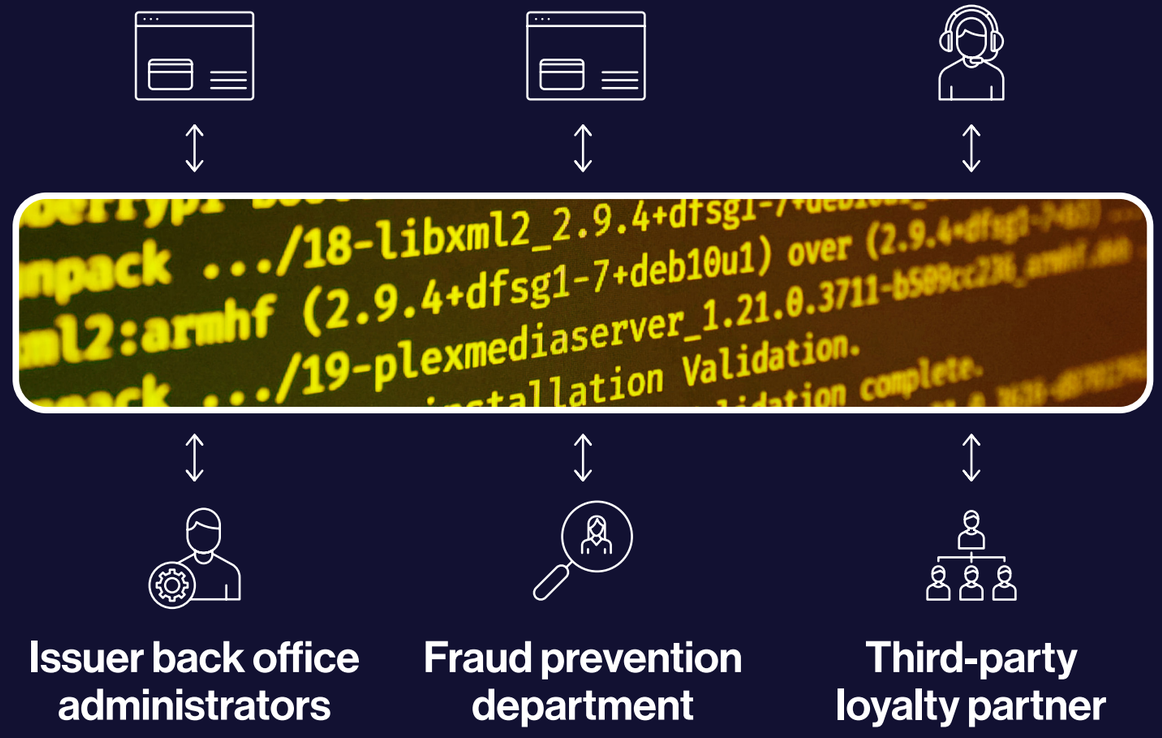
API-based processing systems have inherent advantages over traditional ones relying on legacy technology. APIs are basically messengers of data, and allow organisations to seamlessly access, manage and configure card issuing-related processes – in real time and with easy developer access.

Card management APIs are essential when building a modern and engaging cardholder experience. The information they carry makes it possible to launch products like virtual cards, and to continuously evolve their various features in a personalised way – often based on user behaviour insights.

From the issuer's perspective, APIs can be used by various stakeholders to run business processes in real time – and to do it simultaneously and independently from each other. As an example, by calling an API, a stakeholder can view and change one or several cards connected to an account, the transactions connected to a certain card, or the cardholders stored in the system.

On the next page, we present the functionalities of a card management API, which provides both "read" and "write" access to card data in the card processing system.

Card management API



The cardholder can access card information in real time in a mobile or web card application, which serves as the card's online interface. This cardholder UI is connected to the same processor API as the front office, but with a different scope of commands available:

- Card scheme and BIN sponsor integrations*
- Integrations to closed loop networks
- Card manufacturing (file-based integration)
- Printing house (for credit invoices)

Furthermore, cardholders can be granted varying authority levels. In addition to a basic user access, issuers could provide certain cardholders with extended access to advanced card management operations through an extended user interface, like a web application:

- Main cardholder can check the balance and modify cardholder access to a family account
- Main cardholder can check the balance and modify cardholder access to a family account

A dedicated support user interface is implemented and accessed via the processor's API

Front office administrators in **customer call centers** can view card data in their customer support and card management portal.
A dedicated support user interface is implemented and accessed via the processor's API. The support representative can run following real-time operations with the API:

- View or change card properties and card details
- Get real-time information about purchases and transactions
- Block or unblock cards
- Change spending limits according to cardholder request

Issuer back office administrators can view and fetch card data in their back office card management portal. The back office representative can conduct the following real-time operations with the API:

- Posting fees to the card ad-hoc (for corrections) or automatically
- Modifying product specific setups like usage limits or fee/interest levels

An internal fraud prevention department or an external fraud monitoring partner can use the same API in their operations:

- Retrieve card transactions to detect fraud and conduct post-processing
- Look up a certain transaction for further analysis

In addition, a third-party loyalty partner could be connected and call the same card management API from their portal:

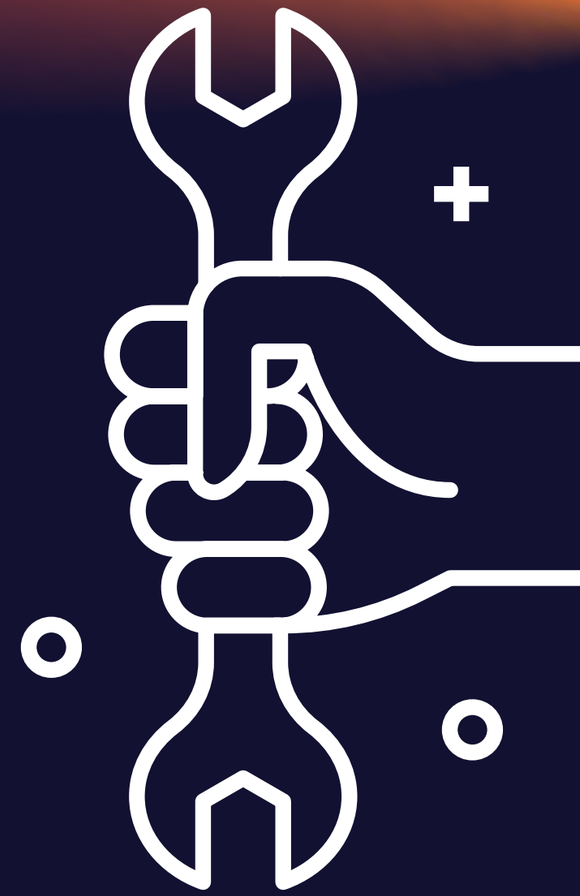
- Enabling users to freeze cards
- Geo-blocking a card in a specified geographic area
- Enabling or disabling e-commerce purchases
- Enabling the cardholder to view their PIN code
- All of these features can be made available through a clean, robust API

