INNOPAY

A business of Oliver Wyman

BOOK OF INSIGHTS 2025

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FOREWORD

Dear Reader

Welcome to our latest edition of the Book of Insights, where we delve into the highlights and pivotal moments of 2024 — a year that continued to shape and redefine the landscape of digital transactions. This compilation is more than just a reflection; it is a celebration of the knowledge we've gathered and shared through our meticulously curated articles, insightful blogs, and engaging interviews.

The past year has been marked by significant advancements and shifts in the digital transactions community, driven by innovation, regulatory changes, and evolving market dynamics. In this book, we aim to provide you with a comprehensive overview of these developments, offering clarity and perspective on the complexities of our industry.

As you turn the pages, you will revisit some of the year's most influential content, carefully selected to enhance your understanding and appreciation of where we are heading as a community.

We trust that this book will not only inform but also inspire you as we continue to navigate the exciting challenges and opportunities ahead. Thank you for joining us on this journey of discovery and growth.

Happy reading!

The INNOPAY Team

BLOG

DEMYSTIFYING THE PAYMENT SCOPE RELATED TO THE EUROPEAN DIGITAL IDENTITY WALLET

By Vincent Jansen, Leon Kluiters, **and** Frederiek van der Molen

A wide variety of digital wallets have been introduced in the past years, with varying functionality. Functionality includes making in-store payments, earning loyalty points, entering restricted areas, logging in to online services (eID) and signing. Next to existing digital wallets (for example, Apple and Google), the EU Commission now proposes a European Digital Identity Wallet (EUDIW) that will be available to all EU citizens, but there is some debate about its relevance for payments use cases. This article sets out to demystify the EUDIW's scope in a payments context (link).

The EUDIW contains three elements to enable generic functionality for EU citizens: Personal Identification Data (PID), a qualified signature and all sorts of electronic attestations of attributes (qualified and non-qualified) (see figure).

Numerous intended use cases

These three elements enable EU citizen to use the EUDIW as a way of identification or to confirm certain personal attributes for the purpose of access to public and private digital services across the EU (link). The EUDIW aims to support a large number of use cases: requesting medical certificates, reporting a change of address, opening a bank account, filing tax returns, applying for a university, at home or in another Member State, storing a medical prescription that can be used anywhere in Europe, proving your age, renting a car using a digital driving license, checking in to a hotel and much more (link).

While many of these use cases appear as straightforward use cases for the EUDIW, the role of the EUDIW in the payments use case causes a bit of a debate. In the first draft of eIDAS2.0, payments were not mentioned as a use case (link). However, since the publication of the first draft, the use case for payments has become a point of discussion.

TImeline of discussion about use for payments

In May 2021, the European Commission posts content on the EUDIW. In the post, opening a bank account with the wallet is mentioned as one of the use cases. However, payment is not explicitly mentioned as a use case (link).

In November 2023, the European Commission publishes a press release on the final agreement on the EUDIW (link) together with a Q&A (link). In the press release, it is mentioned that "the Wallet will allow users to make payments" and that large-scale pilots "have started testing the EUDIW in a range of everyday use-cases, including digital payments." In the press release, no specific definition of the payments use case is given.

In the Q&A however, it is mentioned that users will be able to use the EUDIW "to authorise online transactions, in particular where strong user authentication is required." Also, "initiating a payment" is mentioned as one of the examples. These Q&A answers suggest that authorising payments would be in scope of the EUDIW.

In a world where the EU commission claims that an EUDIW contains attestations of attributes as well as generate electronic signatures, the question remains: how does payments fit in?

How INNOPAY views the scope of payments regarding the EUDIW

It is our opinion that some parts of a payment flow are in scope as an EUDIW use case, while other elements remain out of scope. We believe banks must accept EUDIWs for the purpose of identification and authentication, both in onboarding and payments. Payments authorisation, however, remains in control of banks and falls outside of the scope of the EUDIW (See Exhibit 1). This means that, in line with PSD2 requirements, banks may establish contracts (bilaterally) or setup schemes (multilaterally) with issuers of EUDIWs to delegate payment authorisation to the EUDIW. However, setting this up at EU scale is not trivial, nor is it compulsory for banks to enter in such contracts/schemes.

Identification: The EUDIW simplifies onboarding processes

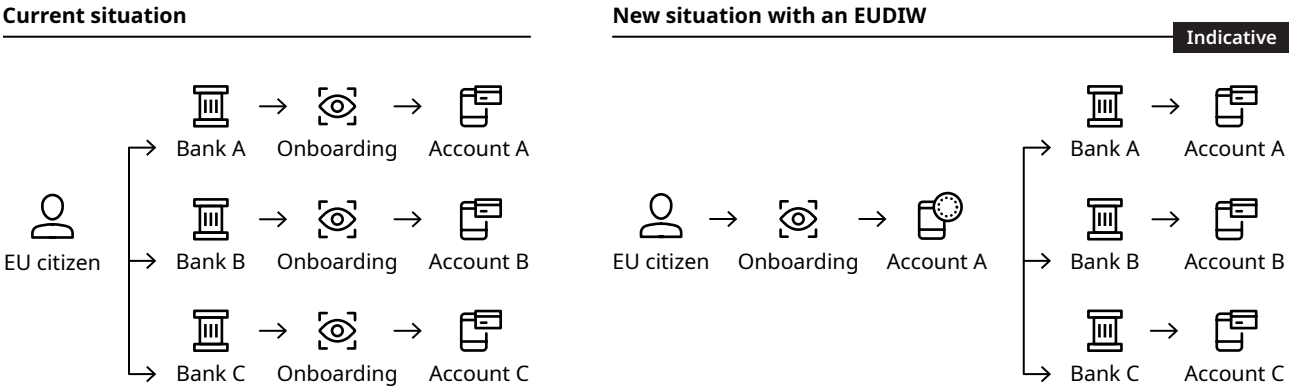
Identification for the purpose of opening a bank account is a use case of the EUDIW. This use case simplifies the process of onboarding customers. When opening a bank account, banks need to validate and verify a customer's identity for "Know-Your-Customer" (KYC) purposes. Existing onboarding processes of banks can be improved drastically by using the EUDIW. Banks benefit from this because the onboarding and KYC process is costly. EU Citizens benefit because identification with the wallet is very easy compared to existing processes, especially in an online context (See Exhibit 2).

Exhibit 1: We believe authorisation is not in scope of the EUDIW

		What does this part look like in a payment use case?	Do we think there is a role for the EUDIW?	How can the EUDIW help with a payment use case?
Identification	Who are you?	An EU citizen opens a bank account that they can use for future payments	✓	An EU citizen opens a bank account with the help of their EUDIW
Authentication	How do we know it is you?	An EU citizen logs into their online banking environments	✓	An EU citizen logs into their online banking environment with their EUDIW
Authorisation	What are you allowed to do?	A payment authorisation page is presented to an EU citizen, who approves the payment	✗	Banks maintain in control of the payment authorisation pages. There is no requirement to delegate this to third party (wallet) providers

Source: INNOPAY analysis

Exhibit 2: The EUDIW simplifies onboarding processes of banks



Source: INNOPAY analysis

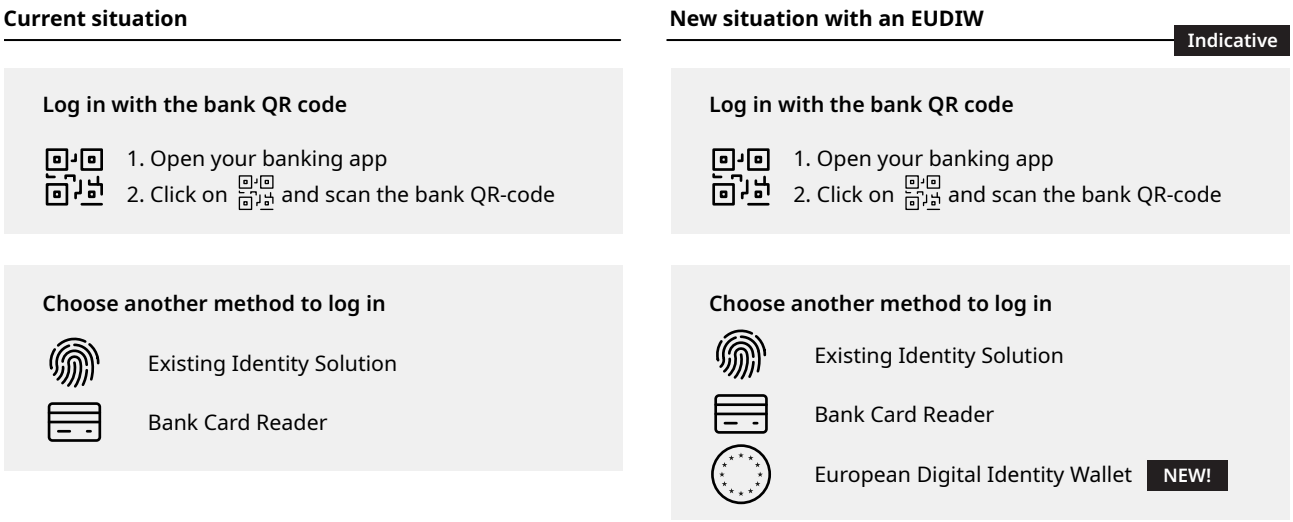
Authentication: the EUDIW complements login solutions offered by banks

Authentication for both login and payments is a use case of the EUDIW. The European commission mentions this in their Q&A about the EUDIW (link):

"Will users be able to use the EU Digital Identity Wallet for banking? Yes, citizens will be able to use the EU Digital Identity Wallet for identification and authentication for payments, opening an account and other services in full security and protection of personal data. In all these cases, the wallet will not replace, but complement solutions offered by banks."

This means that European banks need to accept the EUDIW as a valid authentication mean to log into online banking environments. Below is a hypothetical visualisation of what this would look like in practice.

Exhibit 3: The EUDIW can be used to log into your bank environment



Source: INNOPAY analysis

As mentioned by the European commission, the EUDIW will not replace the existing alternatives (such as card readers, digital identity solutions and banking apps) but rather complements the solutions offered by banks.

Authorisation: the EUDIW does not need to be accepted by banks for payment authorisation

Authorisation is the main discussion point in most of the discussions about payments and the EUDIW. In the context of the EUDIW, we believe payment authorisation remains outside its primary scope. While the EUDIW serves as a versatile tool for identification and authentication, it is not designed to handle payment specific authorisation dialogs, now handled by banks.

This distinction is crucial, particularly considering the liability aspects tied to payment authorisation, where banks have both control and responsibility. The liability for errors in payment details or fraud remains a significant challenge, making the inclusion of payment authorisation within the EUDIW's functionalities not only complex but potentially filled with legal challenges.

Banks and others need to keep a close eye EUDIW developments

The landscape surrounding payments and the EUDIW will be marked by ongoing uncertainty for the foreseeable future. For banks and financial institutions, vigilance is key to staying ahead in this environment. As the European Commission continues to further specify elements of the eIDAS regulation in implementing acts, staying informed is crucial. With our expertise in both digital identity and payments, INNOPAY offers guidance to help navigate these changes effectively. Reach out to us to ensure your organisation remains prepared and responsive in the face of these critical developments.

Read more about demystifying the payment scope related to the European Digital Identity Wallet

Original blog

BLOG

YES, THE EU DIGITAL IDENTITY WALLET IS COMING!

European Commission votes in favour of adopting the eIDAS revision

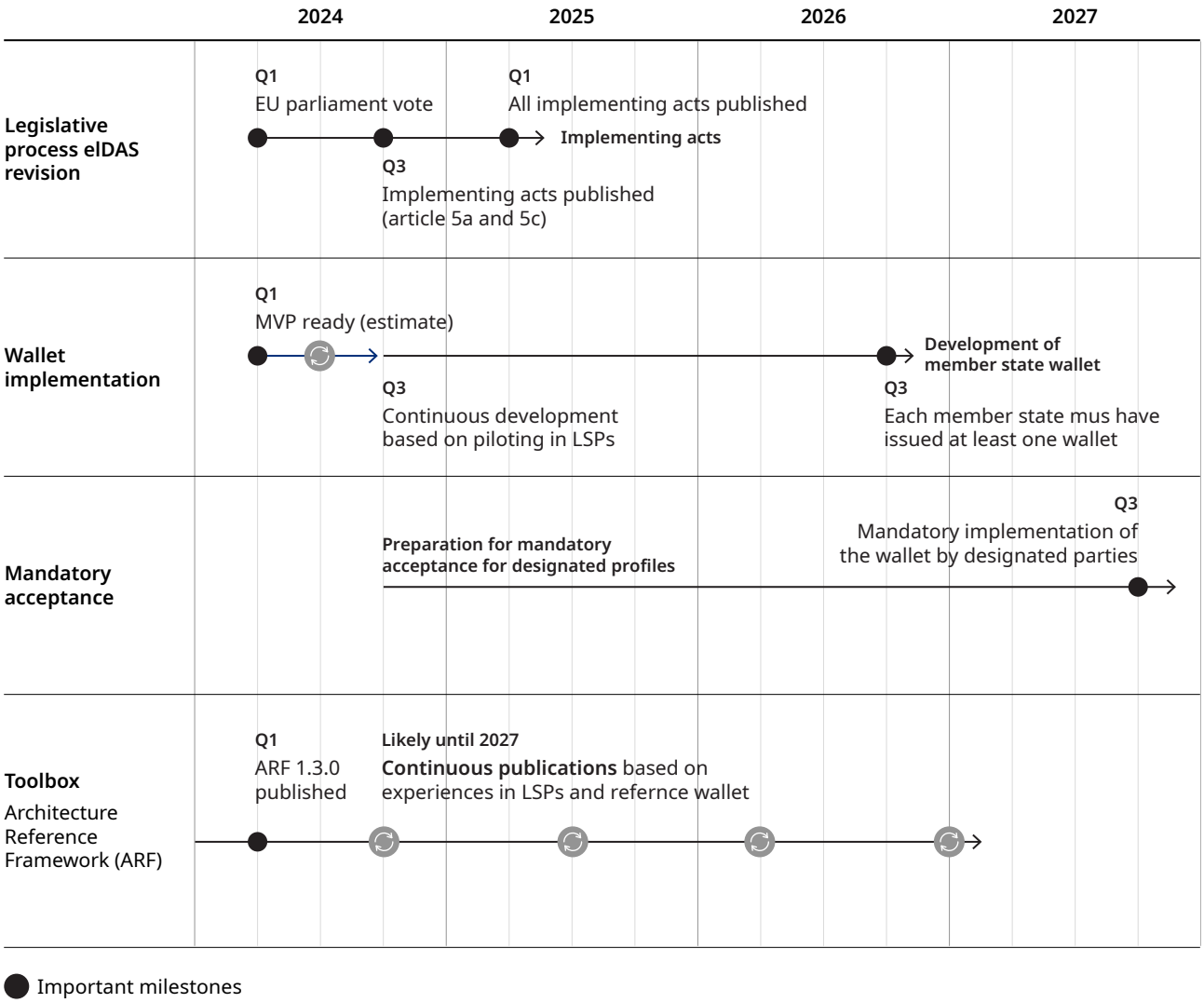
By Vincent Jansen

On Thursday, 29 February, the European Commission (EC) voted in favour of revising the eIDAS regulation. eIDAS aims to facilitate a harmonised approach for digital identity across Europe through the European Digital Identity Wallet (EUDIW). The EUDIW is designed to offer both citizens and legal entities a secure and user-friendly method for authenticating and sharing their data. Importantly, it empowers users to maintain full control over their personal information. The EUDIW has many potential use cases such as opening a bank account, renting a car or checking in to a hotel.

The acceptance of the revision by the EC allows the eIDAS process to advance towards implementation and acceptance. According to the indicative timeline (see figure showing the timeline), the EC will detail the required technical and operational standards through implementing acts within six months of the regulation taking effect.

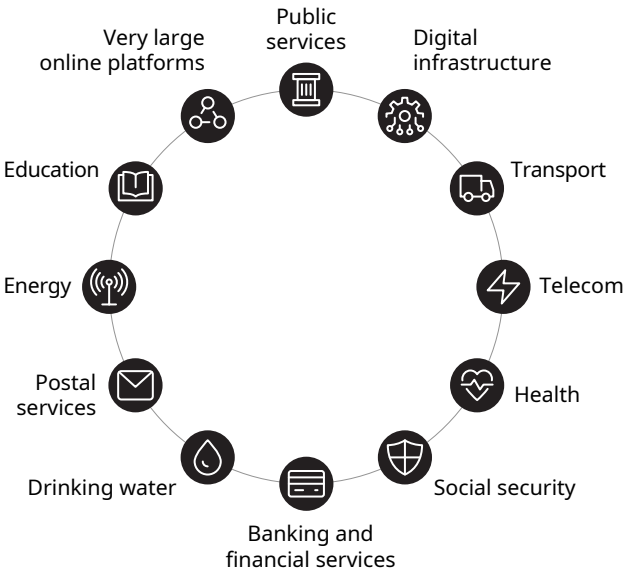
Each Member State must issue at least one European Digital Identity Wallet within 24 months of the Implementing Acts entering into force. And perhaps even more importantly, it will become mandatory for organisations in certain sectors (see figure showing the sectors of designated parties) to accept the wallet 36 months after publication of the Implementing Acts.

Exhibit 1: eIDAS revision timelines



Source: eIDAS revision, version 2024. INNOPAY analysis

Exhibit 2: Sectors with mandatory acceptance



Note: Online platforms are defines as "very large online platforms" under the definition of Digital Services Act (DSA)

Source: INNOPAY analysis

Although the meaning of "acceptance" will differ per sector, organisations (both public and private) in designated sectors must accept the EUDIW for the provision of services where strong user authentication for online identification is required. Examples include use of the EUDIW for logging in to online services in the public domain and the energy sector, or for onboarding customers and the authentication part of payments in the financial sector.

