swiss financial
innovation desk

Building Blocks For Smart Finance In Switzerland

A Pathway 2035 Deep-Dive

April 2025

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Executive Summary

The financial ecosystem is undergoing a structural transformation – one that goes far beyond isolated trends or technological buzzwords. At the core of this shift lies the growing convergence of three forces: the exponential growth of data, the need for interoperability and the transformative potential of artificial intelligence (AI).

Terms such as "open banking", "embedded finance" or "open data" have captured elements of this evolution, yet they often remain confined to specific sectors or technical layers. As a result, they fall short of addressing the broader strategic question: how can financial systems be reconfigured to make meaningful use of data at scale?

This discussion paper introduces the concept of **"smart finance"** to offer a more integrated and forward–looking perspective. Smart finance describes a next-generation financial paradigm in which advanced technologies – particularly AI – are applied to transform financial systems from reactive, fragmented architectures into intelligent, adaptive and interconnected ecosystems.

Importantly, smart finance is not just about digitizing existing processes. It is about **extracting meaning from data** – turning information into knowledge and knowledge into better decisions. If implemented effectively, smart finance holds the potential to unlock a new wave of value creation and reshape how innovation emerges within the financial sector.

At the heart of this transformation lies the development of **a data infrastructure**. This includes secure data environments, standardized application programming interfaces (APIs) and interoperable systems that enable data exchange not only across financial sectors, but across all areas of everyday life. A data strategy forms the foundation of such infrastructure.

Indeed, as the volume and strategic relevance of data continue to grow, **data governance** has become a central pillar of national competitiveness. With more data expected to be generated in the next three years than in all of human history, largely driven by AI and digital transformation, the pressure on industry players and governments – on the entire ecosystem for that matter – to manage data responsibly is mounting. In this environment, control over data infrastructure is emerging as a **key lever in the race for leadership in digital financial services**.

One of the enablers of this transformation is **open finance**, the natural evolution of **open banking**. By using standardized interfaces and secure, customer-consented data sharing, open finance unlocks new opportunities for financial services and product innovation.

Countries such as the **United Kingdom** are investing in smart finance frameworks. Their strategies combine regulatory clarity, public-private collaboration and cross-sectoral innovation. These jurisdictions are setting global benchmarks and demonstrating how aligned data strategies can unlock AI-driven transformation in financial services.

Switzerland, while well positioned in terms of infrastructure and institutional strength, relies on a **market-driven approach** to data integration. Platforms such as bLink, the Common API framework developed by Swiss Fintech Innovations and recent policy statements from the Federal Council reflect growing momentum. However, progress remains fragmented. This discussion paper addresses the following question:

How can Switzerland build a smart finance infrastructure – without compromising its market-oriented principles?

To answer this, the discussion paper:

- analyzes international regulatory and market approaches to open finance,
- assesses the current state and challenges of the Swiss financial ecosystem,
- synthesizes the results of a multi-stakeholder workshop convened by FIND, and
- outlines a possible modular data strategy tailored to Switzerland's context.

Rather than proposing a one-size-fits-all model, the discussion paper suggests a **modular strategy** that combines innovation incentives with **minimal but essential regulatory nudges and safeguards**. This approach supports a structured **public-private dialogue** on the future of smart finance in Switzerland.

FIND suggests a framework for data policy built around the following six pillars:

a **Targeted regulation**
b **Public-private governance**
c **International alignment**
d **Data security and digital self-determination**
e **Innovation acceleration**
f **Awareness and engagement**

While the strategic pillars outlined above provide a long-term framework for advancing smart finance in Switzerland, FIND recommends the following **short-term, concrete actions** to catalyze progress and build early momentum:

1 **Advance Stakeholder Dialogue on Anti-Money Laundering (AML) Data Infrastructure**
FIND recommends intensifying discussions with relevant stakeholders to explore shared data infrastructure solutions that support AML compliance and regulatory oversight.

2 **Explore the Establishment of a Public-Private Partnership (PPP) for Governance**
FIND proposes evaluating the creation of a PPP to develop a structured governance model that balances public regulatory objectives with private-sector innovation and agility.

3 **Refine Hybrid Regulatory Models**
FIND encourages a comprehensive analysis of hybrid regulatory approaches to determine which components require formal regulation (e.g. consumer protection, data integrity, consent authentication) and which areas can remain open to industry-led experimentation and innovation.