> **"The issuer can design the logic of access control and determine, for instance, which specific operations the cardholder should be able to access in a self-service context."**

Why the developer experience matters

To a growing extent, established issuers are realising the significance of the developer experience; making it easy for developers to access core systems. Developers experience some concrete differences when developing against modern APIs versus legacy systems:

- Modern systems complying with industry standards (like RESTful web services with industry-standard access control) usually have up-to-date API documentation and sandboxes available for testing. In legacy and on-premise systems, code changes might not be reflected in the API documentation, while test and production environments are more likely to differ from each other. Working with legacy systems, developers are also more likely to encounter obscure protocols and data formats, which are both time-consuming and cumbersome.
- In the case of modern cloud-based systems, developers can usually access sandboxes seamlessly. They don't have to apply for permissions with long approval cycles in order to access test data, which is the case when integrating with legacy and on-premise systems.
- For a large issuer, making at least some configurations and customisations on top of a third-party processing system is required. The big difference between legacy and modern processing systems concerns the cost of development resources – measured both in actual hours spent and developer productivity. Modern systems have better documentation and are built to up-to-date standards, which dramatically reduces your needs to invest scarce development resources.
- Maintaining on-premise systems is often cumbersome when compared to modern cloud-based systems. Working with legacy systems, developers will not be able to use their tools of choice, and have to spend time figuring out often suboptimal workarounds.



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Checklist for finding the right processor partner

To get the right kind of processing system, you need the right partner.

Today's cloud-based processors and their turnkey delivery models tend to offer better solution transparency pre-launch, which makes it easier to test card services in API sandboxes and early-stage demos. From the buyer's point of view, this will dramatically shorten the lead time of screening, evaluating and choosing a card service partner.

When evaluating partners, issuing clients' RFX processes are typically oriented around solution reliability, compatibility across geographies, and the extent to which partners' processing architecture can be scaled and used modularly. Issuers are also wise to compare how these factors stack up against migration programme adopted by legacy peers, or digital native implementations involving fintech companies.

The exciting news is that a new partner ecosystem has sprung up in the issuer-processor market, providing the capabilities necessary to take your payment offering in new, digitally native directions – and serve a broader range of segments.

> "Make sure your business objectives are aligned with your criteria for evaluating partners."

Whether you're looking to find a processor through a fully-fledged procurement process, or are more spontaneous about it, make sure your business objectives are aligned with your criteria for evaluating partners. Rigorously analyse and prioritise the core requirements on your desired processing system, so you can screen for partners who are able to meet these cost-effectively – today and in the future.

Finding the ideal partner mix for your business

With this being said, one should be open-minded about exploring new alternatives when choosing a partner. This enables you to design a modular processing architecture suited for today's needs, rather than automatically opt for a traditional, monolithic solution – with high fixed costs and oftentimes outdated technology standards.

As you look for a competitive edge, emerging players – less reliant on legacy tech and more plugged in to today's business models – can enable faster speed of innovation than others. Younger players funded by credible venture capitalists may be better equipped for the future than established ones, who are challenged by new business models and weighed down by big modernisation projects.

However, one single partner is not always enough for traditional issuers: as part of their card system renewal, they often need to fulfil many requirements that go beyond card processing – everything from specified UI and core banking system capabilities to custom integrations. For some issuers, it might simply be too time-consuming even unrealistic to find a perfect one-stop-shop solution that meets all their payments-related requirements.

> "A winning strategy might involve working with a mix of partners"

Therefore, a winning strategy might involve working with a mix of partners: modern ones in combination with strong specialist vendors. This could mean sourcing a state-of-the-art partner for payment processing, and other partners for adjacent systems. Such a setup lays the foundation for high-quality implementation while achieving the flexibility needed in today's fast-moving banking ecosystem.

In conclusion, the key is to find providers who can match your future ambitions, rather than merely replicate an existing solution. Future-oriented partners will enable sustainable growth by co-creating a better customer experience, faster and more reliable transaction processing, and easier process flows.

Although every selection process is unique, there are crucial factors that any future-oriented issuer should focus on when modernising their system. Following our checklists, your business n boost its chances of making the right type of partnership decision.

What performance level does the partner offer

Successful card issuing and processing ultimately comes down to strong solution implementation, in combination with solid maintenance. It's crucial to have confidence in your partner and their competence in delivering a seamless setup, with highly accessible interfaces to relevant stakeholders. These factors lay the foundation for a flexible and secure payment card offering.

In today's environment, modern processors hardly differentiate themselves with SLA and uptime. Issuers should expect 99,99%+ uptime as industry standard. That said, your prospective partners need to demonstrate their basic technical capabilities while providing evidence of their performance level with large volumes, in action. They should also be excelling at all regulatory and compliance aspects.

> "In today's environment, modern processors hardly differentiate themselves with SLA and uptime"

Consider at least these operations-related capabilities:

- The partner's experience in migrating and processing large card portfolios, as well as concrete evidence of handling large data volumes
- The speed of implementation of a processing system and cardholder onboarding
- Committed level of key system performance indicators, for instance average API response times, incident handling, and reliability during potential usage peaks

How well do the solution scope and features fit my business needs.

Renewing a card system can be like changing an engine, or at least swapping major parts of an existing one. First you look under the hood, and figure out how the various parts work together, in order to decide which ones need replacing. Only then can you determine which type of upgrade will give your engine the best effect.

So, start out by taking a bird's eye perspective of your entire payment journey. What's the ideal target state, and what type of solution scope can help in achieving that? Try to combine current and envisioned business needs, so as to ensure that your new processing system can support you in the long-term.

In the partner evaluation phase, it's advisable to define, and repeatedly challenge, your list of must-have business and technical requirements for the processing system. But, at the same time, embrace an agile mindset and seek out a partner who can deliver enough flexibility: the solution you are opting for today might need big changes in a few years. The partner's job is to change with you.

> "The solution you are opting for today might need big changes in a few years. The partner's job is to change with you."

Cardholder facing features:
What payment features will your cardholders be able to access? What are the limitations of the partner's system?

User interfaces for cardholders and the issuer itself:
consider where you need a GUI and where the processing system should be integrated into existing systems via APIs only

API coverage:
what CMS functionalities are offered through APIs? What limitations are there?