As of today, organisations classed as designated parties will be under growing pressure to ensure EUDIW compliance within the indicated timeframe. They will need to dedicate significant effort and resources to aligning their operations with EUDIW acceptance. Creating an effective strategy — whether by partnering with wallet intermediaries or identity brokers, or by constructing the required infrastructure in-house — demands a thorough examination of the organisation's operating model, along with the intended strategy related to eIDAS revision and the EUDIW.

INNOPAY has extensive experience with all of this and more. We are the one-stop shop for strategy, implementation, scheme development and product development concerning all aspects of the eIDAS revision.

Read more about the requirements and opportunities that the eIDAS revision and the EUDIW present for your organisation

Original blog

BLOG

HOW DATA SPACES CAN HELP ORGANISATIONS TO CROSS THE VALLEY OF DEATH

By Mariane ter Veen and Jaana Sinipuro

Today's economy is undergoing a dual transformation. On the one hand, organisations are under pressure to digitalise, while on the other they must also improve their sustainability. In this blog, to tie in with the EU Data Summit in Berlin, we outline a way to take a digitally sustainable approach to data. This will help organisations to cross the " Valley of Death", and successfully transition from architectural blueprint-driven initiatives with a high research connotation, into thriving business driven ecosystems.

This year's EU Data Summit zooms in on the challenges at the heart of the EU Data Strategy's aim to create a " fair data economy". Besides the complexities associated with fostering fair global competition and comprehensively regulating the dynamic and increasingly open environment, the summit focuses on both the digital transformation and sustainable transformation that organisations are currently facing. We believe that successfully navigating this dual transformation calls for a " digital sustainability" mindset and approach. But what exactly do we mean by digital sustainability?

The importance of digital sustainability

At the fundamental level, digital sustainability means extending environmental, social and governance (ESG) considerations to the digital world as well as the physical world. For example, the huge data centres that form " the cloud" should be energy efficient, and the armies of real people training AI models should have the same human rights as employees in other industries.

But in a wider context, digital sustainability is about agency over one's personal and business data, generating long-term value, transparency and equity for all parties. And that equity may not necessarily only be in monetary terms; there may be other, less tangible ways in which people and businesses could receive a fair share of the benefits when providing their data in order to gain access to products or services. Digital sustainability is also about offering viable alternatives to the non-explicit trade-offs that people have become accustomed to in this age of the Big Tech platforms.

Data spaces are ramping up

Digital sustainability has recently been boosted by the EU Data Strategy, which has introduced the concept of " data spaces". These are strategic initiatives aimed at making more data accessible and reUSble for the benefit of European businesses and citizens, while empowering data holders to be in control of their data. Each sector-specific data space creates a trustworthy and secure environment for data sharing, and is the sum of all its participants, including data providers, users and intermediaries.

The development of data spaces is now ramping up — supported by the ever-growing need for data, guard-railed by EU data laws, and stimulated by the EU Digital Programme and the Data Space Support Centre. However, many organisations are currently struggling to cross the " Valley of Death". For example, they are having a hard time transitioning from architectural blueprint-driven initiatives with a high " research connotation", to thriving ecosystems business driven innovation. They face difficulties closely tying their current data space efforts with the business, or they are getting lost in the seemingly isolated worlds of GDPR, data spaces, Digital Identity Wallets and the like. As a consequence, they have trouble finding a clear path from " where they are now" to " where they want to be" in data space land.

At INNOPAY, we believe it is time to seize back trust and control by shaking up the existing data-sharing infrastructure. To deliver on the promise of a digitally sustainable data economy, we just need to ensure that data spaces are a success.

The three key ingredients for this are:

1) Cross the artificial divide between personal and non-personal data

The current thinking about data is dominated by an artificial divide between ” personal“ and ” non-personal” (that is, ” business“) data. This divide is counterintuitive when striving for a human-centric approach and digital sovereignty. Additionally, on a practical level, ignoring personal data will limit the overall potential to roll out use cases that bring positive benefits for a wider public. After all, personal data can be found in numerous sectors — from finance and health, to mobility and employment. It is therefore necessary to cross this legal divide. The good news is that the legal infrastructure already exists to handle personal data in a digitally sustainable manner (for example, the Data Governance Act, data intermediaries). The next step is to show how to deal with personal data in the data space realm based on clear examples of best practices.

2) Focus on adoption

It’s time to shift the focus on what drives real adoption. From a business perspective, this means helping businesses to support high frequency use cases, develop new business models and set up pilots. Develop clear roadmaps and share blueprints and best practices that can help them from their current ”as is“ phase to their aspired ”to be“ situation. From a policy perspective, it is necessary to cater to interoperability by focusing on interoperability at all levels: legal, organisational, semantic and technical.

3) Start now

Businesses can and should start reaping the benefits of sharing data through data spaces right now. INNOPAY has developed a 7-step guide outlining how giving customers control over their data can be instrumental in solving business issues and/or delivering new value through innovative or improved products and services.

Core fabric of the data economy

Data spaces are the core fabric of an interconnected and competitive European data economy. A digitally sustainable approach is fundamental to the successful implementation of data spaces to enhance the development of new data-driven products and services in the EU. Only then will we be truly able to unleash the enormous potential of data-driven innovation and secure Europe’s future in the digital age.

Read more about how data spaces can help organisations to cross the valley of death

Original blog

BLOG

2024: THE DAWN OF A NEW ERA IN EUROPEAN PAYMENTS

By Dr. Stephen Whitehouse

Last year marked the beginning of a revolutionary phase in the wake of transformative changes in the non-card payments infrastructure across Europe. We are seeing growth in instant payment solutions focused on interoperability across all markets. Demand for new solutions and analytics to reach more customers and changes in the regulatory landscape are shaping the future of payments.

I want to reflect upon the key trends shaping the payments landscape in Europe and illuminate strategic considerations for stakeholders in the payments value chain to better position themselves in 2024.

Instant payments in Europe: Regional blocks

We are entering a new era of European payments, with cash USge continuing to decline, the European Commission mandating instant payments, and an increased desire for convergence to create a European payments champion.

At the same time, we see various regional "blocks" emerging in commercial instant payments:

- **Northern block:** MobilePay (founded in Denmark) and Vipps (founded in Norway) officially merged at the end of 2023 with a mission to create a prominent Nordic mobile wallet, providing inclusive and cross-border solutions within e-commerce and mobile payments at a much larger scale.
- **Eastern block:** Blik is expanding beyond Poland into Romania and Slovakia to drive further integration and advancement across Polish and European banking.
- **Western block:** The European Payments Initiative (EPI) has managed to unite French, German, Dutch, and Belgian Banks and Third-Party Payment Service Providers (TPPs). They aim to launch a new digital payment solution called Wero in mid-2024. Wero will initially offer P2P and E-commerce payments before expanding to POS transactions and other functionalities.
- **Southern block:** Three leading mobile payment companies, Bizum (Spain), Bancomat (Italy), and SIBS (Portugal), have announced a plan for P2P interoperability, allowing fast, convenient, and secure instant payments in all three countries, marking a step towards a broader agenda.

We also see a public player entering this space: the European Central Bank (ECB), which is currently preparing for the digital euro project. The Digital Euro will combine P2P, e-commerce, POS, and government payments into a single payment offering. Will there be enough space for all these solutions to succeed, or will we see further integration in the European Payments landscape?

Finance for POS, SME lending, and embedded solutions

Banking is moving closer to customers' point of need and is increasingly being delivered by a broader range of providers in digital ecosystems.

While POS financing for consumers has seen modest growth, the real action lies in SME lending. Merchant Cash Advance (MCA) solutions have experienced a remarkable 50% surge, underscoring the growing reliance on alternative financing methods.

Successful specialist acquirers address merchants' needs more holistically, managing their cash flows end-to-end and building broader banking offers. Combined offers are particularly compelling for smaller merchants, who usually have less access to issuing/lending products.

Platforms and marketplaces are also stepping into the arena with the launch of seller financing.

Banks have traditionally struggled to do embedded finance well because it requires a different set of capabilities from traditional banking, with a stronger focus on tech enablement, customer servicing, and risk management in third-party ecosystems and distribution capabilities. FinTechs have dominated the partnerships that have fuelled the rise of embedded finance globally in recent years by creating innovative products that define new markets (for example, BNPL) and forming large landmark partnerships

with merchants, platforms, and marketplaces. Recent European examples include the £4bn private securitisation deal between YouLend and JP Morgan and the Mangopay partnership with Mondu.

For banks: failure to respond will harm business models in the medium term, hitting market share, profitability, and customer stickiness. Banks should decide how they wish to compete, either partnering with FinTechs or acquirers and playing in the parts of the value chain that they're strong in. They should also build out product and distribution capabilities, organically or inorganically.

For payment service providers: there is scope to accelerate growth and diversify into other embedded finance revenue lines. Partnerships with third-party financial institutions or alternative investment firms are an option to secure financing lines. Leading PSPs in this space are now driving 40% of their revenue from non-acquiring revenue lines.

For corporate development investors: explore selective financing and investment opportunities with PSPs and FinTechs. Selecting the right target, with distinctive payments and embedded finance value proposition, will be decisive in a "few take most scenario;" conducting thorough and ad-hoc due diligence is critical.

Embracing AI in payments

The integration of artificial intelligence (AI) in payments, embodied by FinTech giants like Stripe, is transforming fraud detection and transaction analysis.

In contrast to traditional methods, AI operates on a grand scale, scrutinising vast transaction data to thwart false declines, thereby bolstering conversion rates. This shift underscores a strategic response to the mounting challenges in fraud prevention, affirming the industry's dedication to leveraging state-of-the-art technologies for heightened security and user experience.

Separately, issuing banks can leverage AI-powered analytics on spending behaviour, budget management, and preferences to enable a personalised customer experience. This will ultimately boost merchants' loyalty and sales. Businesses can further use real-time analytics and insights to forecast and manage cash flows and make informed decisions.

For banks: a pivotal moment looms. Either become early adopters by integrating AI into developing frameworks such as open banking, potentially encountering initial challenges, or risk lagging behind competitors who have already embraced AI in payment operations, for instance, by enabling seamless user journeys across channels.

For Payment service providers (PSPs): specific use cases need to be identified, such as ensuring compliance, improving risk management, and enhancing reporting, to leverage AI's true potential. Given the technology's novelty and unpredictability, PSPs may opt to collaborate with specialised firms or invest in internal capabilities to harness AI for streamlined analytics.

For Corporate development investors: the critical task is selecting viable opportunities amid a landscape saturated with startups touting AI expertise. Key considerations include assessing how AI delivers tangible value to stakeholders, particularly merchants and consumers. Can AI effectively address their pain points in complex transactions, such as multi-currency exchanges and Business-to-Business BNPL transactions?

Payments: How regulators are shaping the future

One area of focus is the scrutiny of schemes and interchange fees, particularly in markets like the UK. This pressure forces payment networks to reassess their pricing structures. Additionally, regulators are emphasising the importance of granting third-party access to proprietary wallets, such as Apple Pay, which highlights a critical aspect of regulatory development.

Regulators have also intensified their efforts to combat Anti-Financial Crime (AFC), Anti-Money Laundering (AML), and Counter-Terrorist Financing (CTF) risks. Several businesses, including Modulr, Railsbank, Prepaid Financial Services, and CFS Zipp, have faced fines and remediation programs. These programs demand significant management attention and underscore the need for proactive measures to strengthen financial crime defences.

Looking ahead, the introduction of PSD3 in Europe will have a profound impact on payment regulation. It aims to address fraud, payment authentication, and the evolving competitive landscape between banks and FinTechs. Banks will need to re-evaluate their card issuance economics and consider cost reductions in payment operations, including branch and ATM networks, to remain competitive against app-only challenger banks. Compliance with PSD3 will require issuing banks to balance risks and support Strong Customer Authentication (SCA) exemptions to enhance the cardholder payment experience. Depending on the outcome of the consultation process following Apple's commitment to the European Commission, banks may also explore investments in proprietary wallets. They may also leverage NFC access on iPhones.

Furthermore, a highly significant regulatory initiative on the horizon is the digital euro. As it evolves, the digital euro could have a profound and transformative impact on the payments landscape. Industry participants will need to adapt their strategies, infrastructure, and services to accommodate this new form of digital currency. The digital euro represents a pivotal development that will shape the future of payments. It will necessitate proactive measures to mitigate risks and capitalise on opportunities it could present.

For banks: card issuance economics need re-evaluation in light of these new regulations and consider lowering the costs of their payment operations, including their branch and ATM networks, to remain competitive against the app-only challenger bank model. As part of their compliance with PSD3, issuing banks must balance risks and support Strong Customer Authentication (SCA) exemptions to improve the cardholder payment experience. Subject to the conclusion of the consultation process following Apple's commitment to the EC, banks may consider investing in proprietary wallets and leveraging access to NFC on iPhones.

For Payment service providers (PSPs): infrastructure and risk frameworks will need to be updated to ensure full compliance. PSPs will need to maximise exemptions granted under PSD3 while mitigating the potential adverse impact of the shift in liability for fraud losses if SCA is not applied.

For corporate development investments: attractive valuations of certain FinTechs may prompt strategic investments in niche spaces. Merchant acquirers and open banking infrastructure providers in the UK and European markets are particularly attractive targets for consolidation in the payments industry.

Overall, regulators are actively shaping the future of payments. Industry stakeholders must proactively respond to regulatory changes while seeking strategic advantages in this evolving landscape. The digital euro, in particular, represents a monumental development that demands attention and careful consideration as it reshapes the payments ecosystem.

Payment acceptance is evolving quickly

Payments acceptance infrastructure is changing with the integration of payments with software platforms, the convergence of offline-online offerings, and the acceleration of new POS and orchestration solutions.

We are seeing increased vertical integration between Independent Software Vendors (ISVs) and payment providers. Bundled offerings have become commonplace in the US and are now increasing in the UK and, to a lesser extent, in continental Europe. PSPs have adopted different strategies to address this trend, with some servicing this need with products optimised for ISV distribution (for example, Adyen, Rapyd), while others have acquired software solutions to support their go-to-market strategy in specific verticals (SumUp, Planet). Previously, online-focused PSPs (for example, Stripe, Viva Wallet, Mollie) have also shifted to “omni-channel” strategies with the launch of their own POS solutions.

SoftPOS infrastructure is gaining traction with the launch of MPoC standards in 2022. More and more PSPs are deploying Smart POS terminals with added functionality. This has the potential to expand the digital payments opportunity, particularly for Micro SMEs and countries with low card infrastructure. In the online space, payment orchestration platforms are becoming more accessible and relevant not just for enterprise clients but also for mid and large corporate segments.

For banks: There is more pressure than ever to have strong technology to service payment needs. Operating models will continue to evolve as banks seek to address proposition gaps and efficiently deliver improved payment services to their customers. More banks will “carve out” or enter into strategic partnerships with leading payment technology providers or risk being disintermediated by PSPs as they extend their reach and product offerings in the market.

For payment service providers: Culturally, PSPs are increasingly looking like fast-moving technology or software companies. Clarity on strategy is critical here, as is a strong understanding of what segments of the market a PSP is targeting and how it differentiates itself. There are potential opportunities for further consolidation, either on existing portfolios or integrating vertically.

For investors: Deal flow has been slower in 2022 and 2023, and valuations are down from previous heights. More opportunities are expected to come for carve-outs, but equally for consolidation both horizontally and vertically. Key to success in M&A will be driving synergies in platforms through consolidation and migration of customers and delivering on product cross-sell.

Read more about 2024: The dawn of a new era in European payments

Original blog

BLOG

HOW E-INVOICING MANDATES IN EUROPE ARE OPENING THE DOORS TO EMBEDDED LENDING

By Mounaim Cortet and Jorrit Penninga

The introduction of e-invoicing mandates in the EU is driving substantial changes in the B2B ecosystem, particularly for SMEs. As e-invoicing becomes the standard, SMEs will increasingly adopt software to manage various business processes, including contracting, invoicing and payment. This is enhancing the availability and accessibility of valuable, authentic and certified data on B2B transactions, unlocking opportunities for embedded lending. Traditional players and fintechs alike need to adapt by providing innovative financing solutions and forming partnerships that capitalise on the data generated by e-invoicing.

E-invoicing
A game changer for SMEs

Many European Union (EU) countries are introducing mandates for business-to-business (B2B) e-invoicing, following the lead of Italy which did so in 2019. For example, mandates will come into force in both France and Belgium in 2026. As a result, small and medium-sized enterprises (SMEs) will be required to use software solutions for e-invoicing. This creates significant potential for e-invoicing providers such as vendors of accounting software, order-to-cash/procure-to-pay software and enterprise resource planning (ERP) software.