4 **Design Targeted Regulatory Interventions**
FIND recommends developing minimal, targeted regulatory measures for those areas identified under action point 3 as requiring formal oversight while preserving flexibility elsewhere to support innovation.

5 **Assess the Feasibility of a Digital Sandbox as a Trusted Data Space**
FIND suggests evaluating the viability of a digital sandbox, ideally designed as a trusted data space (see Appendix d), to enable safe testing of new data-driven financial services and AI applications.

6 **Expand SwissHacks and launch TechSprint or Smart Data Challenge to Drive Smart Finance Innovation**
FIND proposes expanding the government-led SwissHacks format and launch dedicated TechSprint or Smart Data Challenge – coordinated with relevant authorities.

I. Introduction: Moving Beyond Fragmented Terminology

The financial ecosystem is undergoing a structural transformation – one that goes far beyond isolated trends or technological buzzwords. At the core of this shift lies the growing convergence of three forces: the exponential growth of data, the need for interoperability and the transformative potential of AI. Terms like "open banking", "open insurance", "open finance", "embedded finance", "finance-as-a-service", "API-finance" are widely used, though often inconsistently. They capture elements of this evolution, yet they often remain confined to specific sectors or technical layers. As a result, they fall short of addressing the broader challenges of the future:

- **How can data and AI, when meaningfully connected, enable win-win-win outcomes for customers, industries and regulators alike?**

- **How can we govern, structure and share data in ways that make it ready for the responsible use of AI?**

This discussion paper seeks to elevate the debate – moving beyond fragmented terminology and towards the foundational concepts driving the next phase of financial innovation. In that sense, this discussion paper suggests the use of the term **"smart finance"**. It refers to the application of advanced technologies – particularly AI – to transform financial systems from reactive and siloed structures into intelligent, adaptive and interconnected ecosystems.

More than just digitization, smart finance is about extracting meaning from data – turning information into knowledge and knowledge into better decisions. If implemented effectively, smart finance has the potential to unlock a new wave of value creation, enhance systemic resilience and influence how innovation emerges within the financial sector.

Rather than offering definitive solutions, this discussion paper suggests a **modular strategy** as a starting point for discussion and further development. It draws from international examples, Swiss-specific experiences and the results of a multi-stakeholder workshop organized by FIND. The aim is to identify possible next steps that build on Switzerland's strengths – and that can contribute to the gradual emergence of a more intelligent, inclusive and resilient financial ecosystem.

In this regard, a long-term reference model for the future of financial systems has been outlined by the Bank for International Settlements (BIS) in its working paper "**Finternet: The Financial System for the Future**" co-authored by Augustín Carstens and Nandan Nilekani.[1] In this vision, financial services are deeply embedded into everyday digital environments – enabled by secure protocols, common standards and trusted data spaces that transcend traditional sector boundaries. However, the Finternet is not a product, a regulation or a near-term policy goal – it is an orientation, a north star. This paper argues instead that the journey starts here and now, with a strategic rethink of how we make data available and how we leverage AI to turn that data into actionable intelligence.

II. Towards Smart Finance

The financial sector is evolving beyond digitalization as an end in itself, moving towards a phase of structural integration driven by data. At the core of this transition is a growing recognition: data is no longer merely a trace of financial operations – it is emerging as a strategic asset.

A driver of this transformation is **open banking**, which enables secure, consent-based access to personal and product data across institutional boundaries via standardized APIs. By dismantling traditional barriers, it fosters competition and accelerates innovation.

Building on the foundations of open banking, **open finance** extends the scope of data integration to encompass savings, insurance, investments, mortgages and pensions. Beyond individual use cases, open finance creates significant value for businesses. Through business-to-business (B2B) integration, companies gain access to financial services that are automated and embedded into their operational workflows.

[1] See https://www.bis.org/publ/work1178.htm or https://www.moneytoday.ch/payments/lexikon/finternet as well as Appendix a.