Data and analytics:
evaluate the scope and future configurability of the available data extracts, as you will need real-time data for your BI and future applications

Integrations to core systems like core banking, CRM or customer ledger:
these integrations typically take a lot of time to specify and design

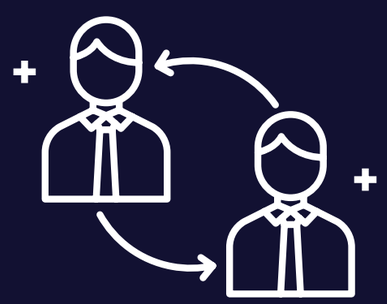
Integrations to core systems like CRM, ERP, service desk and ticketing systems, core banking:
most issuers will receive sufficient levels of configurability through industry standard integrations

How configurable is the solution for future needs?

In the past decade, payment cards have gone from a commodity to being vehicles of future-oriented financial services. As the mobile ecosystem matures, consumers are increasingly demanding card payment features that let them budget and analyse their consumption, or link their buying to other aspects of their lives – from carbon footprint tracking to travel-friendly virtual cards.

To avoid the pitfalls of launching generic card products, or missing relevant market opportunities, you should be looking for processing solutions that let you configure your card product both rapidly and efficiently. It's virtually impossible to predict what features will be needed even in a few years.

> "The solution you are opting for today might need big changes in a few years. The partner's job is to change with you."



> "A good way to test a partner's flexibility is to focus on a limited set of potential key activities."

When compared to fintech companies, established issuers are often considerably slower in introducing new user-facing features (when they actually do). But this does not have to be the case, if the issuer has selected a partner to support their future business objectives with the right capabilities.

To provide a concrete example, a large issuer was able to introduce Apple Pay for their card base in just three months. This happened by teaming up with a cloud-based partner who orchestrated a tokenisation project – without touching the issuer's legacy tech.

Retention of existing customers:
the foundation in processing system selection is safeguarding the continuity and engagement of your customer base. Your user base will demand a certain performance level, a better user experience and continuous introduction of new features. Migrating to a new processor should empower you to serve your customers better and faster.

New use cases:
create a future wishlist in order of priority and test your partner's flexibility with feature and product teasers.

Capabilities related to transaction data:
when considering a processing system, real-time access to transaction data and support for automatic categorisation are a must for any issuer. It's also important that you obtain granular access to various transaction authorisations. With it, you can personalise cards in terms of limiting their use to certain merchants or merchant categories, for instance, or enable transactions at specified merchants but only during a given period of time.

Flexibility of onboarding:
test the ease of integration into the partner's system and evaluate the availability of sandboxes and test environments.

Evaluate the piloting opportunities:
Conducting Proof of Concepts (POC) on new features, user groups and geographical markets in the processor's technical environment should be fast and low-effort.

- POCs can be valuable for providing convincing business evidence to top leadership and the board, and to grow commitment within the organisation.

Validate the partner's development roadmap:
Is the partner able to present a feature roadmap that will fulfill your future product needs – in terms of core payments features, as well as compliance, analytics and value-add services?

Services provided by the partner?

When identifying a suitable partner for your card solution, it's important to be clear on which elements of issuing and processing you can, and prefer to, manage in-house. Having your solution scope clearly defined makes it much easier to engage productively with the right partners.

While some partners are geared to only processing card transactions for you, others might be able to deliver more comprehensive development projects, and even take over your back office support. Since SaaS-based processing can be implemented modularly, the options are virtually endless. You could, for instance, outsource card processing and feature development while keeping fraud monitoring in-house.

> "The ideal fit depends largely on finding alignment with your processor partner."

The ideal fit depends largely on finding alignment with your processor partner, with a focus on business drivers and technical capabilities. This will result in the best possible quality of implementation.

Another factor to consider is the impact on your organisation. When moving, for instance, from an in-house solution to a multitenant cloud service, your business will likely experience a major operational overhaul with regards to issuing and processing cards. With a new partner and processing system in place, some roles in your organisation could actually become redundant, for better or worse.

So when evaluating partner alternatives, make sure to factor in organisational challenges and opportunities. For example, if your new processor partner takes over compliance processes previously handled in-house, you might explore the options to refocus your experts to new business development.

> “When evaluationg partner alternatives, make sure to factor in organisational challenges and opportunities.”

Make sure to evaluate your partners’ service portfolio against the following criteria:

PROCESSING SERVICE SCOPE:

- Validate what the processor will handle for you,for instance in terms of authorisation decisioning, communication between card networks, and parsing data. The processor partner should have the expertise and commitment required to take end-to-end ownership.
- The card schemes, rules, processes and solutions are vast and complex and require a huge amount of knowledge and time to digest – something that the processor should take responsibility for.
- Additionally, cardholder data underpins a huge business opportunity, so the processor should be able to support this with robust data enrichment capabilities.

Service desk scope:
define your needs in terms of first and second lines of card system support, in addition to services like fraud monitoring and chargeback handling.

Available self-service features:
If the processor offers solid self-service capabilities, it will often help speed up implementation, helping your developers to build, test and simplify your system architecture (avoiding the need to build your own backend layers). Also gauge what your partner can offer in terms of “view“ and “change” features related to card configurations.

Customer relationship management:
evaluate the customer care, communication and reporting that is promised between implementation and go-live. A successful implementation depends on high levels of expertise, engagement and insight offered throughout the project.

Partnership and strategic account management: Evaluate the quality of relationship management and the level of commitment of your prospective processor. This will reflect their willingness to jump on your future business needs.

Way of working with the partner:
It can be rather daunting to run a card processing system migration with a rigid IT provider. The amount of meetings and time spent in implementation has real costs for the customer (salaries of project resources, the opportunity cost of putting other development initiatives on hold while doing the issuing project, the missed savings and/or revenues when waiting for the implementation to be completed). Thus the issuer should carefully evaluate the speed, flexibility and accessibility of the partner organisation, both directly and through benchmarking their earlier implementations with reference customers.

How does the partner’s pricing model meet my current and future needs?

Pricing, of course, is pivotal when choosing partners for an issuing system upgrade. Especially if your roadmap contains geographical and product expansions, the long-term cost implications could be huge. When navigating market options, it’s thus important to have a solid grip on one’s future business needs. It’s evident, for instance, that the pandemic has prompted many issuers to redouble their focus on digitalisation – which could mean that digital business models drive your pricing strategy.

Once you have shortlisted suitable partner candidates, it’s time to evaluate their pricing models. A good rule of thumb is to aim for simplicity: in an environment where your customer patterns – and consequently account and transaction volumes – may be both volatile and difficult to predict, a simple and predictable pricing model will help you define a solid, credible business case for your card solution.

AS SOON AS PRICING ENTERS THE PICTURE, IT’S ALSO GOOD TO CONSIDER THINGS LIKE:

- Which features should be included in the solution scope?
- Which ones are you willing to actually pay for?
- Which features could be added at a later stage, when you gain more feedback from users?