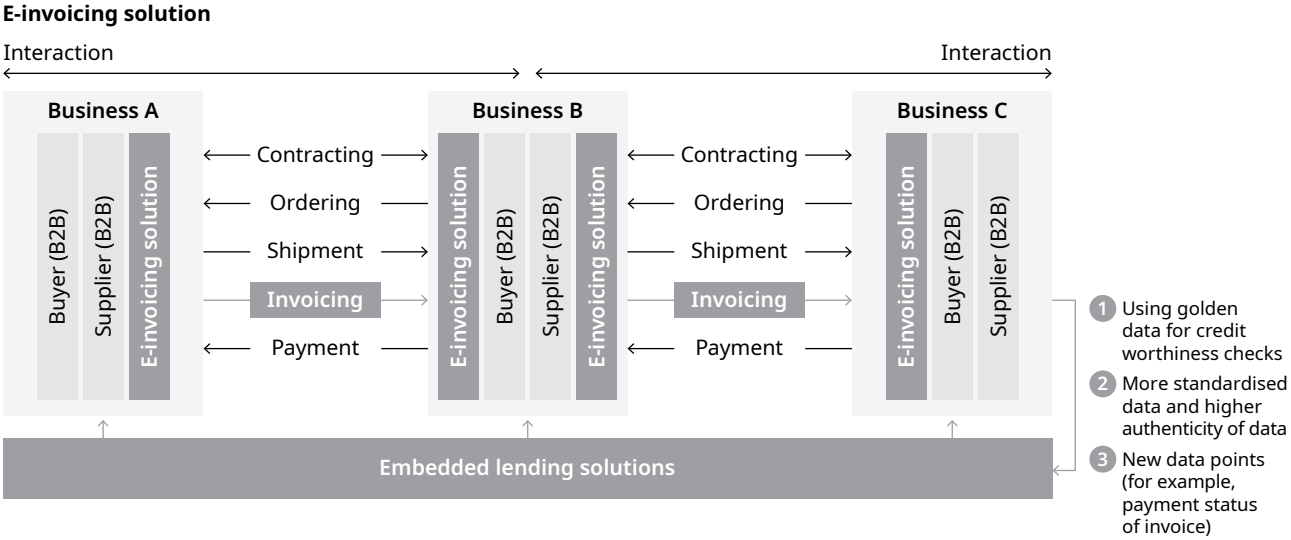
Data availability and accessibility fuels embedded lending

Delivery, invoicing and payment are decoupled in time in B2B trade interactions, with payment typically due after 30 days. This can create cashflow problems for sellers, for example in sectors with seasonal demand. Therefore, effectively managing working capital is one of the most pressing concerns for SMEs.

Financing solutions such as factoring and supply chain finance can help SMEs to manage their working capital needs to some extent. These traditional financing solutions — which are more relevant for the sell side of the business — also present significant disadvantages for SMEs. For instance, access to factoring and supply chain finance is often limited due to complex creditworthiness assessments and high fees. Additionally, these solutions require substantial administrative effort and can lead to a loss of control over the SME's relationships with buyers and suppliers.

The increased availability of standardised data resulting from e-invoicing offers a promising opportunity to address these disadvantages with embedded lending (see figure). After all, e-invoicing improves the authenticity of invoice data — particularly in countries like France, where government-certified e-invoicing providers (PDPs) must be used. Additionally, new relevant data will become available, including invoice status (accepted/rejected), payment status (approved, paid), transaction history and customer preferences.

Exhibit 1: How data from e-invoicing can be leveraged for embedded lending solutions



Source: INNOPAY analysis

Individual invoices can become high-quality collateral when there is minimal uncertainty about their existence and payment status. To facilitate embedded lending, this “golden data” obtained from e-invoicing providers can be leveraged for risk assessments, for example.

Traditional players need to redefine their position and offering

Ultimately, SMEs will seek the most convenient “one-stop-shop” solution for e-invoicing — one that encompasses all services related to B2B interactions, including contracting, ordering, shipping, invoicing and payment (see figure). As the opportunities for embedded lending grow, e-invoicing providers are well placed to expand their financing options beyond traditional solutions, and offer SMEs improved solutions for managing working capital for both the sell side and the buy side of their business. Meanwhile, traditional financing providers such as banks and factoring companies will thus be facing increased competition. This could disrupt their existing relationships with SMEs.

To remain competitive, traditional players should consider the following actions:

- Explore strategic partnerships: Identify potential collaborations with e-invoicing providers to enhance their relevance, value add and reach to SME clients. E-invoicing providers benefit from this strategic partnership as it provides opportunities to become the one-stop-shop solution for their customers, by seamlessly integrating lending propositions into their software solutions.
- Improve financing products: innovate existing creditworthiness assessments and minimise the administrative burden for SMEs to onboard for financing products.
- Expand their role in the ecosystem: Consider diversifying their role in the e-invoicing ecosystem to strengthen their position in SME financing. For example they could move beyond strategic partnerships and establish themselves as an e-invoicing provider. There are numerous examples of banks that are integrating e-invoicing solutions through M&A or strategic investments (for example, Credit Agricole & Kolecto or BPIFrance & iPaidThat).

How e-invoicing mandates in Europe are opening the doors to embedded lending

Original blog

BLOG

BRIDGING THE CASH FLOW GAP

How SMEs can overcome liquidity challenges

By Shikko Nijland and Paul Keiser

For small and medium-sized enterprises (SMEs), cash flow is the lifeblood of operations. However, liquidity challenges remain a persistent issue, affecting growth, stability and even survival. Studies show that over 60% of SMEs struggle with cash flow gaps, largely due to delayed payments, seasonal demand fluctuations or unexpected expenses. The good news? Solutions are within reach, and a proactive approach to liquidity management can make all the difference.

Understanding liquidity challenges

SMEs face unique hurdles in maintaining a steady cash flow situation. Common challenges include:

- Delayed payments: Long payment cycles (for example, 30, 60 or even 90 days) can create significant gaps between revenue inflow and operational expenses.
- Seasonal fluctuations: Businesses in industries like retail or agriculture often experience revenue spikes during peak periods but are financially stretched in their off-seasons.
- Unexpected costs: Unplanned expenses, such as equipment breakdowns or supplier price hikes, can derail even the most carefully planned budgets.

The result? Missed opportunities for growth, strained relationships with suppliers and, in some cases, insolvency.

Practical steps to bridge the cash flow gap

To address liquidity challenges, SMEs should adopt strategies that promote flexibility, resilience and efficiency. Here are three actionable steps to bridge the cash flow gap:

1. Streamline receivables and payables

Efficient invoicing and payment processes are crucial for managing liquidity. Tools such as automated invoicing software can reduce delays, while clear payment terms and follow-ups ensure faster collections. For example: A service-based SME implemented e-invoicing and reduced payment cycles by 25%

Tip: Encourage early payments by offering clients small discounts or incentives

Opportunities created by European legislation

The European Union's push for mandatory e-invoicing is a game changer for SMEs, offering both challenges and opportunities. Following Italy's successful implementation in 2019, countries including France and Belgium are set to follow suit for B2B transactions starting in 2026.

Here's how SMEs can benefit from this shift:

- **Standardised and reliable data:**
  E-invoicing ensures authenticity and accuracy in invoices, minimizing disputes and delays. This creates a stronger foundation for cash flow predictability.
- **Faster payment cycles:**
  Automated invoicing can reduce the time it takes to send, receive and process payments, accelerating cash flow.
- **Access to new financing options:**
  With standardised invoice data, SMEs can unlock innovative financing solutions like embedded lending. High-quality, real-time data from e-invoices reduces risk for lenders, allowing SMEs to secure funding more quickly and affordably.

For example: SMEs can use e-invoicing data to access working capital loans against approved but unpaid invoices, ensuring cash flow without the need for traditional collateral.

By embracing e-invoicing early, SMEs not only ensure compliance with legislation, but also gain a competitive edge by leveraging the financial opportunities it creates.

2. Leverage flexible financing options

Traditional financing solutions like factoring and supply chain finance have long been used to address liquidity gaps. However, these come with drawbacks such as high costs, a greater administrative burden and potential loss of control. An emerging solution is to leverage tools like embedded lending, which seamlessly integrates financing into the invoicing process.

Case study: A small retailer facing seasonal demand spikes used e-invoicing data to secure a short-term loan for inventory purchases, making it easier to maintain a steady cash flow throughout the year

3. Embrace technology for holistic liquidity management

Integrated solutions, such as combining e-invoicing with liquidity tools, are the future of cash flow management. By leveraging data from invoicing, payments and transactions, SMEs can make informed financial decisions and unlock additional financing opportunities.

For example, by integrating e-invoicing with payment tracking tools, an SME gained real-time visibility into receivables and improved cash flow forecasting

Seize the opportunity

European e-invoicing mandates represent more than a compliance requirement; they're a stepping stone to stronger liquidity management for SMEs. By adopting e-invoicing early, exploring innovative financing options and streamlining their cash flow processes, SMEs can turn liquidity challenges into opportunities for growth and resilience.

Stay tuned for the next blog in our series, when we will explore the future of liquidity management and how integrated solutions are shaping the SME landscape.

Read more about bridging the cash flow gap: how SMEs can overcome liquidity challenges

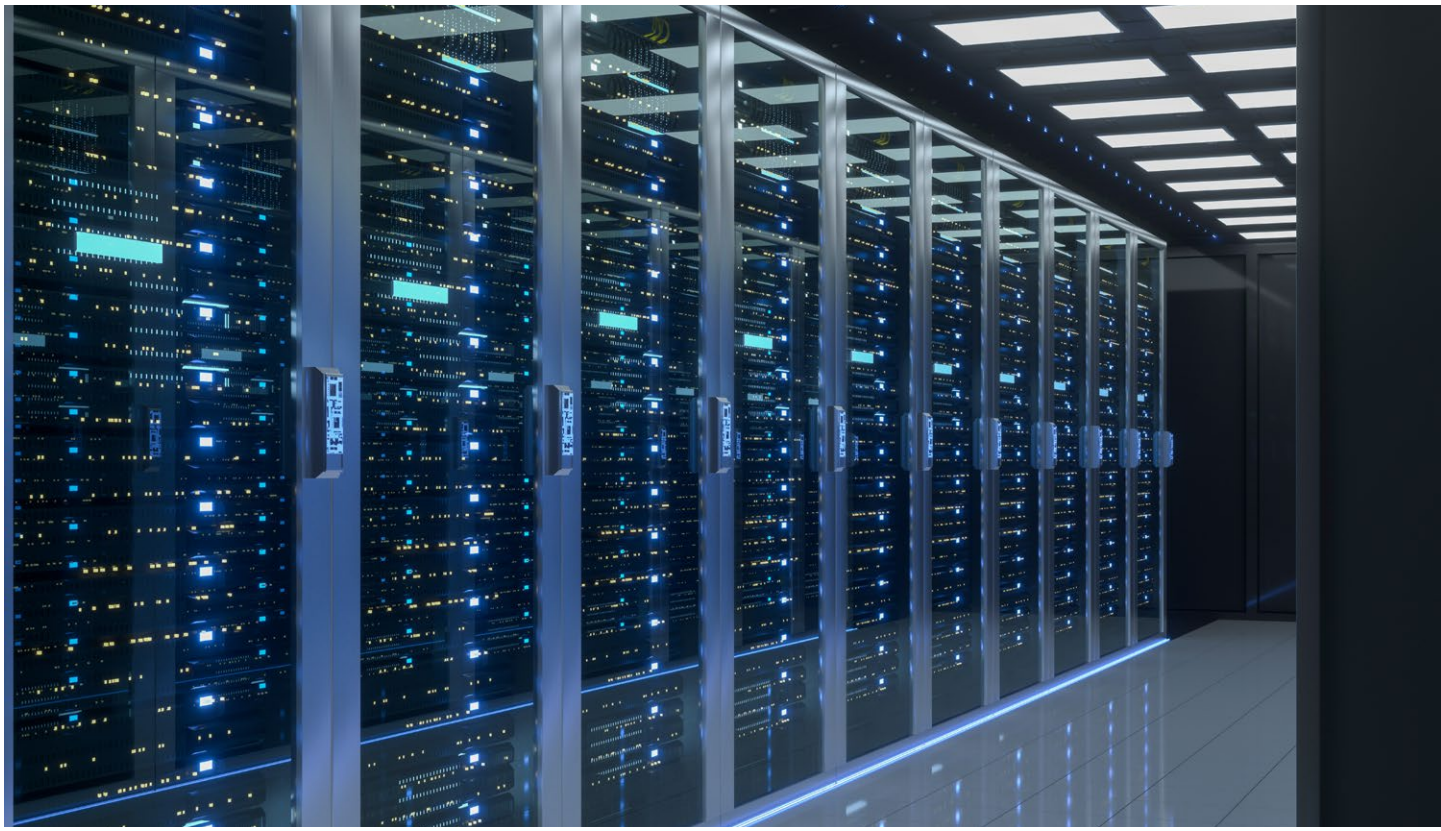
Original blog

BLOG

NAVIGATING THE DATA ECONOMY

Key considerations for decision-makers in banking

By Mounaim Cortet, Douwe Lycklama and Pepijn Groen



In an article written by INNOPAY and recently published in Journal Payments Strategy and Systems (JPSS), the opportunities arising from FiDA, eIDAS2 and Data Acts are analysed, providing strategic considerations and key next steps for banks navigating the data economy. Here, we highlight six key points from the article to help banks prepare for tomorrow.

The PSD2 and Open Banking movement has enabled innovative consumer use cases and sparked technological upgrades of the financial sector through the introduction of API technology. This enabled third parties to develop innovative services on top of existing banking infrastructure, intensifying competition within the banking and payment sectors for specific financial products and client segments. While banks have primarily approached PSD2 as a compliance-driven project, it is these third parties that are generating new value and enhancing customer relevance. Through new regulatory reforms such as PSR, FiDA, and eIDAS access to banking data infrastructure will be significantly expanded, compelling banks to enhance their digital capabilities while navigating increased regulatory requirements. Banks need to start preparing today to be better able to serve their customers and their ever-evolving data needs tomorrow. So which considerations should they bear in mind?

Below are the 6 key points from the JPSS article:

- **Providing data access by banks (under PSD2) has largely been a compliance first strategy:** Open Banking, initiated by PSD2, has introduced API technology that allows third-party providers to build services on existing banking infrastructures. This has intensified competition in the banking and payments space, with third parties generating new value and customer relevance on top of banking infrastructure while banks face further disintermediation and bearing the costs.
- **Regulatory reforms will further drive investments for banks to develop new capabilities.** FiDA, eIDAS 2.0 and PSR will require banks to invest in upgrading their data infrastructure to ensure compliance. However, these regulations will also offer a robust set of tools, such as APIs, the EUDI Wallet, and permission dashboards, that banks can leverage to create new data-driven, customer-centric solutions. In Exhibit 1 the evolution of banking data access infrastructure is illustrated.
- **FiDA will lead to innovative use cases and new avenues for banks to capitalize on assets:** The upcoming FiDA regulation builds upon PSD2 but will extend data access to a broader range of financial data (for example, savings, investments, lending, mortgages, insurance) to support advanced financial use cases (for example, better and more holistic personal finance advice, better product comparison and switching). Customers will be provided greater control over their data through tools like permission dashboards.
  For banks pursuing a more offensive strategy "beyond compliance', it will open new avenues for partnerships and business models (for example, by monetization of premium APIs).
- **The EUDI wallet lowers costs and leverages bank's customer data:** The revised eIDAS framework, which introduces the European Digital Identity Wallet (EUDIW) ecosystem, mandates that banks must accept the digital wallet for identification and authentication purposes. The wallet will be offered with a high level of assurance, making it suitable for banks' onboarding and KYC procedures, potentially reducing associated costs. Additionally, banks can establish themselves in the ecosystem as issuers of credentials within digital wallets. This allows their customers to utilize these credentials to access digital services in third-party contexts, such as using a bank-issued income statement to demonstrate creditworthiness to a tennant.
- **Banks should consider strategic opportunities beyond compliance to maximize return on investments:** Instead of merely complying with forthcoming regulations like PSD3/PSR, FiDA, and eIDAS2.0 banks should focus on securing their future relevance by looking beyond short-term regulatory compliance and ROI. The key to this is exploring new use cases that leverage customer data and tools — such as permission dashboards — across various new emerging data sharing ecosystems. An overview of strategic directions and key actions for banks to navigate the data economy are presented in Exhibit 2.

Exhibit 1: Evolution banking data access infrastructure

		Regulations:	PSD2/3, PSR	FiDA	eIDAS 2.0	Data Acts[1]
Customers:	Paper	Digital	Open banking	Open finance	Digital identity and trust services	Data ecosystems
			Embedded finance			
Corporates		• SWIFT network • Host-to-host (H2H) • Mobile/web	• BaaS APIs • AISPs	• FISPs • Permissions dashboard	EUDIW for legal entities[2]	EUDIW/ Custodian
SME		• Host-to-host (H2H) • Mobile/web	• BaaS APIs • AISPs	• FISPs • Permissions dashboard	EUDIW for legal entities[2]	EUDIW/ Custodian
Retail		• Mobile/web	• BaaS APIs • AISPs	• FISPs • Permissions dashboard	EUDIW for natural persons[2]	EUDIW/ Custodian

Time

1. This includes data act, digitial markets act, data governance act 2. This includes natural persons acting on behalf of their legal entity

Source: INNOPAY analysis

Exhibit 2: Strategic directions and key actions

	Compliance	Beyond compliance
Bank as data user	• **Prepare accepting EUDI Wallet:** Start preparing mandatory acceptance of the EUDI Wallet as means for identification and authentication process (for example, customer onboarding, log-in)	• **Advance open finance:** Develop Open Finance products and services by leveraging FIDA data in the role of FISP • **Explore other eIDAS ecosystem roles:** Explore benefits of use cases beyond compliance for identity services offered under eIDAS 2.0, such as Qualified Electronic Signatures (QES) for signing financial documents remotely. And use of eIDAS-qualified eID schemes to ensure Strong Customer Authentication (SCA)
Bank as data holder	• **Extend API suite:** Take necessary measures for becoming FIDA compliant, that is, extend API suite to cover financial data in scope and participate in (creation of) data access schemes • **Implement permission dashboard:** Implement permission dashboard functionality under FIDA in close alignment with PSR requirements	• **Enrich permission dashboard:** Offer richer functionality in the permission dashboard, that is, for Open Banking and FIDA use cases, with potential further extension to relevant role as Data Custodian • **Leverage bank data assets:** Create innovative data-driven use cases by utilising bank data assets, including the issuance of eIDAS credentials for static data and APIs for dynamic data

Source: INNOPAY analysis

- **Banks should acknowledge their position as trust anchor in data economy in the role of "data custodians" :** The European vision of data sovereignty, supported by regulatory reforms, aims to enhance data sharing across sectors. To bring this vision to life, a permission dashboard is essential, enabling customers to control who has access to their data. Banks are uniquely positioned to serve as Data Custodians in customer's everyday life by providing them secure tools to handle data access requests and manage their permissions.