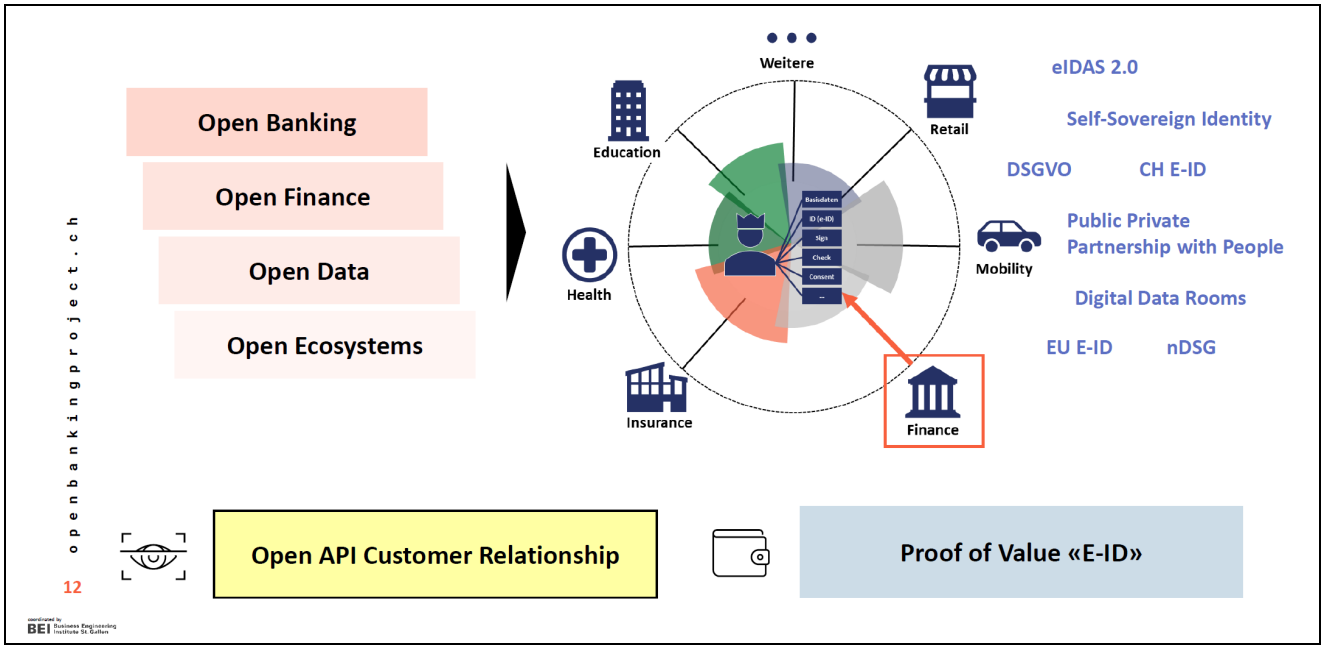
The rise of models such as **banking-as-a-service (BaaS)** and **insurance-as-a-service (IaaS)** demonstrates how data integration also extends to non-financial actors. Retailers, mobility providers and tech companies can now integrate financial functionalities – from payments to microinsurance – directly into their value chains, offering frictionless experiences to customers while generating new revenue streams.

This dynamic marks the beginning of what we refer to as **smart finance**: a next-generation financial paradigm built on interoperable data infrastructures and the intelligent use of advanced technologies – **especially AI**. While terms such as "open finance", "embedded finance" or "BaaS" are frequently used to describe isolated elements of this development, smart finance provides an integrated framing that captures the systemic nature of the transformation.

Global financial hubs like London show how a forward-looking smart finance strategy can become a driver of competitiveness and innovation. Regulatory clarity, digital infrastructure investment and ecosystem governance have allowed these markets to set global benchmarks.

Their ultimate goal is the same: to build inclusive, secure and intelligent financial systems in which data and customer needs guide innovation. In doing so, the objective is not merely to digitize existing processes, but to embed finance more intelligently, securely and meaningfully into everyday life.

When supported by interoperable data systems and responsibly applied AI, **smart finance can transcend traditional sector boundaries** – connecting with domains such as healthcare, education, mobility and sustainability to deliver more integrated and adaptive services.



Source: OpenBankingProject (BEI Business Engineering Institute St. Gallen)

Yet the path forward is not without **risks**. Issues such as cybersecurity threats, data quality, compliance burdens and liability remain unresolved. There are also broader concerns: the potential for market concentration, the exclusion of less tech-savvy users and a growing reliance on dominant data-driven players. Without a well-designed data strategy, these risks may undermine the long-term potential of smart finance.

The goals are well-defined, yet the paths to achieve them – and the regulatory and governance frameworks supporting these efforts – vary significantly across different countries. The timing of implementation plays a crucial role. In the following sections, we will briefly explore how different countries approach their financial data strategies and infrastructure development efforts.