TYPICALLY, MODERN PROCESSOR PRICING MODELS HAVE VARIOUS COMPONENTS:

- Implementation fees
- Account or card based fees
- Transaction based fees
- Integration costs to your specific systems
- Business advisory and solution design
- Programme management
- Additional features
- Additional countries and currencies
- Scheme and other third-party pass-through fees

Things to consider:

To make sure that you can build a profitable and scalable card business, and that it can rest on an accurate business case, have the following caveats in mind:

- Avoid building in “sunk costs” of earlier investments into a legacy processing system, but aim instead to calculate from today onwards. This way, you can realistically compare the cost of maintaining a legacy system against the investment of implementing a turnkey SaaS system.
- Who carries the risk: are there built-in minimum volume trenches, commitments to certain service packages or time periods? It is crucial to define the contract lifetime value accurately.
- To complete a transaction, will you be charged a fee per a business transaction or per each API call? Is the business case still good for you as an issuer once the volumes ramp up?
- How are customer support and other business processes priced?
- How flexible is the partner’s pricing model for scope changes: adding new markets along the way, or in-housing parts of the initial solution scope?
- What is the pricing logic when adding new features and integrations in the future?

5

Succeeding in a card migration project

Card base migrations are big coordination efforts. Between stakeholder management, fulfilling technical requirements and executing an integration, the myriad things to keep track of can become dizzying. This complexity requires you to plan your approach carefully, regardless if you choose to migrate in-house or rely extensively on specialist partners (in most cases, a handful of partners will be involved).

One should also note that, as much as it's a technical and compliance effort, migrations are equally business and marketing opportunities. While there are many ways to prepare, a top priority should be to involve partners with in-depth knowledge both of the business and technology side of things.

Thanks to technological advances and automated testing, migrations from one card processing system to another have become easier and faster than before. However, the overall migration effort should never be underestimated: success depends on true commitment. By finding a capable processor partner, you can support the technical migration from planning to implementation, while achieving an optimal result for your business.

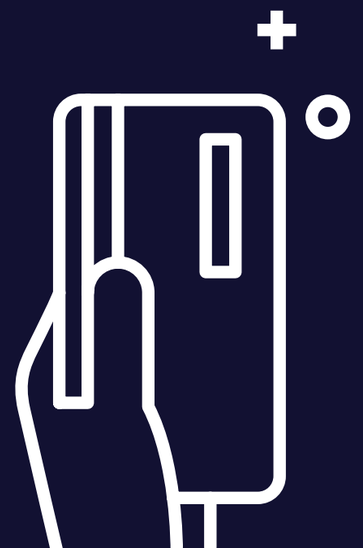
When choosing a suitable migration approach,

When choosing a suitable migration approach, weigh each of the following criteria against the expected business impact and pros/cons of:

- Your card offering's current status and future plans – is there a definite migration deadline?
- Timing of the migration – in most migrations, the end-user will notice a change in the service. So make sure the timing of the migration and related communication is carefully planned in advance.
- Are there old products that could be sunsetted? Map all existing products in your portfolio and consider the overall volumes as well as their individual value-add. Then consider if all products should be migrated, or if only some customers should be offered new updated products.
- Do you want to migrate without the end-users ever noticing, or would reissuing be an alternative? Are there other end-user impact aspects to consider?
- What data is important/ necessary to migrate?
- This affects the scope of a migration. It's good to note that some processors are unable to conduct migrations due to differing client profiles, billing schedules, etc.

"Do you want to migrate without the end-users ever noticing, or would reissuing be an alternative?"

In this chapter, we outline the typical phases and best practices of a modern card migration project – and share learnings from several global migration projects.



Case story

Test and succeed: 21st century data migration

Description:
High-volume data migration

Cards portfolio:
Cards portfolio: 5,000,000+

Project type:
Data migration

Data migrations can be stressful, to say the least. Literally hundreds of things have to go right between design and launch – and if they don't, your payments business could suffer the consequences. Fortunately migration problems can be avoided by leveraging technology, teamwork – and tireless testing. This issuer provides a textbook example.

> "Once all business processes requiring intensive performance were live, this capacity could be fine-tuned for cost efficiency."

The customer issued and maintained a large card portfolio through a legacy processing system, and had prepared a business case to modernise their architecture. The company tasked a cloud-based provider with migrating its data to an up-to-date processing system. The migration had to be done with minimum impact to cardholders. Therefore, re-carding was not considered a feasible option.

Due to users' buying patterns, the customer experienced regular payment processing peaks. This made it pivotal to test and verify the new system's ability to perform with peak loads – and cloud infrastructure provided a suitable vehicle for extensive rehearsals.

> "The migration had to be done with minimum impact to cardholders."

Therefore, the cloud-based service provider set up a number of testing environments, ensuring that the new issuing system's performance could be rigorously tested and optimised ahead of launch. A series of test runs conducted on live migrated data helped validate the right performance allocations, which would secure the required level of performance for the entire infrastructure.

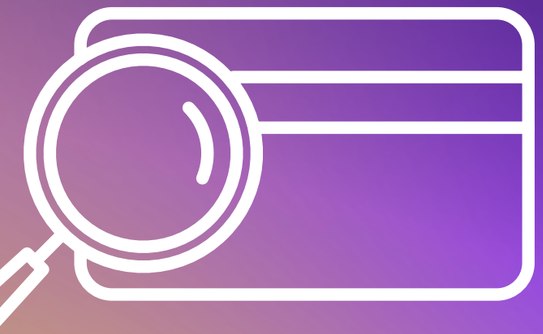
The cloud infrastructure enabled computing resources like CPU, RAM and storage speeds to be scaled easily. Being able to quickly scale up computing power set the stage for successful migration rehearsals, ensuring that business data could be moved seamlessly. Once the actual migration was complete, the extra test resources were decommissioned and, consequently, the costs related to them eliminated.

The live migration was a success with minimal interruption to cardholders. During and shortly after implementation, the service provider reserved extra computing capacity to create a margin of safety. Once all business processes requiring intensive performance were live, this capacity could be fine-tuned for cost efficiency.

Comparing migration approaches

There are many ways to execute a migration. Whether or not a specific approach suits your business depends both on operational needs and technological limitations, including your ability to extract cardholder data from various sources. These factors determine not just the technological setup you will need to execute a successful migration, but will also impact the end-user experience.

In the next pages we describe the typical approaches for migration. Based on the following alternatives, you can create suitable combinations that meet your business objectives. And you can highlight various product-related opportunities that can be explored using new or existing architecture.



A.

Reissuing:

A reissuing (or “recarding”) approach means that existing cards and account data are not migrated; instead end-users will receive new cards. The cardholder receives a new card (physical or virtual) with new identifier data (card number, expiry date, PIN, CVC). The old card usually expires when the new one is activated. As a new account and card is created, the issuer can feed these with the same information as the old ones, in terms of credit limit, invoicing terms and usage limiters.

Reissuing can be done in two different scopes:

1. **Migration of balance and new card.**
   End customers receive a new card, but with the current balance migrated.