In conclusion, bank executives at any bank wishing to participate successfully in the data economy will need to critically review their digital strategy, approach to partnerships and industry collaboration as well as their capabilities. They should recognize that putting customers in control of their money and data is imperative for future strategic and commercial relevance. Ultimately this approach will unlock new value and help banks to secure their future in the data economy.

Read more about Navigating the data economy: Key considerations for decision-makers in banking

Original blog

BLOG

THE INSTANT PAYMENTS REGULATION

Key initiatives and changes

By Linda Geux and Tim Gillieron

The Instant Payments Regulation (IPR), which entered into force on 8 April 2024, will have consequences for all payment service providers offering SEPA payments, both inside and outside of the Eurozone. In this blog, INNOPAY's Linda Geux, Martine Nau and Tim Gillieron highlight six key areas affected by the IPR. The authors explore the broader implications of IPR to help market participants navigate the new requirements.

Now that the IPR has officially entered into force (on 8 April 2024), instant payments — sending and receiving payments around the clock (24/7/365), with funds available for use on the payee's bank account within maximum 10 seconds — will officially become a regulatory requirement for all payment service providers (PSPs) offering SEPA credit transfer payments. PSPs located in the Eurozone will be required to offer the receiving of instant payments (IPs) as of 9 January 2025, and the sending of IPs as of 9 October 2025. PSPs in Member States outside the Eurozone will need to offer the sending and receiving of IPs by 9 July 2027 at the latest.

6 key areas affected by IPR

So what have been the key areas affected by the IPR since the publication of the voluntary Instant SEPA Credit Transfer (SCT Inst) rulebook in 2017? And what will be the implications of the IPR for market participants? Exhibit 1 summarises the six key areas affected by IPR.

Expanded scope of financial institutions regulated by IPR

In the 2022 draft regulation, receiving and sending SCT Inst only applied to bank PSPs (credit institutions). With the final IPR, this scope has been broadened to include non-bank PSPs like payment institutions (PIs), including issuers and acquirers, and electronic money institutions (EMIs).

To establish a level playing field, PIs and EMIs will have the option to gain direct access to payment systems for clearing and settlement and to safeguard funds directly at the central bank.

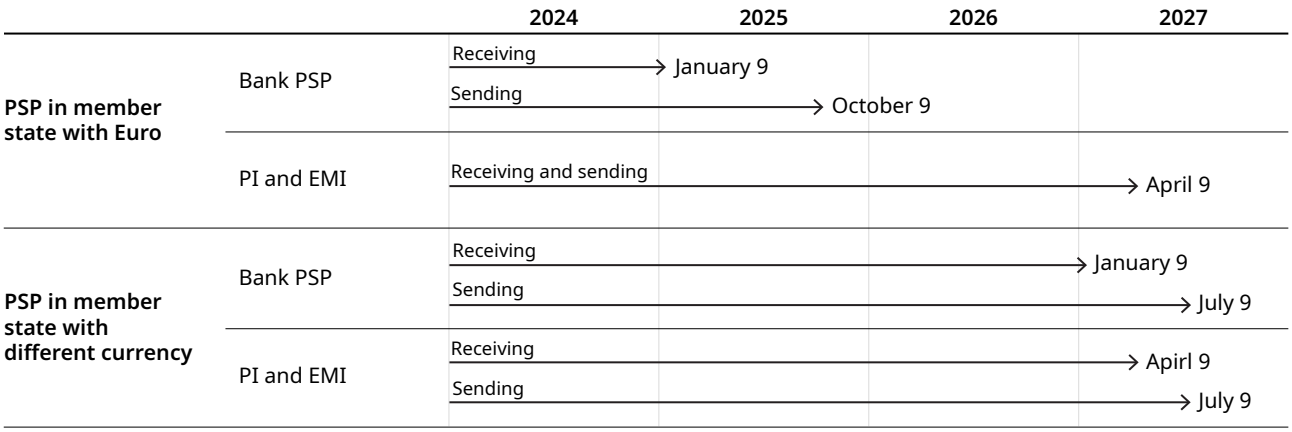
This will enable PIs and EMIs to leverage IP infrastructures, compete with traditional banks and participate in accelerating the uptake of instant payments through their own innovative offerings. As these institutions have only recently been added to the IPR, they are granted an extended timeline (see Exhibit 2).

Exhibit 1: Changes in the instant payment landscape since 2017

		SCT Instant Rulebook 2017	IPR proposal 2022	IPR 2024
1	**Scope financial institutions**	PSP	PSP	PSP, EMI, PI
2	**Geographical scope**	Voluntary for all SEPA countries	Mandatory for EU member states, (EEA)[1]	Mandatory for EU member states, (EEA)[1]
3	**Fraud reduction**	Unique identifier	Verification of Payee	Verification of Payee[2]
4	**Sanctions screening**	Per-transaction sanctions screening	At least daily sanctions screening	At least daily sanctions screening
5	**Use cases**	P2P, C2B	P2P, C2B	P2P, C2B, B2B
6	**Pricing**	PSP to decide on pricing	SCT instant charges not higher than SCT	SCT instant charges not higher than SCT

1. Voluntary compliance to Rulebook for non-EEA/EU SEPA countries 2. Also applicable to regular SCT
Source: INNOPAY analysis

Exhibit 2: Compliance timeline for all PSPs



Source: INNOPAY analysis

Availability of instant payments becomes mandatory across the EU

With the IPR, the European Commission (EC) moves availability of instant payments from voluntary to mandatory for all domestic and cross-border euro transactions across the EU. Moreover, it introduces the same approach, whether the Member State has the euro as currency or not. The rules as set out in the IPR are expected to be adopted in all European Economic Area (EEA) countries as part of the EEA agreement, in line with the objective to create a single European internal market with free movement of capital. Inclusion in the SEPA equivalence requirements for other SEPA countries seems likely in the future. PSPs in a non-euro-zone Member State are granted more time to comply (see Exhibit 2). This will make cross-border transactions involving the euro more seamless, more efficient and a more attractive payment option to customers by reducing transaction times and costs across borders.

Fraud reduction requirements including Verification of Payee

The initial IPR proposal defined the mandated Verification of Payee (VoP), to match the beneficiary's IBAN and name before initiating a transaction (also known as IBAN-name check). This not only stays intact, but the IPR also requires the VoP requirement to apply to regular SEPA credit transfers (SCTs) as well. Additionally, VoP opt-out options for payment service users (PSUs) are significantly reduced to one use case: a PSU that is not a consumer submitting multiple payment orders as a package. The draft PSR will also require implementation of VoP for non-euro transactions in Member States. On top of that, the IPR enables PSUs to define maximum amount thresholds — both per transaction and per day — for SCT Inst transactions.

All the above measures are aimed at reducing fraud in authorised push payments (that is, APP fraud). To elaborate, Surepay, provider of an IBAN-name check solution and market leader in the Netherlands, has seen a decrease in fraudulent transactions of 81% since the introduction of the service in 2017.[1] The above measures also aim to increase consumer trust.

In a previous blog we discussed possible future scenarios in which the VoP market can evolve. The European Payment Council (EPC) is currently developing a VoP rulebook demanding certain standards to ensure interoperability among various VoP solutions.

1 https://www.europeanpaymentscouncil.eu/news-insights/insight/using-cop-mitigate-fraud-and-mistakes-online-payments

Sanctions screening procedures are adjusted to match the nature of IP

EU figures show that up to 10% of all transactions get rejected, of which 99.8% are because of false hits.[2] The <10 seconds processing time stipulated in the IPR will not allow PSPs to conduct decent sanctions screening. Therefore, to prevent an increase in rejected transactions due to false hits in sanctions screening, the EC has moved away from the "per transaction" screening requirement for SCT Inst transactions. Instead, the IPR imposes a periodical (at least daily) screening, and an obliged screening when new targeted financial restrictive measures come into place. This reduces the implementation burden and reduces operational costs for PSPs. By preventing an increase in rejected transactions due to false hits, the IPR also mitigates the negative impact on customer experience.

To ensure that the periodical screening results in effective sanctions screening, PSPs will need to submit an annual report. Based on this, the European Banking Authority (EBA) and Commission will review the impact, leading to a report on the effectiveness and, if relevant, a legislative proposal.

Focus on business-to-business use cases

The IPR demands the implementation of SCT Inst capabilities across all channels that currently also facilitate regular SCTs, including bulk payments. This means that the IPR is expanding its focus beyond obvious peer-to-peer (P2P) and customer-to-business (C2B) use cases, like sending a payment request to a friend or paying a bill as a customer. PSPs will only need to provide SCT Inst services if they offer a similar service for regular SCTs.

Bulk payments, often sent by corporates via file-based transfers, can now be settled instantly without additional costs. PSPs must accept these batches, unpack them and convert them into a single IP. While this offers a chance to increase volume on IP rails, it may also require PSPs to modify corporate customer interfaces and increase their processing capabilities, impacting today's pricing structures for bulk payments.

Pricing

The IPR requires financial institutions to ensure that the fees they apply for SCT Inst transactions do not exceed any fees for corresponding regular SCT transactions. This has an impact on current business models of PSPs. On the one hand, PSPs are no longer allowed to offer IP as a premium service to their customers, making it challenging for PSPs to earn back investments regarding IP. In some markets, such as Germany, surcharges for IP are currently a common practice. On the other hand, the IPR enables PSPs to realise new additional services for which extra fees set by PSPs are allowed.

Conclusion

The IPR will have profound impact on the payments landscape due to its increased scope along the geographical, institutional and use case axes. The rules set out in this regulation around fees, fraud prevention and sanctions screening present compliance obligations and implementation and business-related challenges for PSPs. Moreover, the upside of some requirements — such as the necessity of having bulk payments converted into a single IP — may not always be clear. On the other hand, the IPR creates opportunities for PSPs, including in the shape of new services to be developed and potential new revenue streams to be opened up.

2 https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52022SC0546

Read more about the instant payments regulation key initiatives and changes

Original blog

BLOG

A SHIFT IN FOCUS

Business Identity at the Forefront of Digital Identity Discussions during the DICE UnConference

By Douwe Lycklama, Beau Schellekens, and Jeroen van der Hoeven

"We don't talk about legal entities today, only about natural persons," stated one speaker, immediately setting the tone at the DICE UnConference Europe 2024. INNOPAY's Douwe, Beau and Jeroen were present at the event. Here, they report on their findings regarding the evolving digital identity landscape.

There was a notable shift in focus at this year's event. Last year's DICE UnConference was dominated by discussions on interoperability and the selection of standards for the development of the European Digital Identity Wallet (EUDIW) and the Swiss e-ID Act. Back then, those foundational topics were crucial as the industry grappled with the technical and regulatory challenges of establishing robust digital identity systems. Whereas those previous discussions were heavily focused on interoperability and standards, there was a wider variety of sessions this year. This change signals a growing understanding within the community that digital identity extends beyond foundational technical matters.

Unexplored territories: Exploring the relevance of digital business identity solutions

One significant observation from last year's discussions was the relatively unexplored domain of how businesses and individuals acting on behalf of a business identify themselves in external interactions. As digital identity systems evolve, the focus has largely been on natural persons, leaving a gap in the conversation around business-to-business (B2B) digital identity systems.

Despite the consensus echoed by the statement prioritising identity developments for natural persons over legal entities, we were pleased to see increased traction this year in the domain of business identity and legal entity wallets. Several sessions were dedicated to exploring these critical areas, with notable examples including discussions led by the Global Legal Entity Identifier Foundation (GLEIF), Company Passport (an initiative of the Dutch Blockchain Coalition) and the EU Digital Identity Wallet Consortium (EWC). These and various other innovative sessions highlighted the growing importance of robust business identity solutions in the digital ecosystem.

INNOPAY actively contributed to this dialogue by hosting multiple sessions focused on business identity ecosystems. Our sessions delved into the governance of trust frameworks and the potential role of Self-Sovereign Identity (SSI) wallets in this context. We aimed to foster a deeper understanding of how business identity solutions can be effectively integrated and managed, ensuring secure and trusted interactions between businesses.

Step by step: How business identity works in practice

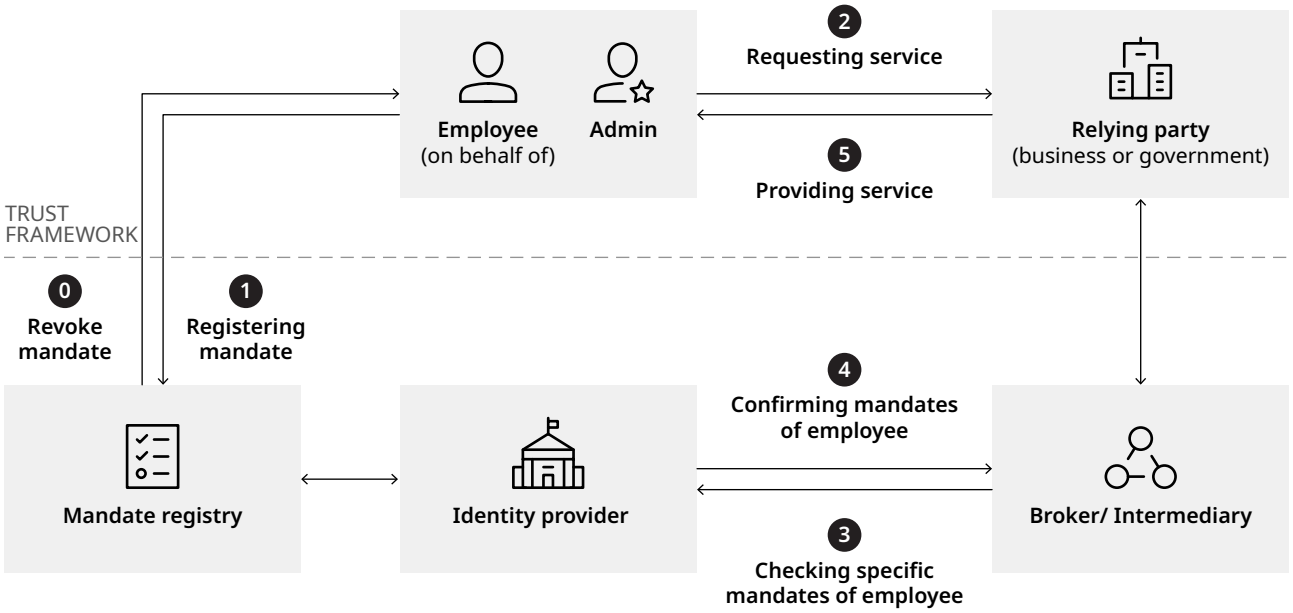
Practical applications of business identity can extend beyond business-to-business (B2B) transactions to also include business-to-government (B2G), business-to-machine (B2M), and machine-to-machine (M2M) transactions. One B2B example is the process of filing taxes, where an authorised internal accountant accesses the tax office's digital portal to facilitate the filing on behalf of a business. The critical question then arises: How can the tax office verify the identity and authorisation of the accountant to conduct tax-related activities on behalf of the business?

The following step-by-step guide illustrates how an exemplary solution for business identity works in practice.

Exhibit 3: A simplified overview of the interaction flow in a digital business identity system with mandate registries

Established mandate management systems are based on mandate registries as (de-)central place to store and check attributes

Example flow setting up and checking mandates with mandate registries



1 Registering mandate	The admin of the legal entity (a legal representative of the company) registers the legal entity in the trust framework using its unique identifier, for example, Chamber of Commerce number or Legal Entity Identifier (LEI). The Admin then receives admin credentiAls linked to the company. Using the admin credentiAls, the admin grants specific rights (or authorisations) through mandates to the employee, documenting these mandates in a mandate registry. The mandate registry functions as a comprehensive list of authorised services within the trust framework, detailing who is authorised to access which services on behalf of a given business. There can be multiple, decentralised mandate registries within a trust framework.
2 Requesting service	After the employee of the legal entity has been successfully assigned a mandate in the mandate registry, the employee requests a service from the relying party, identifying with personal credentials.
3 Checking specific mandates of employee	Based on the identification credentials of the employee, the relying party initiates the system's verification process to confirm whether the employee is authorised to act on behalf of the legal entity for the requested services.
4 Confirming mandates of employee	If the individual to which the credential belongs is authorised by the legal entity to perform the specific service requested (on behalf of the legal entity), the system replies.
5 Providing service	The relying party grants or denies access to the requested services, according to the obtained reply.

Note: This is an indicative overview. There are several ways to depict the B2B digital identity ecosystem. Roles can be multiple and interoperable.

Source: DICE 2024 — Business Identity. June 2024 © INNOPAY BV. All rights reserved.

The strength of this ecosystem, compared to bilateral agreements between businesses, is its efficiency and simplicity for the users. Both sides of the market benefit from the Trust Framework, which includes an elaborate set of rules and agreements fostering efficiency, scale, standardisation, and security in sharing data across the ecosystem. For legal entities, streamlined processes eliminate the burden of excessive paperwork and extensive procedures. For example, a legal entity registers an Employee once and the Admin can easily document and change mandates in the registry on an ongoing basis. Simultaneously, the Relying Party can mitigate risks from transactions with unauthorised counterparties, benefiting from early checks embedded in the legal entity's registration and employee authorisation processes.

Unlocking the potential of business identity ecosystems: An example

A business identity ecosystem with bespoke and well define roles (issuers, verifiers, mandate registries, and the like), governed by a solid Trust Framework renders bilateral agreements obsolete. This allows for maximum scaleability and redundancy combined with a complex system with high granularity, that focuses on an extensive number of services across sectors.

One example of a successful implementation of a business identity solution in the Netherlands is eHerkenning (referred to as "eRecognition" in English). This solution based on a Mandate Registry emerged from a public-private initiative in 2010. It currently connects more than 600 organisations, and annually has 13.3 million employee logins coming from virtually all companies in the Netherlands — and this figure is still growing.