2. **New card and new credit.**
   Requires no collaboration with existing processing systems. This means the customer will temporarily have two different cards, and two different credits.

Choosing the suitable scope depends on various factors, including the desired end-user experience, risk strategy, possibilities to obtain data in comparable form as required by the target system, schedule and overall migration strategy.

Advantages of reissuing

- Migration project scope is smaller and the schedule is faster, as card data migration is not required
- Easier to mitigate risk through a phased approach
- Issuer can independently advance at their own pace without dependencies of other parties

Disadvantages of reissuing

- Need to operate with two processors during an intermediary period
- End-user impact, as they need to start using new cards

B.

Data migration of existing cards:

In this type of migration, the card and account lifecycle can resume in a new system after existing cards and accounts have been fully migrated. The actual card (whether physical or virtual) and its identifier data (card number, expiry date, PIN, CVC) remain the same.

This approach is basically an end-to-end migration, and involves minimal impact on end-users. Cardholders can simply keep using their existing cards as their balance and transactions are being migrated. Regarding the implementation itself, tight cooperation between all relevant parties should be prioritised. The migration data needs to be retrieved and moved correctly, securely and efficiently so as to ensure that the card and account lifecycle can continue without interruption.

Advantages of data migration

- Limited or no visible impact for existing customers
- Clean cut migration – avoid period of operating with two processors

Disadvantages of data migration

- The data migration requires extensive testing.
- The schedule of a data migration project is usually longer than if reissuing.
- Cut off from one processor to another requires coordination between multiple parties.

Case story

Phasing out a legacy system with a flexible issuing partner

Description:
Successful migration of corporate card base with a proof-of-concept period prior to re-issuing

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Cards portfolio:
Cards portfolio: 100,000+

Project type:
Reissuing

Many fintechs dream of rapid expansion, but that can turn out difficult without scalable processing infrastructure. One fintech issuer found a way to gradually replace a legacy system with a cloud-based issuing partner – resulting in a secure corporate card base migration, on their own terms. The secret sauce? Proof-of-concept testing.

The fintech issuer – with small initial card volumes – ‘was looking to accelerate growth and market expansions. But the company’s original issuing system provided by their current card processor was not sustainable: it was hard to scale and frequent service interruptions impacted the end-user experience. The company wanted a solution that would better match their business objectives.

The fintech issuer decided to source an entirely new setup, which could support an evolving product portfolio and overcome the shortcomings experienced with their previous processor.

The company solved its pain points by partnering with a flexible payment processor, enabling it to start issuing a new base of cards – whilst operating pre-existing cards on the company’s original processing platform.

The share of cards issued on the new platform grew fast, and soon the fintech company was issuing all new cards through the modern service. This could be done after key processes like onboarding, embossing, card usage and API integrations to the end-user facing app were validated and completed – and the company was sufficiently confident in the system’s performance.

Next, the fintech issuer was ready to start re-issuing its existing card base. This happened in phases, starting from small re-issuing batches and proceeding to bigger batch sizes with time. The issuer had full control over which specific cards it re-issued without needing to coordinate with its new processor partner. The company could simply retrieve data from its previous issuing system, independently, and then create new cards and accounts on the new processing system by leveraging the system’s migration APIs.

The migration project took eight months, and more than 100,000 cards were issued during the partnership’s first year. The phased implementation – with relentless focus on testing and contingency planning – enabled the fintech issuer to greatly reduce risks related to changing its payment processing system. It also helped the company to build up a strong relationship with the new processor, and to carefully evaluate the new issuing platform and its concrete business value.

Key learnings:

- Both parties benefited from a phased implementation where transaction volumes were incrementally ramped up. This provided the time necessary for making necessary adjustments before larger volumes were introduced.
- The independent approach to reissuing was considered both valuable and practical, because the issuer was able to proceed in a flexible manner without needing any major coordination efforts.

Phases of a typical migration project

As this guide has shown, migrations are extensive projects. In order to establish clear responsibilities and minimise bottlenecks, it’s important to break up the project into smaller parts.

In the next page we detail the typical phases of a migration project. Obviously, the outline of a migration project is determined by the issuer’s specific business context, product portfolio and the volume and type of cards to be migrated. And while there is no one-size-fits-all approach to project outlines, we have generalised the most typical elements based on the many migration programmes we have been involved in.

Typical phases of a migration project

1 week

Validation and conclusions

Full teams from issuer and card processing partner

Execution phase

Relevant issuer parties:
Project management, executors and operations

Card processing partner:
Project manager and executors

2 week

Select and define the migration approach based on your business and technological needs

Relevant issuer parties:
Business owners, customer service, application owners and architects

Analysis phase

- Identify end-user impact of the migration
- Identify internal impact of the migration

Relevant issuer parties:
Business owners, customer service, application owners and architects

Card processing partner:
Product expert(s), architect and project manager

Create detailed plan of migration, including rollback, fallback and risk mitigation plans

Relevant issuer parties:
Project management, testers, developers, executors, customer service and operations

Card processing partner:
Project manager, Product expert(s), developers, testers and operations

4-8 week

Implement needed solutions

Relevant issuer parties:
Application owners, project management and developers

Card processing partner:
Product expert(s), developers and project manager

4-12 week

Testing and piloting of selected approach

If there is a credit billing cycle included, even up to three monthly cycles of testing may be needed

Relevant issuer parties:
Project management, testers, developers, customer service and product management

Card processing partner:
Product expert(s), developers, testers, operations and project manager

Ongoing activity*

Communicate to external and internal stakeholders

Communicate to external and internal stakeholders Issuer customer service and business owners

*Ongoing activity throughout the project:

Migration best practices and opportunities

Based on experience, one of the biggest pitfalls in a migration project can follow from an intention to replicate old system behaviour in the new system – a so-called “as-is” approach. This method usually turns out to be extremely time-consuming; requires costly customisations; does not provide new functionalities to end-users as part of the migration, and becomes burdensome in the long term.

Today’s payment ecosystem forces issuers to think bigger, and adopt an end-to-end perspective to their migration projects. Besides using architecture that adapts to your changing business needs, your team needs to excel at planning, coordinating and executing all card payment-related activities – whether it’s back-office operations or customer-facing communications. By running a well-orchestrated migration, your issuing business can better satisfy customers and differentiate itself from competitors.

Consider these best practices when choosing and executing your migration approach →

See the migration as a means to modernising your business architecture, and introducing new features to end-users.

- Reissuing cards provides a great opportunity to launch new card features or value-added services, or to otherwise simplify and harmonise your product portfolio. By accompanying a card change with a new payment product or feature, the cardholder experience will become logical, coherent and even enjoyable.
- Providing a new card and related communication gives you a new customer touchpoint. Take the opportunity of thanking loyal customers by introducing cardholder rewards.

Tight communication with cardholders, service partners and stakeholders – before, during and after the migration.

- Manage expectations by communicating concrete implications for each party.
- Highlight the benefits to your end-users (e.g. access to new features).

> “By accompanying a card change with a new payment product or feature, the cardholder experience will become logical, coherent and even enjoyable.”

Prioritise internal communication and training in order to build a foundation for long-term success.

- Success following migration is very much dependent on all involved parties being well informed and prepared.
- Secure commitment and buy-in from your organisation: Plan to engage all internal stakeholders and ensure that relevant training is completed well in time for the go-live.

Detailed execution and scenario planning allows you to react effectively when the unanticipated happens.

- Identify the critical tasks that cannot be delayed, or where there is no plan B. A migration always brings unexpected events, but by planning ahead you stand ready to act.

Invest considerable time in dress rehearsals and testing; it will mitigate risk and grow confidence in your new system.

- Rehearsing prior to go-live is especially important for credit products: Issuers should run through the whole invoice-reminder-collection processes at least once – preferably twice in order to identify possible setup errors beforehand.

Case story

Seamless closed-loop migration - from legacy to cloud

Description:
Closed-loop migration of business cards from legacy system to cloud processing

Cards portfolio:
Cards portfolio: 60,000

Project type:
Data migration

Any closed-loop data migration involves plenty of complexity. But the process can be made smooth through a systematic approach to mapping, importing and reconciling the data. Here's how a European issuer executed a well-prepared migration together with its cloud-based provider.

The large European-based issuer was conducting a data migration for card accounts and the cards attached to them. The company was able to leverage its cloud processor's standard APIs for creating accounts and cardholders.

The issuer first mapped all relevant data in its CRM, with the help of a migration data specification provided by its new processor partner. The partner complemented this information – mainly consisting of account and cardholder data – with card specific information, and then imported the entire data package into a card management system.

In order to reconcile the migration data, the processor partner provided data exports from the new processing system. This data was then validated against the issuer's old system, containing plenty of obsolete data, so that only the relevant data scopes were migrated to the new system.

The project's tailored design enabled the migration to happen without visible impact to cardholders

Since the card base concerned a business credit product with custom features such as a flexible invoicing date, the migration came with unique challenges. It required a new product framework with support for add-on features, while maintaining the required functionality and relevant testing methods tailored to this specific card base.

The project's tailored design enabled the migration to happen without visible impact to cardholders. Following initial migration in the first market, the European issuer could seamlessly move on to its other geographies using the same migration framework, with very few operational changes required.

Key Learnings:

- The project centered on data migration rehearsals and building a new product framework. Extensive preparation enabled the actual migration to be completed in just one business day.
- When an issuer opts for a modern processing setup – based on migration APIs developed with an industry-standard setup – future development efforts can become much smoother. Standard compliance requirements like payment notifications can be automatically implemented on APIs, without extra investment on the issuer's part.
- With one single provider catering for multiple countries and currencies, operational expenses can be minimised.

6

Future view: How to scale your card business

A successful migration project creates a strong technical foundation for growing your card business. In order to add value on a large scale, however, migrations need to be combined with a forward-looking product strategy and solid business objectives.

In the next page we provide concrete insights to help you grow your card business volumes – among many other things, by expanding your solution scope and reach. We also dig deeper into some emerging trends that are set to affect established issuers in the years to come.

Scaling up your card base

New features and add-ons:

First and foremost, issuers should be continuously screening for emerging features that could become relevant among their target segments. By capturing weak signals among your end-users, or benchmarking successful launches of industry forerunners, you can gain valuable insights.

It's easier to start experimenting with these types of services with an efficient and flexible processor. It enables you to be open minded and pilot new features with data-driven technology, without having to make any big financial commitments.

Salient examples include:

Digital wallets
Driven by the growth of high-value contactless payments during the pandemic, some issuers have seen transaction volumes grow dramatically after adding a digital wallet like Apple Pay: an Enfuce client enjoyed an uptick of more than 40 percent.

An enhanced cardholder journey
Introducing an upgrade path from a prepaid to a credit card can drive additional card revenue per user.

> "Reaching new segments is easier if you can offer modern, value-adding product features."

Entering new customer segments:

Engaging with a wider audience provides a straightforward way to grow your card business. Target new segments with your existing cards and features, or introduce a new type of card in a niche segment – like SMEs or underbanked demographics.

Here are some examples:

Credit line.
One way to bolster an existing prepaid product is to introduce a credit line. This can be done in various ways: either adding credit functionalities to products already live, or by establishing an entirely new credit/card product alongside existing ones.

Explore new features.
Reaching new segments is easier if you can offer modern, value-adding product features; anything from digital wallets and budgeting features (either in-app or in a web interface) to carbon footprint tracking, bill splitting, or cashback functionalities and campaigns. The above mentioned products and features are easily enabled by versatile APIs.

Consider the life cycle value.
A key dimension in a sustainable card business is the customer life cycle: For instance, through a relevant and savvy payment product portfolio, an issuer can nurture customers throughout their various life stages. This process can be supported by analysing the accumulated customer insights made available through a processing system.

Entering new geographical markets:

Your processing system should enable a low-effort, secure and reliable expansion to new countries that often have varying currencies and regulatory frameworks.

International product strategy.
Expansions can be enabled by multi-currency products – or the ability to quickly launch country/currency specific products. If markets differ substantially, building separate products might be the better option. If there are many similarities among markets, one multi-currency product might allow you to offer one cohesive offering in several countries.

Processor's geographical reach.
By choosing a processor with solid international experience and market coverage, it's considerably easier to grow your business across geographies – without unnecessary friction, whilst keeping pace with the competition.

Enhanced offering through new integrations and insights:
A robust processing setup should allow for seamless integrations with market-specific enablers such as SCA, KYC and PSP – but equally integrations to value-added services, and to providers of transaction-based insights. These types of partner-based integrations are important because they can grow your card product's relevance and attractiveness, and enhance your positioning among new user segments, in new markets.

Key trends that future-oriented issuers should follow

The digital payment ecosystem is evolving rapidly, so it's never been more important to stay tuned to emerging trends. Below, we list some key technologies and trends that issuers should keep an eye on:

Digitally native currencies.
New emerging forms of digital currency, like cryptocurrencies and loyalty points, are becoming increasingly relevant. In order to gain compatibility, issuers should aim towards digitally native and flexible processing architecture. This means they will not be locked into any one currency, but can instead make quick product launch decisions leveraging modern technology. Emerging currencies are based on transaction and rule-based systems designed to call any currency units.

In case digitally native currencies are relevant to your audience, it should factor heavily into your choice of processor partner. Make sure your partner is equipped to cover payment forms beyond fiat currency – so that you can cater to evolving customer preferences. In the payment ecosystem of the future, the concept of currency will get a broader definition, ranging from social media likes to loyalty-based credits. It's therefore important to choose a partner who can quickly and cost-efficiently meet modern needs.