Addressing the complex needs: The community is ready

The increased focus on business digital identity that was visible at this year's DICE UnConference in Zurich marks a significant step forward. It reflects the community's readiness to address the complex needs of business interactions in the digital age. The coming of the EUDI Wallet and the Swiss e-ID Act make the creation, implementation and adoption of business identity easier and faster.

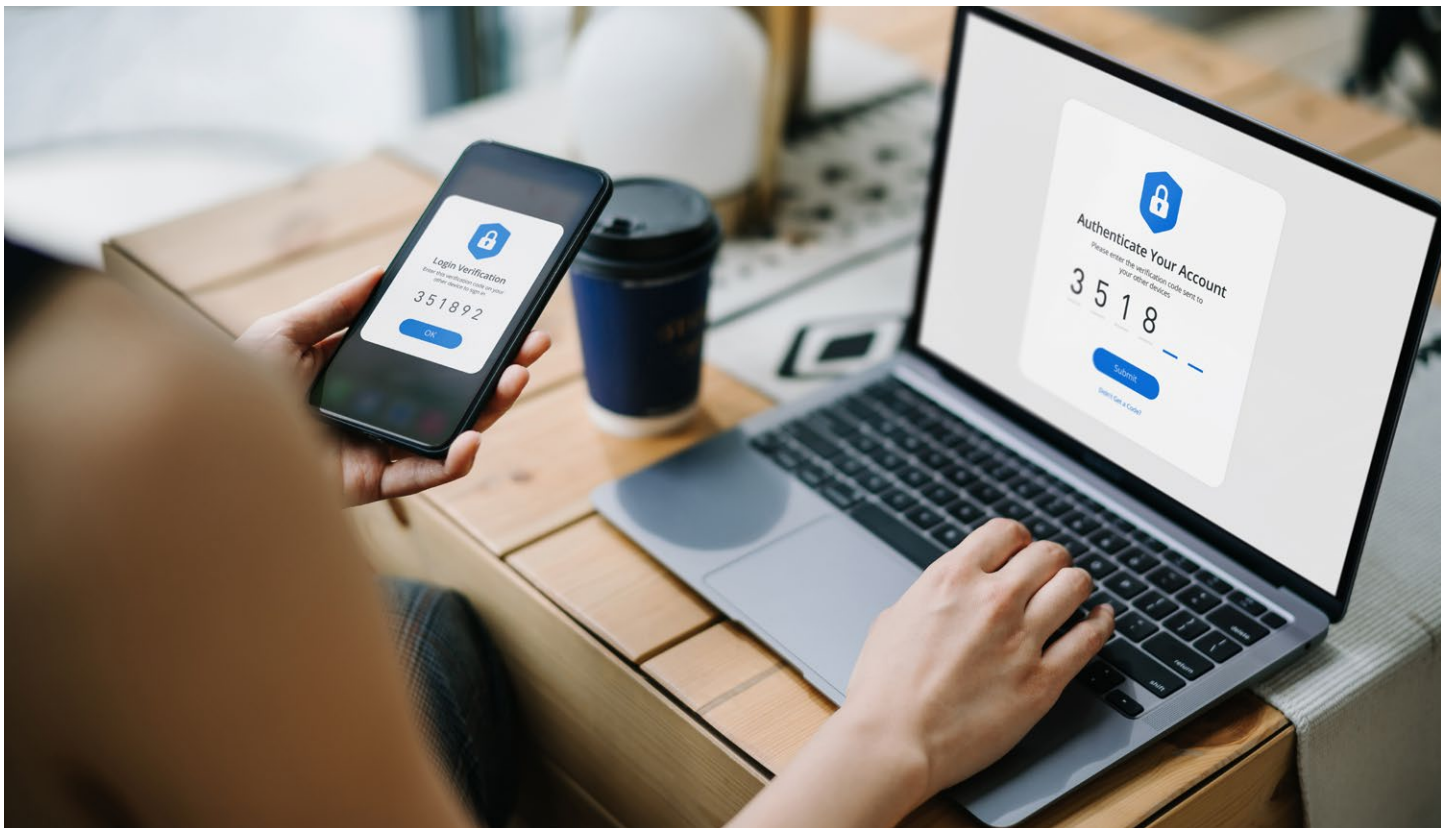
INNOPAY is proud to be at the forefront of these developments, contributing to a more connected and trustworthy digital world. By expanding the focus to include business identity, we are paving the way for more secure and efficient digital interactions across all sectors. In a future publication, we will explore the implementation of Digital Identity Wallets in a business identity ecosystem.

Read more about a shift in focus business identity at the forefront of digital identity discussions during the DICE unconference

Original blog

BLOG

SUMMARY OF INNOPAY'S RESEARCH FOR THE DUTCH MINISTRY OF ECONOMIC AFFAIRS AND CLIMATE POLICY



In June 2024, INNOPAY conducted a comprehensive study to assess the market impact of the Electronic Identification, Authentication and Trust Services (eIDAS) revision on trust services in the Netherlands. eIDAS defines trust services as electronic services that enhance trust in a digital environment. Commissioned by the Dutch Ministry of Economic Affairs and Climate Policy, this study involved desk research and interviews with 19 organisations to understand the economic implications of the proposed eIDAS regulation changes for various trust services.

The initial set of trust services under eIDAS were electronic signatures, seals, timestamps, registered delivery services, and website authentication. The eIDAS revision introduces three new trust services: electronic attestation of attributes, electronic ledgers, and electronic archiving.

Key findings

The study addressed: 1) the expected changes in the usage of trust services due to the eIDAS revision, 2) the impact of these changes on the digital economy, and 3) the associated investment and regulatory costs.

1) Usage of most trust services expected to increase

The usage of most trust services in the Netherlands is expected to increase. In addition, the Dutch market is moving from non-qualified services to qualified services. This trend is being driven by tighter laws and regulations or stricter requirements of involved parties.

QES and (Q)EAAs: The study predicts a significant rise in the use of qualified electronic signatures (QES) and (qualified) electronic attestations of attributes ((Q)EAAs), driven by the introduction of the European Digital Identity Wallet (EUDIW). Adoption of the EUDIW is crucial for the market potential of these services, emphasising the need for clarity about the role of authentic sources, common standards, and interoperability.

QESeals and QWACs: Usage of qualified electronic seals (QESeals) and qualified website authentication certificates (QWACs) is expected to increase, particularly if these services are integrated with the EUDIW and may become mandatory for data sharingunder several European laws.

Uncertainty in usage of other trust services: The impact on usage of qualified electronic archiving (QE-Archiving) and qualified electronic ledgers (QELedgers) remains uncertain, based on the information that is currently available. The eIDAS revision is unlikely to lead to increased usage of qualified electronic timestamps (QE-Timestamps).

2) Market shift and new business models

Market consolidation: The eIDAS revision is expected to open up the European market for trust services. It may also lead to market consolidation because larger trust service providers will benefit from economies of scale. Harmonised supervision is vital for ensuring fair competition.

New business models: The revision creates new business opportunities for providers of trust services, such as issuing signature certificates “free of charge” to citizens in connection with the EUDIW. There are multiple business models around issuing electronic attestation of attributes.

3) Regulatory pressure and costs will rise

The eIDAS revision imposes additional requirements on trust service providers, raising regulatory pressure and compliance costs. Smaller providers and new entrants will be most affected by these changes. Despite the increased costs, market adaptation costs are not expected to be disproportionately high, and most of these costs correlate with higher turnover.

Recommendations

To capitalise on the opportunities presented by the eIDAS revision, INNOPAY advises the Dutch government to:

- Formulate comprehensive policies on trust services and provide clear direction and vision to the market.
- Actively contribute to creating the necessary conditions for the success of the EUDIW.
- Invest in effective communication strategies to raise awareness and understanding of trust services among the public and private sectors.

Conclusion

The eIDAS revision presents both opportunities and challenges for trust services in the Netherlands. While it promises increased usage and new revenue streams, it also demands higher regulatory compliance and could lead to market consolidation. Active involvement from the Dutch Ministry of Economic Affairs and Climate Policy will be crucial in harnessing these opportunities and ensuring a thriving market for trust services in the digital economy.

Read more about Summary of INNOPAY's research for the Dutch Ministry of Economic Affairs and Climate Policy

Full report

BLOG

UNLEASH INNOVATION THROUGH DIGITAL SUSTAINABILITY

By Mariane ter Veen

In the picturesque town of Bled, Slovenia, a transformative vision for the future was shared at a high-profile conference. Mariane ter Veen, a renowned thought leader in digital sustainability, presented her insights on how the digital transition and the sustainability transition are intertwined. This concept of “twin transition” can serve as a blueprint for more sustainable organizations and societies.

In her keynote address, Mariane highlighted the growing pressure on organizations to become both more digital and more sustainable simultaneously. She has noticed that this concept of “twin transition” is increasingly at risk of being interpreted too narrowly. It is sometimes reduced to the quest for that sweetspot were “tech” and “green” meet, just focussing on the “environmental” sustainability. But this dual transition is not merely about compliance or keeping up with trends; it’s about ensuring that digital transformation drives truly sustainable outcomes, encompasses a societal, economic and environmental focus, and creates a synergistic effect that propels innovation forward.

Unveiling digital sustainability

INNOPAY — an international consulting firm specialized in digital transactions — is a leading pioneer in this arena and has wholeheartedly embraced the twin transition. As Director and Lead Data Sharing at INNOPAY, Mariane introduced the concept of digital sustainability to the diverse audience of stakeholders as a strategy that can act as a North Star towards unleashing innovation. “Digital sustainability will help you navigate the dual transition, offering hands-on guidance and concrete steps to tackle this journey while keeping a clear focus on innovation,” she stated.

Mariane went on to highlight the European Union’s data strategy, which aims to make the EU a leader in a data-driven yet human-centric society by creating a single market for data. This strategy facilitates the free flow of data across sectors, benefiting organizations and people alike. It introduces the concept of “data spaces’, which will make more data available for use in the economy and society, while keeping the companies and individuals who generate the data in control. “These EU developments are pivotal,” Mariane commented. “Creating a federated, decentralized data ecosystem within specific application domains, based on shared policies and rules, is essential for fostering innovation and ensuring sovereignty.”

Global developments show needle moving towards digital sustainability

The COVID-19 pandemic and recent geopolitical events, such as the Russian aggression in Ukraine, have starkly revealed the vulnerabilities in global supply chains. Organizations are aware of not only their own dependencies on specific countries of production, but also of their suppliers’ dependencies. “Efficiency, while crucial, is not the only North Star for economic progress,” Mariane emphasized. “The pandemic exposed the brittle nature of our supply chains and underscored the need for resilience and sovereignty.”

This is not a Europe-only realization. While the EU is executing on the data strategy, in the US a whole-of-government approach can be discerned, aligning anti-trust, industry policy and digital trade. It is embracing responsibility for “public interest” issues on inequality, data privacy, data protection and democracy. As US trade representative Katherine Tai is quoted saying: “Consumers appear to be workers too — they need jobs, so if we impoverish consumers as workers, it doesn’t work.”

Data spaces
The bridge to digital sustainability

Besides that, there is an increasing awareness about the lack of public governance over society’s information infrastructure, which is currently in the hands of a few large private corporates. There is a clear need for debate to improve the public/private nature of that infrastructure. Mariane argued how data spaces, in effect, form part of a public/private infrastructure on which organizations can build their propositions.

She went on to explain how data spaces embody the principles of generating long-term value, transparency, and equity. “Equity doesn’t necessarily imply monetary value,” Mariane clarified. “It’s about transparency and ensuring that people and

businesses understand the trade-offs they engage in when exchanging their data for services or products. This could mean enhancing innovation capacity."

Data plays a pivotal role in this ecosystem. It holds the key to better decision-making and trust-building. However, without fair access to data or if data is monetized without consent, the value created doesn't fairly benefit all stakeholders. "Whereas the GDPR focuses on preventing "misuse" of data, the data strategy and data spaces focus on preventing "missed use'. It's about stimulating data sharing in a sovereign way, ensuring people and organizations control the data they generate," Mariane continued.

Best practices and next steps

To illustrate the practical application of these principles, Mariane shared three data-sharing best practices from the Netherlands that drive innovation. The case studies demonstrated how organizations could effectively leverage data to create sustainable and innovative solutions.

Concluding the presentation, Mariane provided a seven-step model to help organizations get started on data sharing in a digitally sustainable manner:

- **Create awareness internally:** Ensure that everyone within the organization understands the importance of digital sustainability and the twin transition.
- **Evaluate your internal capabilities:** Assess your current digital and sustainability capabilities to identify strengths and areas for improvement.
- **Optimize your systems and processes:** Enhance existing systems and processes to support sustainable digital practices.
- **Create alignment:** Align your digital and sustainability strategies with your overall business goals and objectives.
- **Review your role in the ecosystem:** Understand your position within the broader ecosystem and how you can contribute to and benefit from it.
- **Provide a user interface:** Develop user-friendly interfaces that facilitate easy access to and use of data.
- **Communicate transparently:** Maintain clear and open communication with all stakeholders about your data practices and sustainability efforts.

As the audience absorbed the comprehensive roadmap, it became evident that the path to digital sustainability is not only achievable, but also imperative. By embracing the twin transition, organizations can unlock a new era of innovation, resilience and sustainability.

Read more about unleash innovation through digital sustainability

Original blog

INTERVIEW

5 QUESTIONS ON DIGITAL SUSTAINABILITY TO...

Wendy Hoenkamp

Many organisations nowadays pride themselves on their sustainability efforts and are keen to position themselves as a sustainable choice. But when the social media channels are dominated by the BigTech platforms, how can organisations truly practice what they preach in their online marketing strategy? According to Wendy Hoenkamp, an independent Dutch marketing communications consultant and self-confessed “marketer with a moral compass,” there is a digitally sustainable alternative.

What kick-started your journey into digitally sustainable marketing?

My parents raised me to have a practical yet planet-minded view of the world. They were scientists but also vegetarians, for example, and in the 1990s we were the first family in the whole neighbourhood to install solar panels. Since then, sustainability has always been a common thread for me: from my master’s degree in new media studies in 2007 — which just happened to be the year of Facebook’s launch — until today.

When I graduated, I decided to be guided by my moral compass, and ever since then I’ve consciously chosen to work only with non-profits or companies that have sustainability, fair trade or some other social objective at the core of their operations. This resulted in various marketing communications projects, including one for Dutch consumer rights organisation Consumentenbond as campaign manager for its privacy-violation lawsuit against Meta/Facebook.

But at the very same time, I was actually spending my other clients’ marketing budgets with Facebook and similar platforms in an attempt to reach as wide an audience as possible for them. That’s when the lightbulb moment occurred for me: on the one hand, many organisations are trying to make the world a

Extending your sustainability efforts to digital marketing gives you a competitive edge

better place, while on the other, they are financially supporting companies that are often completely at odds with their visions and beliefs. So I decided to look for a solution to this conflict of interests for my clients.

What is the current level of awareness of digital sustainability among marketing professionals, and how is this changing?

Although today's marketing professionals are generally very aware of their organisation's ESG-related achievements in general — reducing the carbon footprint in terms of energy consumption, transport and packaging, for example, or protecting workers' rights — it still surprises me how little they think about the impact of their own roles in this context. For example, if they hire an agency, they rarely ask about that agency's ESG performance: topics like sustainable procurement or carbon-neutral hosting, for example. Ideally, such questions should automatically form part of an RFP nowadays. And these are just the basics from a "planet" perspective. Digital sustainability, or what I'd describe as "ethical online marketing," requires them to go a step further even.

Having said that, I've found that it has become easier to have these kinds of conversations since late 2022. Why? That's when Elon Musk bought Twitter! As standards rapidly declined on that platform, people quickly became more aware of its negative aspects, such as the addictiveness, sensationalism, hateful atmosphere and encouragement of polarisation. Numerous people quit the platform and went in search of an alternative, which led to an upswing in the popularity of Mastodon. Nevertheless, most businesses and organisations are still communicating on the BigTech platforms. Apart from a few exceptions, marketing professionals don't yet seem to be questioning whether those platforms actually fit with the mission and vision of their organisation.

What can organisations do to improve the digital sustainability of their marketing communications?

Sustainability-related marketing communication can be broken down into three parts. It starts with "What can you say? In other words, how sustainable is the product or service you're marketing? This is followed by "What do you say?" This is about defining your actual message. The third decision is "Where do you want to say it?" — and this is the aspect that's not yet receiving enough attention. Organisations need to realise that they can — and should — take a holistic approach and make a conscious choice about all three of these aspects. But I'm not suggesting we have to stop using social media altogether. It's about thinking about which platforms are best reconciled with your organisation's social values.

I place the various platforms on a "sliding scale of ethics." I see TikTok as the worst offender, based on concerns about data privacy due to its links to the Chinese regime, plus there also seems to be evidence of "shadow-banning" of disadvantaged groups. Facebook and Instagram are somewhere in the middle, and LinkedIn is currently one of the better options, although still not perfect. Even the perceived "better" alternatives for X, such as BlueSky and Threads, deserve closer examination. For example, BlueSky has venture capitalist backing, and Threads is primarily driven by profit goals rather than ethics. That's why I'm a big fan of Mastodon, which truly is an open, nonprofit, "citizens' social media network." As a federation of servers — each with different rules and priorities — it enables you to select one that closely aligns with your own values. And if you're a larger organisation with sufficient IT capabilities, you can even use its open-source technology to create your own sever. Plus Mastodon supports the principle of "self-determination" by allowing users to take all their followers with them if they decide to move to a different server.