Increased flexibility between card types.
Next to normal prepaid, debit and credit cards, there's a strong trend towards new forms of creative card types. As a result, a new crop of actors are providing the next generation's issuing methods, which include novel authorisation decisions. A cardholder account balance, for example, doesn't necessarily have to reside in the issuer system anymore – as external systems can be integrated via API´s to provide more flexible solutions.

Enhanced offering through new integrations and insights:
A robust processing setup should allow for seamless integrations with market-specific enablers such as SCA, KYC and PSP – but equally integrations to value-added services, and to providers of transaction-based insights. These types of partner-based integrations are important because they can grow your card product's relevance and attractiveness, and enhance your positioning among new user segments, in new markets.

Flexible payment and credit options.
While traditional credit card purchases are largely standardised, modern credit options provide more dynamic feature configurability. Using real-time scoring technology, issuers can assess an end-user's purchasing power, and offer a short-term credit ("Buy now, Pay later", etc.) optionality when completing the purchase. Various credits and micro loans have considerable advantages over traditional credit cards, in which credit lines are issued ahead of time following a cumbersome risk evaluation. Dynamic credit offerings can improve the customer experience significantly.

Closed-loop transactions take center stage.
The e-commerce landscape has spawned an increasing amount of closed-loop transactions. Essentially, these transactions are routed directly from the merchant, bypassing the standard card schemes. While this brings a convenient user experience and new growth opportunities, it also adds some complexity in terms of issuing systems, since the system needs to support transactions from many different sources and the possible integration of balances.

Additionally, new microservice architectures and platform modernisations have brought changes in terms of basic system compatibility and design. This is increasing the urgency to work with flexible processor partners who can adapt to these non-traditional issuing setups.

Real-time data streaming is a technology that makes product analytics more seamless, allowing your business to access product insights instantly – in stark contrast to batch files and reports, at best providing cumbersome and out-of-date data analysis capabilities. In summary, data streaming provides an easy way to access and process data in real time, bringing both internal and external benefits:

Data streaming opens up new ways to boost the end-user experience via instant user interaction

External.
Data streaming opens up new ways to boost the end-user experience via instant user interaction. For example, you can provide up-to-date budgeting and credit solutions tailored to customer needs.

It can equally help promote relevant product features based on data insights, and offer up features that match an end-user's individual behaviour. Real-time data streams can be very useful in marketing efforts by notifying similar products or discounts that fit the user expenditur

Internal.
Access to real-time data can equally bolster key internal operations, by promoting proactive product management as well as personalised customer service and better-informed analysis. In addition, data streaming is an essential technology for targeted marketing; by leveraging timely offers based on data insights, your business can gain various benefits – from boosting growth and increasing personalisation, to reducing churn and mitigating risks.

> "Contactless payments made with digital wallets are going to expand into domains far beyond the point-of-sale or one-time in-app purchase."

Developments in regulatory and compliance requirements.
Regulations and compliance can't be avoided, and are ultimately there to reduce risks and improve the end-user experience. Instead of being just a long list of requirements to check off, regulation and compliance are increasingly becoming key business drivers; providing differentiation, more innovative service offerings, and geographical reach.

Some recent examples include risk-based authentication and new scenarios and guidelines outlined by 3-D Secure 2.2 (enabling, for example, exemptions to SCA in the case of whitelisting, and so-called decoupled authentication).
There are clear differences in how processors relate to regulations and compliance, and the extent to which they provide a full-service proposition

Some pitfalls to avoid:

Processor solutions might be compliant but rely on manual work or substantial development work on the issuer's part.

- Processor applies for waivers to postpone deadlines, which results in your business meeting key requirements later than other actors.
- Processor doesn't include future compliance to the service offering, leaving the issuer in a situation where future costs can't be predicted.

Besides obtaining a license to operate payments, meeting compliance and regulatory requirements is also critical to ensure satisfaction among end-users. By choosing the right processor, these factors are less a burden rather a fluent part of everyday business.

Growing importance of fraud management.
In the era of digital commerce, the bar for fraud management is constantly being raised, spurring issuers to deliver reliable card operations that achieve high levels of customer satisfaction.

An emerging trend during the COVID-19 pandemic has involved fraudsters turning to social engineering and phishing tactics to obtain personal information in order to make transactions using customers' details. Consequently, technological advances become essential for providing security in the fast-growing sphere of digital payments. Developments in AI-powered analysis of spending patterns, for instance, ensure that suspicious transactions can be identified swiftly. This means that cardholders can be alerted by issuers in real time, minimising potential economic losses as well as usage disruptions.

Tokenized payments expand
– It's expected that virtual cards, as well as contactless payments made with digital wallets, are going to expand into domains far beyond the point-of-sale or one-time in-app purchase. Since payments are becoming embedded in the customer journey, the natural consequence is that many fast-expanding service categories will provide built-in payment experiences.

And what are these categories? We expect tokenized payments to be in high demand in categories like home deliveries, as well as various subscription-based services especially within transport and mobility. Issuers should also take the growing relevance of virtual payments into account in their service design. In practical terms, this could mean catering for multimodal subscriptions and 'pay-as-you-go' services.

Case story

Buy now, Pay later: Validating and launching a new card product

Description:
Introducing a state-of-the-art card product fast for market validation

Cards portfolio:
50,000 for first market

Project type:
New card product outside legacy system

Digital commerce has generated soaring demand for flexible payments. But how can legacy players upgrade their offering? This bank branch found the right partner in order to carefully evaluate a novel payment concept, gaining both the confidence and capabilities to launch quickly.

The European country branch of a global retail bank was looking to quickly take an innovative “Buy now, Pay later” product to market – but needed to validate the concept carefully before launch.

The bank’s existing processing system was based on legacy tech, with limited properties for fast product testing. The bank teamed up with a third-party provider, in order to test the product’s performance through cloud-based issuing architecture – circumventing legacy systems.

Test functionalities included: financing product configuration and the sales logic for a revolving account and fixed term loan.

Together with the partner, the bank was able to test the introduction of a “Buy now, Pay later” service for Mastercard credit card users. The partner’s test institution seamlessly communicated with core banking systems (bank CRM, online bank and mobile application) in real time. Customers, accounts and cards could be created manually via an API call, and then accessed using the system’s own web-based UI.

The end-to-end concept was proven in six weeks, spanning the implementation of instalment activation and frictionless customer service workflows fully based on APIs. The proof-of-concept approach helped the issuer evaluate the product’s market potential, and prepare a business case based on live production data. Following validation, the issuer could bring the product to life by connecting it with a BIN range, launching test cards for pilot users, and activating exchange keys.