If an organisation decides to start communicating on this platform, it doesn't have to be a drastic step. For instances, you could decide to replace just one BigTech platform with it initially, to give it a try. This also enables you to build up your followers on Mastodon by promoting your new profile in the bio's of your existing social media accounts. And then monitor the metrics for a few months, and fine-tune your goals and strategy as you gain new insights.

Why are organisations hesitant about making the change, and what are the benefits if they do?

Mastodon still has a bit of an image problem as an obscure or "niche" platform, so the main hesitation is the fear of losing their existing followers. While it can't compete with the huge scale of X or Facebook, for instance, you might be surprised to see how many people — and organisations similar to yours — are already active there. After all, the number of Mastodon users has grown from 3.5 million to over 8 million since late 2022 — although that's still only a tiny figure compared to the billions of users on Facebook, of course.

Another concern is about the potential loss of traffic to the organisation's own website. Interestingly however, when the US's National Public Radio took the plunge and left Twitter, it found that traffic to its own website dropped by only a single percentage point. This is because BigTechs like to keep users on their own platforms for as long as possible, so clickable links often open on the platform rather than on your own website. In other words, BigTech platforms aren't usually a great source of organic traffic, so the negative impact of leaving them can be smaller than expected.

Moreover, in the past decade we've seen a shift in the basic principles of reach on social media. Whereas a brand used to have to be creative or unique or lovable or good to get noticed online, today's advertising-based BigTech business models mean that it's now just a matter of money; you can get as much reach as you're willing to pay for. But on Mastodon, it's like stepping back in time; you can't buy reach. However, with a "good" sustainability-related message, you have a distinct advantage. In fact, there are many examples of organisations on Mastodon who have seen tremendous increases in their engagement ratio. Their reach is much lower, of course, but the quality of that reach is much better.

But let's be honest, the benefits of ethical marketing are difficult to quantify in short-term economic gains. Instead, it's about the long-term benefits of choosing a way of working that aligns with your values. Think of the reputational benefits that come from being a trustworthy brand that is leading by example. This in particular is becoming increasingly important as Western consumers — and especially the younger generations — are making conscious, sustainability-driven choices. In fact, this often extends to their choice of employer, so taking an ethical approach can even help you to attract and retain more motivated employees, leading to higher performance. I'm convinced we've almost reached a tipping point. Staying true to your values and extending your sustainability efforts to your digital marketing activities is a relatively easy way for you to benefit from an early-mover advantage and get ahead of the competition, as a building block for long-term success.

Can you share any examples of how digitally sustainable marketing has been put into practice, and what have been the results?

I've recently supported the Dutch Humanistisch Verbond (Humanist Association) in transitioning from X to Mastodon because it is much more closely in line with the organisation's core principles: a humane society based on personal freedoms and diversity, self-determination and empowerment. The biggest surprise was the high level of engagement achieved with some posts, in terms of reposts, likes and comments. Whereas on other platforms we would typically see around 2%, we were suddenly achieving

engagement levels of 50 or 60%! Additionally, the quality of the comments is much higher than on any other medium I know. This has led me to conclude that higher-quality content works particularly well on Mastodon; it's less about sensationalism, and more about meaningful, nuanced and balanced messaging.

At the end of the day, the users themselves hold the power over whether a social media platform is a success or not; in that sense, we get the social media landscape that we "deserve." And I believe we all deserve to at least have an alternative to today's dominant BigTech platforms. That's why I hope to encourage marketing professionals within organisations with any kind of sustainability message to give Mastodon a try, so that we can create a platform for digitally sustainable marketing communications together.

Read more about digital sustainability

Original interview

INTERVIEW

OLIVER WYMAN AND INNOPAY ARE AN EXCELLENT FIT

Interview with Shikko Nijland, CEO and Managing Partner at INNOPAY

INNOPAY has signed an agreement to be acquired by a leading global management consulting firm, Oliver Wyman. The deal is expected to close in the first quarter. “We are delighted to have reached this agreement after an extensive process of intense discussions and careful consideration,” says Shikko Nijland, who will continue to lead INNOPAY after the acquisition.

Together, we concluded that our two companies are an excellent fit, thanks to Oliver Wyman’s global reach and data-led work in payments, in combination with INNOPAY’s unique understanding of digital transactions. We also believe our company cultures are a great fit. With Oliver Wyman’s backing, we will be able to further accelerate our growth and cement our reputation in the realm of digital payments, open finance, digital identity, and data sharing.

What were the driving factors behind the decision to sell the company?

Initially we were looking for strategic partnerships to stay ahead of the curve and be able to leverage our unique consulting propositions within a highly relevant international network. We didn’t intend to sell the company. However, in our first meeting with Oliver Wyman, there was such a natural connection that we both wanted to explore the potential mutual benefits of the “sell” option.

After careful consideration it became clear that joining forces with Oliver Wyman was not just a business transaction, but also a forward-thinking move that will allow us to unlock new potential for our unique consulting propositions — and especially internationally. Ultimately, this decision was driven by our commitment to delivering excellence and pioneering innovation to ensure a stronger and

more resilient future for our clients and our people. Together, we will be poised to tackle the industry's current technology, regulatory and business challenges, and also to explore new frontiers.

This strategic move is not just about combining companies, it's about creating synergies that amplify our impact on the industry

How do you expect the acquisition to affect relationships with INNOPAY's existing clients in the short term?

We will continue to nurture trusted relationships with our clients and our day-to-day support for them will not waiver. We will only have more to offer them in the future and we look forward to our ongoing digital transaction adventure together.

In the longer term, how do you see INNOPAY evolving through the combination with Oliver Wyman?

We anticipate driving our unique propositions and way of innovation to new heights, expanding our service offerings, and venturing into untapped markets. We'll be empowered to take on larger and more ambitious initiatives, serving our clients in their most transformative moments. We anticipate becoming the international go-to partner, particularly in the field of large-scale digital transformations and collaborative scheme development in payments, digital identity, open finance, and data sharing.

How will the INNOPAY leadership team change as a result of the acquisition?

Our full leadership team remains onboard, joined by two Oliver Wyman leaders to drive the way forward together. Jointly with Oliver Wyman's broader team of European payments partners and consultants, we will continue to serve our clients' most important needs.

How do you yourself feel about the acquisition?

The prospect of combining our strengths, resources and expertise fills me with a blend of excitement and optimism, and I am thrilled about the opportunities that this strategic move brings for INNOPAY. Naturally, with any change like this there can be an element of challenge or surprise. However, I am personally committed to ensuring a smooth transition for our teams and clients, with the support and backing of Oliver Wyman. This marks a new chapter for INNOPAY, and I am enthusiastic about the collective potential we are unlocking. It gives me even more confidence in our ability to continue to innovate and lead in the digital transaction industry.

Read more about Oliver Wyman and INNOPAY are an excellent fit

Original interview

INTERVIEW

5 QUESTIONS ON DIGITAL SUSTAINABILITY TO...

Daniel Säuberli, President of DIDAS

Daniel Säuberli is co-founder and president of the Digital Identity and Data Sovereignty Association (DIDAS). This non-profit organisation is working to unlock value for Switzerland by empowering the nation's citizens with sovereign data services and digital identity services. Daniel has spent the last 25 years at the intersection of business strategy and technology, working for multiple organisations — from startups to multinationals. Here, he explains why digital identity is the missing piece of the puzzle in today's digital economy, and encourages businesses to start experimenting now to explore ways of adding real value in their clients' daily digital lives.

How would you define "digital sustainability" and why is it so important?

In one sense, digital sustainability can mean the use of technology to protect and ensure environmental care and responsibility. But at a higher level, I believe digital sustainability is key to future economic viability. As we become increasingly supported by tech, we need to take an increasingly long-term view to ensure that we remain prosperous as a society while adapting to the contexts in which we exist. So it is about building a digital infrastructure today that will remain resilient for the next 10, 20 or 30 years, even though the tech landscape is continuously evolving.

A framework of clearly defined principles — whether on ethical use, governance, social inclusion, or openness and modularity of architectures — agreed on and consented to by stakeholders is exceptionally helpful to provide a solid foundation on which to build. So, in my view, digital sustainability is about creating and maintaining an ecosystem of all the aspects that ensure long-term socioeconomic and environmental value creation.

Importantly, the technology should support the values and be an enabler of aspects such as ESG, rather than the other way round. One example of this is the notorious search for and procurement of ESG data for reporting purposes. Instead, we should

think more fundamentally about how digital trade documentation is enabled and product passport standards can be established, so that ESG reporting becomes a meaningful by-product.

Why was there a need for an organisation like DIDAS in Switzerland?

Switzerland is a sovereign, federally organised direct democracy: an exceptional model that is informed by consensus and free speech at all levels. The values Switzerland is representing are dear to its citizens, and should become even more dear in an increasingly fragmented world. This requires us to think deeply about how these values find their way into the digital fabric and infrastructure that serves our citizens. Furthermore, Switzerland is a turntable for global trade. That role has been the foundation of the nation's prosperity, but unfortunately, we have lagged behind in the digital economy. There has been a worrying lack of awareness within organisations of the importance of digital trade for the future of the Swiss economy. To stay competitive as a country — and to continue to offer our citizens freedom of movement, not only physically but also digitally — we need to become part of the fabric of the global digital economy. Interoperability is absolutely key in this context. Therefore, it is important for Switzerland to develop a framework that works in context with our values, while ensuring digital interoperability makes us a key part of the global ecosystem.

Embedded in processes, digital identity is an enabler for a more trusted and automated world, where the individual is sustainably in control

In early 2021, a proposed digital identity law (the "E-ID Act') was rejected in a national referendum. Around that time, I had come into contact with Vasily Suvorov, a forward-thinker who saw opportunities for tech such as blockchain technology to be an enabling foundation to socioeconomic needs. We were both keen to make a positive contribution to the future of Switzerland's digital economy and he assembled an exceptional group of people to kick this off.

For me personally, the motivating factor was that, as the digital economy had emerged, the people in our generation didn't have a conscious choice; we simply gave all our data away to the platforms and became the "products" of the data economy. I wanted to change that for my children by ensuring that people could control and manage their data in a sustainable way. This is a complex challenge, but thankfully humanity has become good at solving complex problems; as long as you take into account a multitude of perspectives, it's possible to solve pretty much anything. So together, we founded DIDAS: a neutral group of companies, experts, individuals, policymakers and researchers. We are all working on a non-profit basis and without a competitive drive to create foundations for the digitisation of everyday processes and interactions in Switzerland, based on new standards and technologies in line with the principles of Self-Sovereign Identity and trust.

We saw the referendum result as an expression of what Swiss citizens didn't want — there was resistance to the idea of private-sector companies issuing digital identities, for example, and people had concerns about a loss of control and privacy associated with intermediaries tracking online. So, we decided to advocate for a different way of giving them what they do want by adapting and evolving the Self-Sovereign Identity (SSI) framework and principles for tech that would reflect Switzerland's values. Of course, our country has additional complexity due to four languages and cultures, so finding consensus is not always easy, but it is crucial.

What progress has been made in recent years?

Today, DIDAS has approximately 60 corporate members and four major academic institutes within the wider group, amounting to more than a hundred regular contributors. We have become a respected partner of the Swiss government and our perspectives on what citizens and businesses want are helping the government to make digitally sustainable choices.

For example, we participate with ongoing contributions to the new digital identity law, governance framework and technology landscape which is currently being developed within the E-ID project. This is creating space for broad public participation on the topics electronic identity and digital trust infrastructure in Switzerland. The multifunctional project team is being led by the Federal Office of Justice (FOJ), along with the Federal Office of Information Technology, Systems and Telecommunication (FOITT), the Federal Office of Police (fedpol) and the Digital Public Services Switzerland (DPSS). On our recommendation, they've taken a very participatory approach to this, including regular meetings to enable stakeholders to share their feedback as openly as possible. This has helped us to create a lot of consensus and stakeholder alignment, guided by the principles. The success of this initiative clearly illustrates the importance of solid principles for smoothing the path and staying on it.

What are the main challenges?

Adoption is the most pressing issue, because without the involvement of businesses and government services, the electronic identity ecosystem will offer no tangible value to participants. So while it's important that stakeholders define and reach agreement on the values and principles, it's equally important to actually get things moving. If you wait until everything is perfect before starting, you're always going to be late to market. An iterative approach is the best basis for "thinking" and "acting" at the same time.

Businesses in particular stand to gain the most from taking action now — in sectors including manufacturing, healthcare, travel and tourism. And while more companies are starting to experiment, it's not yet being done at scale, and we still need more. Banks and insurance companies in particular are in a prime position to create benefits by building trusted data spaces and information cohorts to enable more verifiable attribute sharing and consent management. Of course, they can only add real value when the data can be used in the digital realities of their clients' daily lives. That requires interoperability, which is why a framework is needed to ensure USbility, usefulness and privacy. That's where we align with INNOPAY, which actually became the first non-Swiss member of DIDAS recently. Banks should be crucial enablers of digital society — not only with embedded finance across the board in all sectors, but also by enabling individuals to manage their data more responsibly while preserving full privacy; it's about becoming a data custodian instead of a data handler.

Within all this, another important hurdle is that there's still some degree of misunderstanding of what is actually meant by "digital identity'. Traditionally, digital identity has been associated access management to servers and systems, but in our context it means a change towards a more citizen-centric service model: one that allows individuals and organisations to rethink the sense of the "self', and how they can execute agency using digital means and privacy mechanisms in both the digital and the physical worlds. This is the missing piece of the puzzle in today's digital economy.

And digital identity of individuals is just the start. Eventually, it can be integrated into a broader framework of digital identities of organisations, machines, algorithms and images to verify the provenance and integrity of data. Especially in today's context of rising concerns about misinformation and disinformation, we need to protect how knowledge is being generated and disseminated.

Verifiable credentials and watermarks can help make it possible to track any dataset throughout its lifetime and trace it back to its source for verification purposes. This turns the tech into a transparency tool to support decision-making. The Coalition for Content Provenance and Authenticity (C2PA) initiative is spearheading this approach with an open technical standard providing publishers, creators and consumers with the ability to trace the origin of different types of media.

An additional example of this is the Global Legal Entity Identifier Foundation (GLEIF), based in Basel here in Switzerland. It started out in the financial sector but is now expanding to other sectors. The foundation supports the implementation and use of the Legal Entity Identifier (LEI), and has already embedded the LEI in as many as 300 laws around the globe to ensure issuance and verify businesses. GLEIF has now pioneered a new form of digitised organisational identity called the verifiable LEI (vLEI). This can be embedded in tech frameworks and processes for the real-time digital authentication and verification of the identity of trade partners and intermediaries, for example. So executing organisational role agency (by one or multiple organisational representatives) or delegating powers and activities further down to companies' employees, products and services, becomes a reality. With this, the whole chain becomes digitally verifiable at any point in time, which creates the much-needed environment of trust for the global digital economy, potentially in a highly automated way. That's how we can leverage technology to our advantage and put the individual in control. Because overall, authentic and verifiable data is increasingly essential for good decisions — whether they are made by humans or augmented by machines.

Where do you look for inspiration in the context of digital sustainability?

On an interoperability level, the Electronic Trade Documents Act in the UK is a prime example of what we need to ensure in Switzerland. If we want to continue to trade with our global partners in the EU and beyond, we must be able to accept digital signatures on trade documents from abroad.

In terms of pushing the topic of digital interoperability forward and building awareness, the International Chamber of Commerce's Digital Standards Initiative (DSI) provides great guidance on what to do and how to do it. And there are various relevant regulations and initiatives at EU level, such as eIDAS2 and the European Digital Identity Architecture and Reference Framework providing tools to support their implementation.

Looking beyond the European Union, the Digital Identification and Authentication Council of Canada (DIACC) advocates for an inclusive, privacy-enhancing digital identity strategy that works for all Canadians and has issued a new ecosystem approach based on SSI principles. They were one of the first in the world to adapt digital identities, so I am interested to see how they transition towards the latest possibilities, optimally supporting their own federalist government model.

Meanwhile, Bhutan is a great example of how much can be achieved when you actively drive adoption of these new paradigms. Led by the king, the country's nationwide rollout of digital identity has simplified KYC, annual checks and even elections. In some cases, trucks drive out to the most remote areas to enable online verification for citizens living there —

literally bridging the gaps between the digital and the physical worlds so that the whole of Bhutanese society can participate in the global digital economy. Another prime example is Singapore, where the state is pushing its own platforms for global interoperability while investing in private-sector companies to ensure that the necessary innovation can happen to keep the country on top.

As another example, in the US, the Department of Homeland Security, and specifically the Silicon Valley Innovation Programme, are doing great work with an excellent talent pool when it comes to advancing cryptographic agility, layering and privacy-preserving and authentic synthetic data generation.

At DIDAS, we not only realise that there's a lot to be learned from looking abroad, but in line with the Swiss values — trust, neutrality, open dialogue and progress — we also want to share our knowledge with the rest of the world. Therefore, we maintain active links with various other associations internationally, such as the Trust Over IP Foundation, the Decentralized Identity Foundation (DIF) and the Open Wallet Foundation (OWF), of which we're a founding member. Additionally, we're in close dialogue with key stakeholders in EU commissions, and we regularly exchange ideas with international experts at events, including through our own "Digital Identity unConference Europe" (DICE). The next edition will be held in Zurich this June, and all being well it will feature the highest level of political representation possible: one of the seven federal councillors of Switzerland.

By continuing to support the dissemination of information on a global basis and contextualising it for the national situation, we hope to move ever closer to our goal of becoming a Competence Centre for digital identity and verifiable proofs. This will enable us to serve the future of Switzerland's digital economy in an even broader sense — and we remain open for national and international contributions to further our progress.

Read more about digital sustainability

Original interview

INTERVIEW

5 QUESTIONS ON DIGITAL SUSTAINABILITY TO...

Professor Dr José van Dijck

José van Dijck has been a Distinguished University Professor of Media and Digital Society at Utrecht University since 2017. She is leading researcher in media, social media and media technologies. In this interview, she discusses digital sustainability in the context of the "platform society" and emphasises the importance of focusing on public values rather than commercial or corporate ones.

What does the term "digital sustainability" mean to you?

What I like about the concept of "digital sustainability" is its broadness to cover many different aspects of life in the digital world. Of course, as with "traditional" sustainability, the environmental aspect is very important. After all, the internet already accounts for around 4% of all global greenhouse gas emissions. Due to the cloud computing power and data centres needed to support the emerging AI tools, this is expected to rise sharply to as much as 20% according to some estimates. Therefore, to support a digitally sustainable world, tech-related investments should go hand in hand with energy reduction as a strict goal. From a broader economic perspective, digital sustainability refers to responsible implementation of digital tools in all kinds of sectors — from healthcare and media, to mobility and finance — to serve public values rather than only commercial or corporate values. In healthcare, for example, a focus on efficiency goals could push the use of digital apps and robots. While these can be supportive tools, we should not lose sight of the fact that such aids can never replace the need for human care. In addition, digital sustainability has relevance in terms of social and ethical responsibility because it can helps us to not only preserve but also actively add public and human value in the digital world we're shaping. This can be done by ensuring that algorithms and data are always used in compliance with public value requirements. I see a strong overlap between all

these aspects and the UN's Sustainable Development Goals (SDGs). Therefore, I think they can serve as a good framework for harnessing the tools of digital transformation in a digitally sustainable manner.

How does digital sustainability tie in with the book that you co-wrote, The Platform Society: Public Values in a Connective World?

In our book, we very much focused on public values (privacy, security, transparency, accountability, fairness/non-discrimination, open to democratic control, autonomy, sustainability) as a basic point of departure for designing and developing digital platforms, infrastructures and policies. We organised the book around the "Platform Society" as a contested concept. In other words, public values are not a given — you cannot buy them off the shelves; instead, they are contested between actors with varying — and sometimes competing — interests. For example, corporations that are interested in creating economic value by gathering data to improve efficiency are increasingly clashing with governments that want to protect the public values of privacy and security.

In the book, we looked at both the public and private sectors by considering four different areas: education and healthcare (public), and mobility and news (private). As the global "Big Tech" players gained more power, social traffic increasingly ran via their online platforms. Their interfaces, reputation systems and algorithms linking supply and demand were steering the design of society. We examined the potential consequences for public interests in terms of the accessibility, safety and affordability of public transport, pluralism in journalism or autonomy in the organisation of education.

What have been the most significant changes since then?

Our book came out in 2018 — that's six years ago, which seems like eons in the fast-paced digital world. In fact, we wrote the original book in the Dutch language in 2015. When we decided to publish an English-language version for a global audience, we realised so much had changed in the subsequent three years that it wouldn't be enough to simply translate in. We ended up pretty much rewriting the whole thing! So while our book was quite innovative at the time, obviously there have been several big changes since then.

First and foremost, there have been major legal and regulatory advances, especially in the EU. The first one was introduced in 2018, when the GDPR forced the Big Tech platforms to comply with privacy regulations. Since then, other EU frameworks have been or are being implemented, such as the Digital Services Act (DSA) and the Digital Markets Act (DMA) framework, the EU Data Act, the EU Artificial Intelligence Act and the Digital Operations Resilience Act. All of these legal frameworks set clear boundaries and will therefore be very important in terms of not just protecting but also redesigning and reshaping the public platform society.

Secondly, we have seen huge geopolitical changes. In the final chapter of the book, we predicted the emergence of a strong Chinese block of platform ecosystems to rival the American "big five" (Google, Amazon, Facebook, Apple and Microsoft) in the US. This block of several big players — Baidu, Alibaba, Tencent and Bytedance (TikTok) — not only emerged, but it happened almost immediately, much faster than we expected. This, together with the further concentration of power among the big five, has intensified the geopolitical contest between the US and China.

Businesses and organisations can shoulder their responsibility for digital sustainability by changing the way they think. Consider the bigger picture!

This has been coupled with huge technical changes. The emergence of AI and ChatGPT last year signalled a new technological breakthrough in a field where Europe has lagged behind, both technically and from a regulatory perspective. Now, with AI on the rise, we need to re-evaluate what is at stake in the platform society. After all, AI is already woven into all kinds of digital tools and across sectors.

I find it helps to view the platform society as an ecosystem with three layers of power, and I often use the metaphor of a tree. I see the roots are the "wiring" layer of the internet — the hardware and infrastructural services supporting digital communications. The trunk is the powerful intermediate layer encompassing "general purpose" services, such as search engines, app stores, social networks, pay systems, identification services, navigation and advertising. These are overwhelmingly operated by the big five platforms. The branches form the final layer; I call these "sectoral" platforms — software services designed for a particular industry or sector. The big five have increasingly infiltrated into almost all sectors of society, both public and private, and these branches are all becoming dependent on them.

In this metaphor, we could also see the data flows as "oxygen" for AI, and algorithms as the "water" that is absorbed, feeding the tree from bottom to top. And because the big five are now involved in all three layers of the tree, they can start vertically integrating data flows, which gives them unprecedented power in the platform ecosystem. But how can we make our world digitally sustainable when just a handful of corporations are in charge rather than democratic state systems? That's why this ecosystem-based thinking is so important, so that we understand the complexity of the platform society and how it is affecting all our lives — and how to fix it.

Importantly from an EU perspective, while we have been strong in regulation, we have been weak in developing our own alternatives in the "trunk" layer of the tree — the all-important layer connecting the "wiring" with the "branches." The new acts may fill some of the gaps for the sector companies. However, in view of the contested infrastructure in today's global digital ecosystem, all of Europe's political, economic and social concerns should be anchored in concern about digital sustainability.

How can businesses and organisations play a role in improving digital sustainability?

In the context of environmental sustainability, it is becoming increasingly normal for individuals to take responsibility for the planet's future through their own actions: eating less meat, changing the way they travel, and so on. We now need to create the same kind of awareness and sense of responsibility for shaping a digitally sustainable future. Individuals can contribute by using digital tools such as AI more mindfully, so that they are not unnecessarily consuming energy and natural resources that could be better used for other purposes.

Corporations and businesses can shoulder this responsibility by changing the way they think. When developing a digital product, don't just treat it as a tool to be marketed, but consider the bigger picture. From an environmental perspective, this means taking steps to reduce how much energy and/or water is consumed by digital infrastructures. Especially since AI is set to dramatically increase the use of natural resources, as I mentioned earlier, developers of AI and other data-intensive apps should make efforts to develop solutions that are "green by design."

Privacy is another important public value in the context of digital sustainabilty. The GDPR has helped to improve awareness of privacy, but "privacy by design" has still not become commonplace. And privacy doesn't go far enough, in my opinion; we should be focusing on "democratic control by design." For example, my insurance company recently offered me a personalised premium, but when I asked about the variables they'd used, they wouldn't (or couldn't) tell me. "It was simply the algorithm," they said. So how can they be held accountable? You should be able to explain algorithms to citizens and consumers;

only then can data truly be used for fairness and transparency. I truly believe that companies who adjust to this new way of thinking stand to benefit as society's need for trust and expectations of openness continue to evolve.

The responsibility for shaping a digitally sustainable future doesn't only lie with individuals and corporations. If companies aren't willing to open up their systems so that people can ask "Why?," then governments should put frameworks in place and force companies to adhere to those standards. In fact, by means of executing the legislative frameworks, the EU is really making a difference in how these systems are implemented, which is empowering organisations that want to adhere to digital sustainability principles.

Moreover, especially in this era of "smart cities," civil society actors such as municipalities need to become more mindful of their goals when implementing digital tools and technologies. Instead of thinking about what is actually needed to add public value, there has been a tendency to take whatever the market is offering. They should bear in mind that many tools are primarily offered in order to generate data flows to sustain companies' commercial values rather than having citizens' interests and welfare at heart.

Can you share some positive examples of digital sustainability in practice?

Public values are increasingly part of the digital repertoire of public bodies when deciding on the acquisition and deployment of platforms, apps or tools. Universities, schools and public-sector organisations have become more aware of the need to protect privacy, security, autonomy and so on, as part of their societal identity and social task.

For example, I was recently pleased to see that a university procurement procedure not only included public values one of the conditions for suppliers, but also made them a precondition for submitting a proposal. It's an encouraging sign that such conditions are becoming a priority for organisations rather than an afterthought.

Meanwhile, it's no secret that the Big Tech platforms are increasingly nestling themselves in school classrooms as part of the trend towards the personalisation of educational tools. I am not a great fan of this, to be honest. Although I understand the desire to enhance education at an individual level, I believe school should be a place where children learn to act as part of a community and develop social skills. There is an element of risk attached to only empowering children to do better as individuals; we also need to invest the same amount of effort into group dynamics and a sense of belonging. Therefore, I welcome the news that governments in various countries are banning the use of mobile phones in classrooms, and even sometimes at break times, in order to stimulate social interaction.

Additionally, I was heartened to hear that Dutch schools recently joined forces to take a stand against the Big Tech firms. Following a Data Protection Impact Assessment (DPIA) under GDPR, the Dutch government imposed new conditions on the use of Microsoft and Google in classrooms, and within a month their offering had changed for the better. This is a great example of how we don't have to be "rolled over" by the big platforms. Shouldering your responsiblity starts with critical thinking about how digital tools are really adding value for the public good. And if they're not, it can help to build coalitions and work together to leverage your negotiating power. There's still time for us to effect real change.

Read more about digital sustainability

Original interview

INTERVIEW

5 QUESTIONS ON DIGITAL SUSTAINABILITY TO...

Marie Walker, Raidiam

Marie Walker is the resident Open Futurist at Raidiam, the pioneering data sharing technology company behind all of the most successful Open Finance implementations. Additionally, through her website open-conversations.org, she shares a daily list of the most interesting news headlines and insights related to Open Banking, Open Finance and the data economy. Here, she explains that, rather than being an existential threat, digital sustainability is an opportunity to improve products and services, and to achieve operational efficiencies.

What's your understanding of the term "digital sustainability?"

Besides referring to the environmental, social and governance (ESG) aspects, digital sustainability applies perfectly to consent-driven data. The term "permissioned data," along with "digital public infrastructure" (DPI) and "smart data," is increasingly being used to refer to Open Banking and Open Finance. Perhaps this is because the term "open" can seem somewhat misleading, especially in the context of data privacy and security. After all, Open Finance isn't about literally opening up people's financial data to anyone who wants it; it's about making data that belongs to the end customer, citizen or business visible and available to them, for their own benefit. I believe that is the essence of digital sustainability too.

One benefit of having availability and control over your data is that you can gain better access to more appropriate products and services. This improves convenience by automatically meeting your individual needs — at a basic level think of time-savings through auto form-filling, for example. Leveraging richer data sources is critical for financial inclusion, because it can improve access to credit for self-employed individuals or those working in the gig economy, for example, who traditionally struggle to access pensions, mortgages and other financial products. By looking at someone's total

earnings over an extended period of time, lenders can assess the risk of extending credit more fairly and realistically. On the other hand, it can help people to access the right financial assistance. For instance, if they have visibility of their whole "data self," they can see their total income and how much they're spending on essential bills and other costs. They might also discover that they're eligible to apply for extra government aid — or, in an ideal scenario, the government could proactively inform them.

In order to leverage more data about a customer, service providers need to access data held by other entities — and this can be a challenge. If a bank is asked by a fintech to share a customer's data, the bank needs certainty that they can trust the fintech is authorised for this access and will behave appropriately with the data they share. Regulators can play a key role here by establishing the "rulebook": devising policies to preserve privacy, ensuring that no more data is shared than is strictly necessary, and defining what may and may not be monetised, for example.

To create a healthy data-sharing ecosystem, we also need willing participants at the organisational level. After all, in the past, data was considered a unique selling point. It was also a barrier to competition. That's why Open Banking was introduced in the UK: to level the playing field. In this case, the government mandated the banks to take part, and also to fund the efforts. However, stakeholder engagement is also important. Governments need to think about how they incentivise companies to participate, how the implementation will be funded, and also how they will monitor compliance. Because simply imposing a mandate can result in companies dragging their feet, which won't prevent implementation eventually but will hamper progress.

How does Raidiam help to solve the challenges related to digital sustainability?

The two co-founders of Raidiam consulted on the implementation of Open Banking when it was mandated in the UK. There were several problems to tackle, such as how would banks know where to find the data that the customers want to share? And how could they trust that they were sharing it, not only with the customer's consent but also with appropriately authorised entities? A system of bilateral agreements between all nine banks and all other businesses involved simply wouldn't be scalable. Moreover, it would restrict competition, limiting choice for customers by excluding smaller banks and tech companies without the resources to handle all the necessary agreements.

To resolve this, Raidiam developed a data-sharing trust framework to ensure trust at the technical level, covering access management, governance and security for the entire group of organisations. The directory provides certainty about each participant's role in the ecosystem, and what they are permitted to access.

The trust framework isn't a physical structure; data doesn't sit on it or go through it. Instead, it facilitates the direct sharing of data between the data provider and the data receiver, preserving privacy with consent based on data attribute verification. The framework uses public key infrastructure (PKI) certificates for authentication of permissions, consent and authorisations, via APIs. These are built to specified standards — which Raidiam contributed to — so they are seamless, highly secure and, importantly, interoperable to ensure future scalability.

A technical trust framework is hugely enabling for digital sustainability as it provides certainty about who is sharing data, for what purpose and for what duration, without the need for bilateral agreements between all companies — which are a source of huge economic and resource wastage. Moreover, since the trust framework is centralised, if a fintech entity or third-party provider (TPP) loses permission to be part of the ecosystem — perhaps because it loses its licence or experiences a cybersecurity incident — it can be temporarily suspended from the framework, immediately and for everyone. This saves a lot of valuable time involved in manual communication ecosystem-wide, plus it minimises the security risks.

The project in the UK put Raidiam in the unique position of being the world's first — and still only — company to have a live technical trust framework for data sharing. Building on that success, we've since supported regulators, banks and private enterprises on similar projects in other countries, including the Middle East, Brazil and Australia. Our informal partnership with INNOPAY promises to be very valuable, with INNOPAY guiding clients through the decision-making surrounding the rules and agreements related to trust-based data sharing, digital identity and payments, and Raidiam then designing, developing and implementing the necessary technical infrastructure to facilitate the ecosystem. Together, we hope to continue to play a pioneering role — both in finance and other sectors.

Just think of all the wonderful things you could do if you had access to data from elsewhere

What role do you see your technology playing in the future development of trust frameworks beyond the finance sector?

To truly unlock benefits for data users, there needs to be interoperability between sectors and across borders. For example, combining financial data with things like energy data could give consumers and businesses valuable insights into their spending as the basis for improved behaviours. Therefore, we see enormous potential for the emergence of "data spaces" enabled by trust frameworks in other markets. Our technology is agnostic, interoperable and built on established standards, so there's recognition that it's no longer a tech problem; the same or similar tech can be embedded elsewhere. Now, the biggest challenge when expanding data sharing across other sectors lies in policymaking, homogenising the rules and ensuring conformance.

One reason why it all started in finance is the high degree of regulation in the industry. Other sectors are less regulated, which presents challenges. Take retail, for example. You don't need a licence from the government to open a shop, but in a retail data-sharing ecosystem, there would need to be some mechanisms to validate each participant's identity and compliance. Otherwise, other participants could be open to fraud.

We also see practical challenges like this in telecoms, for example. If a customer grants a smartphone app permission to track their location, the telecom provider has to share the location information with the app developer. But the telecoms industry is also highly regulated, and if providers share data with unvalidated developers they can face huge fines. But if there's no system for licensing developers, how can they know whether they're sharing data appropriately?

Together with INNOPAY, we're leveraging our extensive mutual experience in private cross-sector ecosystems and government projects worldwide to explore the peculiarities in each project or sector so that we can tackle them in a digitally sustainable manner.

What is your advice to private-sector businesses and organisations in the context of digital sustainability?

There's no doubt that digital sustainability is the direction of travel. Admittedly, the uptake has been slow, and movements like Open Banking have not yet fully delivered on their expected potential. But despite some impatience among investors, we need to remember that fintech is very pioneering and it's still early days. Many other technologies have taken time to gain widespread acceptance — think of contactless payments and even mobile phones.

So while a long-term vision is needed on digital sustainability, it's widely acknowledged as being the way forward. The younger generation especially are online-savvy and privacy-aware, so those "consumers of tomorrow" are going to start demanding data sovereignty. Additionally, governments worldwide are enhancing data privacy laws, and these will influence what companies are able to do.

Companies need to reassess their business models and consider necessary changes. For example, it's claimed that 45% of car manufacturers' revenue comes from harvesting and selling data from computer-equipped cars. They'll need to address this if such practices become restricted!

Similarly, companies need to prepare to compete, or risk getting left behind. If you don't create new and better products and services, others will. And you need to look beyond your traditional ecosystem. Forward-thinking banks benchmark themselves against not only their competitors, but also other types of businesses such as fintechs and even the BigTechs like Apple and Amazon.

However, digital sustainability is not necessarily an existential threat. Rather than treating it just as an exercise in retention and damage limitation, view it as an opportunity. Banks that have fostered a good developer experience and encouraged interaction have been much better placed to capitalise on the Open Banking movement to provide better and more appropriate services to their customers, often in partnership with other types of businesses to provide complete solutions to bigger problems. Moreover, a trust ecosystem supported by the right technical framework can improve process efficiency and reduce costs — such as by onboarding customers in just a few clicks. And in the current climate, operational efficiencies can mean the difference between profit and loss.

My advice would be to start exploring. And don't wait for the big, transformative idea. Just think of all the wonderful things you could do to enhance your existing products and services if you had access to additional data from elsewhere. For example, if you currently provide online accounting services to small businesses, think about which other services they need and how you could embed them in your platform to become a one-stop-shop for SMEs.