Key learnings:

- **Working with a technology-first partner, the issuer could pilot the product concept with minimum development effort in the legacy processing environment.**
- **With the proof of concept and the test institution approach, the issuer could quickly evaluate the feasibility of the new card product before making a go-live decision. Access to live production data provided crucial input for decision making, complementing market research and outside-in evaluation methods.**

7

Digital wallets are your way to growth

The Enfuce story

Since the early 2010s, growth-minded issuers and emerging fintechs have been aiming to build globally scalable financial services. These players seized new tools and technologies to build frictionless and personalised payment offerings – but met high barriers to entry.

For a long time, building an issuing business required high upfront investment. Existing payments processing solutions were mostly on-premise and country-specific, making international expansion both cumbersome and expensive. Since banks were the dominant gatekeepers of the issuing market, getting access to the systems and enablers necessary for issuing cards was a time-consuming hurdle.

Enfuce was born to solve these problems. With 15+ years of combined experience overseeing over one hundred product launches, the company's founders learned first-hand the struggles issuers faced when their visionary business ideas couldn't be matched by incumbent service providers' capabilities at a reasonable cost and lead time. And they decided to innovate.

The Enfuce team was determined to create a better, more cost-efficient way to issue cards and process payments. Our vision was to break industry norms, regarding both technology and mindset, in order to equip issuers for the exciting new future of financial services – through state-of-the art technology, flexibility in terms of features, currencies and geographies, and on-demand access to industry experts.

Launched in 2016, Enfuce became the world's first provider to run payment processing in the public cloud. We focused initially on card payments, because we saw a huge opportunity to support both traditional and modern issuers with streamlined, API-driven infrastructure.

Our platform was built on top of international payment rails, enabling the broadest reach possible for real-time open-loop money transfers.

Together with our trusted cloud partner Amazon Web Services, we established a secure IT hosting setup suited for the fast-evolving payments industry. AWS provides excellent compatibility with Enfuce's platform, helping issuers reduce their time-to-market for new products and features. Issuers also benefit from infrastructure that evolves with their business; ready to support payments today and in the future.

Since AWS operates globally and serves myriad industries, the company guarantees top-level security and reliability – giving us and our clients peace of mind when building, and scaling, cutting-edge payment propositions. We also have full cost control which means we can optimise our expenditure according to current capacity needs – and ultimately save money for our clients.

Today, Enfuce is a trusted card issuing partner of many European financial institutions, fintechs and growth companies.

Our payments and compliance professionals leverage the latest technology, industry trends and a network of partners to provide future-proof, flexible payments services – from turnkey card issuing and tokenisation to open banking and back office solutions.

The Enfuce team supports issuers throughout the cardholder lifecycle; helping define solution scopes, provide feature-rich cards, implement migrations and advise on market expansions. We also provide required enablers seamlessly, including a BIN sponsorship for issuers that want to issue cards without their own license.

In short, we remove complexity and unlock business opportunities in modern card payments. We give issuers the tools, speed and flexibility they need to transform their card business, without ever having to compromise on security and compliance. This enables our clients to fully focus their core business – providing top-notch financial services with a superior customer experience.

High performance payment services

The Enfuce platform is designed to be uncomparably versatile. Our unique cloud-based proposition enables issuers to flexibly respond to evolving customer needs, for instance by configuring cardholder fees and limits.

All our card issuing and processing operations are designed to be in real time (e.g. instant issuing), allowing our customers to streamline their payment processes – and abandon manual tasks and batch operations. We are continuously expanding the scope of our cardholder APIs, allowing our issuer customers to offer a more comprehensive real-time cardholder experience and minimise inbound load.

Overview of Enfuce issuing and processing services:

- Feature-rich and scalable card solution covering all card types, open and closed loop, physical and virtual, both for businesses and consumers
- High-value payments features as add-ons: Apple Pay, Google Pay, POS financing, instalments and e-commerce integrations
- A proven migration solution that can be used to shorten project duration by many months
- PSD2 compliance as a FSA-approved turnkey service, combined with tailored premium API platform and open banking applications as add-ons
- Sustainability services: My Carbon Action – a white label carbon footprint calculator, which issuers can integrate as part of their digital service offering for B2B / B2C customers
- Integration-friendly, enabling our customers to integrate their core business processes into Enfuce's service

Our differentiation
How we help issuers succeed

1. Comprehensive turnkey card issuing service

Enfuce provides relevant business and compliance enablers in combination with a high-performing processing platform, so you can focus on your core business and user experience.

2. Fast time to new revenue

We provide uncompromised speed and performance: with us, issuer customers launch their payment cards in weeks and cardholders can start paying minutes after applying for their card. We successfully support multiple global customers with 100,000+ cards and have a track record of migrating 5 million cards in less than three hours.

3. Top industry expertise always within your reach

Our experts help in designing the ideal payment solution to meet and exceed your business goals – and support your everyday operations as an issuer.

4. Stay at the forefront of payments innovation with us

We were the first certified processor in cloud, and have built industry-shaping features ever since. Our customers access the latest digital payments features throughout their journey.

5. Our service model supports your scalability & growth

Partnering with Enfuce means low overhead for your business and only paying for what you use. Our customers benefit from our global reach and broad range of available card types and add-on features. Our pricing supports your growth - no hidden fees.

About Enfuce

Enfuce is a one-stop shop for modern card issuing and payment processing. Founded in 2016, Enfuce has become one of Europe's leading payment processors that delivers cutting edge debit, prepaid, and credit card solutions across Europe and scaling globally, with offices in Finland, Germany, Latvia, Sweden, and the UK. With Enfuce card solutions, traditional banks, neobanks, and fintechs can create next-level payment experiences for their end users now and into the future. Enfuce has raised a total of €62 million in several funding rounds and been awarded with recognitions like the Visa Fintech Fast Track programme, Mastercard Lighthouse Development Programme, and 2019 PayTech Award for Best Payments solution for Payment Systems in the Cloud.

For more information about how to start issuing cards, contact us or visit us at **enfuce.com**

enfuce

Where happiness is built-in

Denise Johansson
As one of our co-founders at Enfuce, Denise has 15+ years of experience within financial services to lead the company towards sustainable growth. She established ambitious objectives guiding Enfuce to expand, employ the latest digital technologies, and push the team further than they'd been before.
denise@enfuce.com

Linda Buss
is the Product Manager for Payments at Enfuce. She has worked with payments in various positions for almost 20 years and has vast and diverse expertise in the field. In her current position as Product Manager, she is driving various initiatives to ensure that our product is and remains best in the market.
linda.buss@enfuce.com

Venla Pouru
Is the Director of Strategy and Growth at Enfuce. She is driving the company's global expansion through opening new markets, segments and partnerships. Prior to joining Enfuce, Venla has worked 10 years in new business building, digital product management and top management consulting.
venla.pouru@enfuce.com