Then, reach out to others to create an ecosystem that facilitates secure, consent-driven access to the necessary data. Organisations have a habit of spending too much time discussing rules and standards. Sometimes, you just have to start experimenting. A sandbox environment using mock data is a safe way to collaborate with other organisations and discover what works.

Can you share some examples of digital sustainability in practice?

Although I mentioned that it's still early days for Open Finance, there are already plenty of examples emerging, often improving user convenience — securely, of course — by taking the hassle out of switching providers. For example, there's an app called Raisin where, after creating an account and proving your ID once, you can move money around between savings accounts worldwide to take advantage of favourable interest rates. This is a great example of improving convenience and choice.

Another example is a digital ID scheme in Australia powered by the four biggest banks, who are exploring ways to monetise their premium APIs. In the case of customers buying alcohol, their age is verified by their bank confirming either yes they are old enough, or no they are not. This is privacy protecting and a great win-win for all parties. This is convenient for customers, it helps retailers minimise the risk of a fine for selling alcohol to underage consumers, and the bank receives a micropayment for the service provided.

Last but not least, I'd like to mention the Perseus project, a private, cross-sector ecosystem involving various types of businesses — energy companies, transport companies and banks. This proof-of-concept scheme is aimed at automating greenhouse gas reporting for all small businesses in the UK using accurate, assurable data. It provides them with information on all their carbon-generating behaviours — such as in their buildings or manufacturing processes — and automatically indicates potentially available green financing. This not only incentivises companies to reduce their carbon footprint, but also helps banks to meet their ESG responsibilities in terms of lending appropriately.

This project was initiated by the nonprofit Icebreaker One, which illustrates that digitally sustainable data sharing doesn't have to be government-mandated. I also like that it identifies and positively impacts business behaviours by bringing all aspects of digital sustainability together: environmental, financial and technological.

Read more about digital sustainability

Original interview

INTERVIEW

THE 5 PILLARS OF DIGITAL SUSTAINABILITY IN BUSINESS STRATEGY

Deborah O'Neill, Partner and head of digital for the UK and Ireland, Oliver Wyman and Mariane ter Veen, Director of data sharing, INNOPAY

What is digital sustainability? And why is it a crucial topic for businesses nowadays? In this article, Deborah O'Neill, partner and head of digital for the UK and Ireland at Oliver Wyman, and Mariane ter Veen, director of data sharing at INNOPAY, discuss these topics and share their vision of a digitally sustainable future.

Deborah emphasizes the urgency of transitioning to sustainable digital practices. "In today's rapidly evolving digital landscape, organizations must untether themselves from outdated systems and embrace modern, efficient infrastructures that promote long-term sustainability," she states. Her work revolves around helping companies in their digital transformation, with a focus on building self-sufficient engineering and delivery capabilities that are adaptable and secure.

Mariane underlines the broader implications beyond environmental impacts. "Digital sustainability is about more than just reducing the ecological footprint of technology. It's about generating long-term value, transparency, and equity for all stakeholders involved," she explains. She advocates for secure and trusted data ecosystems that allow individuals and organizations to maintain control over their data. This "data-sovereign" approach contributes to sustainable relationships, ensuring a continuous flow of data. In turn, this data can inspire new business models and drive innovation.

5 pillars of digital sustainability in business strategy

Creating alignment in business strategy

Organizations must optimize their systems and processes to ensure that digital sustainability initiatives are fully integrated with broader business objectives. This enables companies to change and adapt to maintain alignment between their operations and strategic goals, ensuring long-term success and efficiency. Every digital initiative should support the company's strategic objectives for sustainable development.

A key component of this adaptability is increasing the digital skills in the organization, effective workforce planning, optimizing talent management, and ensuring the right resources are in place to support sustainable growth. In other words, digital sustainability should not be an afterthought but a core part of the business strategy. Every digital initiative should support the company's strategic objectives for sustainable development.

Building trust and data sovereignty in digital transformation

Data sovereignty refers to allowing individuals and organizations to maintain control over their information, while ensuring that data is managed in compliance with local regulations. This is crucial because it empowers individuals and organizations to decide how and under what conditions their data is shared, and safeguards privacy and security.

Organizations need to ensure that their data practices are transparent and equitable. Stakeholders need to feel valued and that their data is secure, which builds trust.

Creating internal awareness and transparent communication

Comprehensive educational initiatives and transparent communication are necessary to foster a deeper understanding of digital sustainability. The first step is to create awareness within the organization about the importance of digital sustainability so that business leaders understand the value of integrating it into their overall strategy. Organizations need to clearly set out their goals, so staff feel empowered to and excited about being part of the process. Next, the organization should clearly communicate its own digital sustainability vision, data practices, and sustainability efforts so that all internal stakeholders can internalize and act on them.

Continuous education helps employees to stay ahead of emerging risks. Regular workshops and training sessions are essential to keep teams updated on the latest security threats, data management practices, regulatory changes, and innovative technologies. Such activities also fit well with a broader focus on enhancing employees' digital skills in order to safeguard the company's organizational sustainability.

Practical implementation through data ecosystems

One challenge when sharing data is to ensure that the benefits of that data are fairly distributed. Data ecosystems or data spaces are secure and trusted environments where data can be shared in a decentralized manner, and where data sovereignty and the benefit balance are prioritized. Thanks to agreed policies and rules, everyone knows their role in the ecosystem and understands the business value of sharing data and how to create value with it.

By facilitating the flow of data across sectors and borders while protecting sensitive information, data ecosystems enhance collaboration. Leveraging data ecosystems enables organizations to improve operational efficiency and tackle industry-specific challenges more effectively. Ecosystem thinking also fosters innovation as the basis for future success. The uptake of AI is making it increasingly important for companies to organize access to business data, both their own data, and data within their wider ecosystem.

"The digital future must be built on trust, data sovereignty, and robust cybersecurity measures," say the two industry-leading experts. "This starts with providing a comprehensive framework that ensures long-term value, transparency, and equity for all stakeholders."

Regulatory compliance and standards in digital sustainability

Organizations can set themselves apart in terms of their commitment to digital sustainability by adhering to the highest standards of data protection and security. This demonstrates that their digital sustainability-related measures are comprehensive and effective.

The regulatory framework can play a strong role in shaping a more digitally sustainable future. For example, the European Union's data strategy, which focuses on creating a single market for data, is pivotal. It promotes data sovereignty and ensures that data rights and privacy are protected through regulations such as the General Data Protection Regulation (GDPR), the Data Governance Act (DGA), and the Digital Markets Act (DMA) and Digital Services Act (DSA).

A call to action

Embracing digital sustainability for long-term success

O'Neill and Ter Veen have a powerful call to action for business leaders. "Digital sustainability is not just a buzzword. It's a critical component of modern business strategy that offers significant economic and social benefits," O'Neill emphasizes.

"Organizations need to start today," Ter Veen urges. "By integrating digital sustainability into their core strategies, businesses can build trust, foster innovation, and ensure long-term success."

The two experts are committed to promoting digital sustainability and helping business leaders navigate the complexities of the digital age with confidence and responsibility. They aim to set a new standard for safe, secure and value-added data sharing, paving the way for a more equitable and sustainable digital future.

Read more about The 5 pillars of digital sustainability in business strategy

Original interview

BLOG

HOW TO PREPARE FOR THE NEW MICAR CRYPTO RULES

By Douwe Lycklama and Jason Ekberg

June 2024 marks a watershed change in crypto regulation, with the Markets in Crypto-Assets Regulation (MiCAR) going into effect across the European Union (EU). MiCAR is the first framework of its kind to regulate crypto assets, related activities, and services.

MiCAR aims to establish more certainty within the often-volatile crypto market across Europe by balancing the promotion of innovation and technology with the need for consumer protection and financial stability. At the same time, the regulation helps harness risk with its comprehensive framework ensuring customer protection and fostering market integrity.

By introducing stringent requirements for issuers and service providers, MiCAR mitigates risks related to fraud, market manipulation and financial stability. Its implementation will likely influence not only the European market but also global practices, given that the EU tends to lead and offer inspiration for other jurisdictions globally. We saw similar first-mover trends with internet privacy laws (specifically, the General Data Protection Regulation, or GDPR) and digital cellular networks (like the Global System for Mobile Communications, or GSM).

The adoption of an industry-wide regulation like MiCAR shows that crypto assets are increasingly onpar with other financial products, services, and infrastructures and thus require the same level of regulation.

This article outlines how organizations can effectively respond to MiCAR. It supplements a newly released MiCAR assessment tool that offers an initial overview of MiCAR's scope and potential impact on businesses, helping them prepare for compliance and understand the ongoing regulatory discussions.

How organisations should respond to MiCAR

Organizations should take prompt action to respond to MiCAR given the substantial regulatory compliance obligation, the need to resolve uncertainties in MiCAR, and the stringent implementation timelines.

MiCAR introduces a significant compliance obligation

Although MiCAR is a step in the right direction to increase trust in crypto assets and services and reduce risk in the system by introducing a strong regulatory framework, it also presents a compliance obligation for organizations covered by the regulation. Although organizations that hold credit institution or e-money licenses will have few additional requirements, organizations that do not hold such licenses but wish to offer digital assets will have to acquire one. This will likely require an operating model overhaul. Additionally, stablecoin issuers that are classified as "significant" under MiCAR face stringent capital requirements and additional supervision by the European Banking Authority. MiCAR comes at a time when organizations must navigate an increasingly complex regulatory landscape. This includes additional mandates related to the MiCAR regulations, such as the Digital Operational Resilience Act (DORA) and the revised Transfer of Funds Regulation, which escalate the compliance obligation even further.

Four objectives of MiCAR and its implication for businesses

The following section offers a brief outline of the most important regulatory considerations for businesses, related to each of the four objectives of MiCAR.

Legal certainty

A robust legal framework that clearly states how crypto assets are dealt with in legislation and regulations. This should be accompanied by enhanced supervision, including an authorization and/or licensing process. Furthermore, compliance obligations necessitate substantial documentation, operational controls, and reporting to maintain the said authorization or license.

Innovation and fair competition

A regulatory framework that includes a fair trade-off between technological development and consumer protection. For businesses, this means clear and transparent rules which are the same for each institution independent of size, as well as the introduction of EU regulatory sandboxes available to MiCAR-impacted organizations.

Consumer and investor protection and market integrity

A regulation that clearly focuses on protecting consumer interests and market integrity, necessitating the development of transparency favouring measures such as whitepaper publication, informing about risk, or handling complaints processes. By enhancing transparency and accountability, systemic risks and investor confidence are promoted in the rapidly evolving crypto market.

Financial stability

A strong regulatory base to ensure financial markets remain stable within the EU. This will require strengthening of market abuse rules, AML, and counterterrorism financing measures, as well as implementation of capital requirements for both Crypto-Asset Service Providers (CASPs) and stablecoin issuers.

Uncertainties remain about the specifics of MiCAR

Ample uncertainties remain with regard to the scope and terminology of MiCAR, making compliance a more challenging task to achieve. These include:

Reverse solicitation

There is currently no certainty with regard to the impact on non-EU parties providing services in the EU. The European Securities and Markets Authority (ESMA) does have some guidance on this issue, but more questions remain.

Relation to other regulations

More clarity is required for situations in which MiCAR impacts organizations providing services that might also fall under other regulations, like the Payment Services Directive (PSD2).

Fully decentralised

There is no definition of “fully decentralised” within MiCAR, and therefore uncertainty about the scope of the existing regulatory exemption for “crypto-asset services offered in a fully decentralised manner.”

Non-fungible tokens (NFTS)

There is an NFT exemption within MiCAR, but the scope of that exemption is not clear. This issue has also been raised by the European Banking Institute.

For market players, these uncertainties introduce ambiguity around whether the requirements of MiCAR apply at all or whether businesses will meet the necessary requirements. The European Banking Institute notes that these four uncertainties are only the most obvious, with many more complex cases likely to arise in practice. Some of these uncertainties will further be resolved with input from market players and efforts of central bodies like ESMA. Future iterations of MiCAR are also expected, which will likely help to clarify issues further.

Timelines of MiCAR are rapidly approaching for eu and foreign organisations

MiCAR has short compliance timelines, further increasing urgency. In addition, national transitional periods are short, with a possibility of granting up to 18 months for existing CASPs (known as a "grandfathering period"). These periods differ across EU countries, although many countries have not yet announced their grandfathering timelines or even put application or authorisation processes into place.

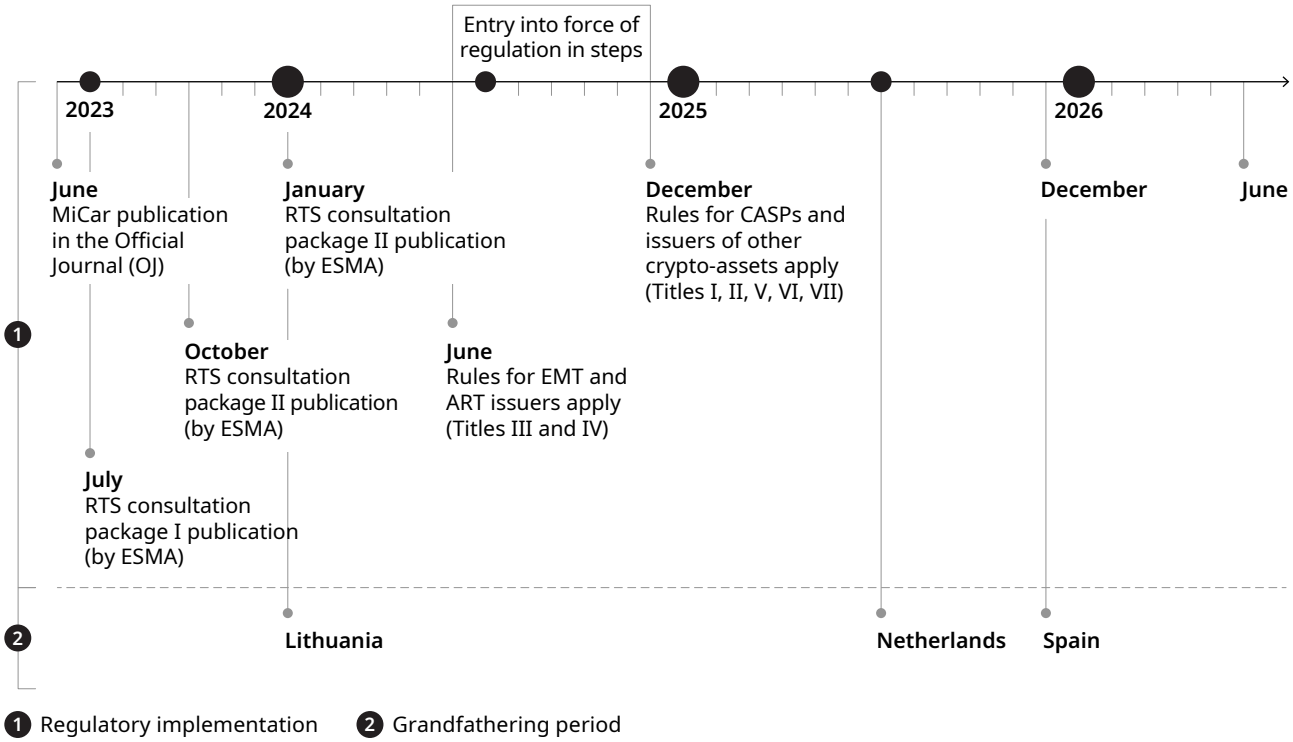
Micar

These short regulatory timelines are bumping up against the fast-growing pace of the digital asset ecosystem. For example, non-EU organisations are gradually looking to offer services in the EU as crypto becomes more intertwined with traditional finance.

Major cryptocurrency exchanges and digital crypto service providers that serve EU residents will need to ensure their services are fully compliant with MiCAR. Well-established payment institutions that are showing increasing activity in the EU crypto space will have to meet MiCAR standards. Similarly, fintech startups involved in stablecoin issuance will have to navigate these new rules to maintain and expand their European market presence.

The race against time to comply with MiCAR underscores the urgency for well-established firms as well as recent market entrants to reassess their operational strategies, thereby safeguarding their access to one of the world's largest single-market economies. Examples are US-based firms undertaking acquisitions to launch projects in the EU or engage in partnerships with EU organizations to execute specific services.

Exhibit 1: MiCAR timelines



Source: INNOPAY analysis

Collaboration will be essential for effective regulation

In line with this urgency, the fast pace of innovation, and the first-mover characteristic of the regulation, MiCAR implementation is expected to require extensive collaboration and communication between market actors and regulators. This is also due to the crypto market remaining a “lesser familiar territory” to many European regulators.

To date, the AFM in the Netherlands is one of the few organizations with a comprehensive application process in place, offering additional support with a “pre-scan” possibility. Regulators like the Dutch National Bank and the German BaFin have already signalled their willingness to collaborate with the industry to make MiCAR practical and effective for everyone. On the other side, crypto companies have increasingly voiced the need for clear regulations and rules and might use this opportunity to optimize the regulatory framework they operate in.

As MiCAR takes effect, businesses must proactively adapt to the changing regulatory landscape to ensure compliance and seize opportunities in the evolving crypto market. A deep understanding of MiCAR’s impact on their business is needed to make informed decisions and navigate the regulatory requirements effectively.

Read more about how to prepare for the new MiCAR crypto rules

Additional contributors: Jelmer Koster. Martine Nau. Leo Sizaret
This article was originally published on the Oliver Wyman website

Original blog

INNOPAY is an international consultancy firm specialised in digital transactions. We help companies anywhere in the world to harness the full potential of the digital transactions era.

We do this by delivering strategy, product development and implementation support in the domain of Digital Identity, Data Sharing, Payments and Open Finance. Our services capture the entire strategic and operational spectrum of our client's business, the technology they deploy, and the way they respond to local and international regulations.

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