III. International Developments[2]

a) Major Financial Centers Around the World

A. United Kingdom: A European Leading Example

The United Kingdom has consistently positioned itself as a leader in digital finance.[3] The UK's open banking framework was launched in 2018 by the **Competition and Markets Authority** (CMA), following a 2016 investigation into retail banking practices that focused on the nine largest banks. As a result, the CMA mandated these institutions to establish an open API banking standard within a year.[4] To support this initiative, the Open Banking Implementation Entity (OBIE) was created to develop standards for customer consent, authentication and dispute resolution. In 2024, OBIE was rebranded as **Open Banking Limited** (OBL) to continue overseeing the implementation and evolution of open banking standards.[5]

The Financial Conduct Authority (FCA) also played a critical role by aligning open banking with the broader regulatory landscape of the EU's Second Payment Services Directive (PSD2).[6] This alignment ensured open banking adhered to essential financial regulations and consumer protection measures. However, regulatory constraints limited the FCA's ability to enforce standards universally, as the CMA's directives applied solely to the nine largest banks. This resulted in a two-tier system where other providers were encouraged, rather than mandated, to adopt open banking standards, creating a narrower implementation scope. Despite this, the UK's open banking standards set a global benchmark due to their technological rigor and robust governance.

Following Brexit, the UK gained greater flexibility to address structural challenges within its regulatory and legislative landscape. The formation of the **Joint Regulatory Oversight Committee (JROC)**[7] – comprised of the FCA, CMA, HM Treasury and the Payment Systems Regulator (PSR) – has strengthened coordination among regulatory bodies, driving the advancement of open banking and open finance. In April 2023, JROC published a report envisioning open banking payments as a viable alternative to traditional card payments and established a framework for fraud data collection. The report emphasized the creation of a commercially sustainable environment with premium APIs[8], such as Variable Recurring Payments (VRPs). Additionally, the UK government has proactively updated privacy legislation to support the continued expansion of open banking.[9]

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[2] Given the limited availability of scientifically researched data on this topic, this discussion paper relies on publicly available sources believed to be accurate, relevant and not misleading (some of which are listed in Appendix VIII). It does not claim to be scientifically validated or exhaustive. As a discussion paper, it is intended to provide the basis for an informed debate, structure ideas and support further dialogue. AI language models were used solely to improve readability, not to generate content. For further details see also Appendix IX.

[3] Underpinned by one of the world's highest internet adoption rates: In 2022, 93% of the population accessed the internet, with projections indicating this figure will rise to 94% by 2027. This high level of digital readiness has played a crucial role in the UK's adoption of open banking; see https://ozoneapi.com/the-global-open-data-tracker/atlas/united-kingdom/.

[4] See https://www.gov.uk/cma-cases/review-of-banking-for-small-and-medium-sized-businesses-smes-in-the-uk.

[5] See https://www.openbanking.org.uk/about-us/.

[6] See https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015L2366.

[7] See https://www.psr.org.uk/our-work/joint-regulatory-oversight-committee/.

[8] "Premium APIs" refer to advanced, often paid APIs that offer additional or specialized functionalities beyond standard APIs. These may include enhanced fraud detection, improved data analytics or advanced payment solutions such as VRPs, which allow for dynamic and recurring payments without requiring individual authorization for each transaction.

[9] See https://www.gov.uk/government/publications/proposals-for-the-design-of-the-future-entity-for-uk-open-banking.

In October 2024, the UK introduced the Data (Use and Access) Bill[10], which seeks to extend open banking principles to additional sectors, including mortgages, pensions and investments. It envisions the establishment of **new standards bodies to drive the development of a comprehensive open data ecosystem**, particularly the new "Interface Bodies"[11].

For the UK to continue as a frontrunner in open finance and open data, these measures are essential, **with the ultimate goal of fully integrating AI to achieve a holistic, digitally-driven environment.**[12]

Key Insights

- The UK pioneered open banking adoption, setting a benchmark for financial integration across Europe.[13]
- Despite leaving the EU, the UK maintained PSD2 compliance to support its open banking framework. In 2017, the CMA mandated data sharing among largest banks to improve transparency and expand customer choice. Supporting these measures, UK General Data Protection Regulation (GDPR) and the Data Protection Act 2018 regulate personal data handling, ensuring that customer consent remains explicit and protected.[14]
- By January 2023, UK reached significant milestone when the CMA confirmed the nation's largest banks had achieved full open banking compliance. In April 2023, the JROC outlined a roadmap for future of open banking, which included 29 key steps to scale open banking and transition towards open finance.
- The introduction of the Data (Use and Access) Bill in 2024 aims to expand open banking to new sectors, including mortgages, pensions and investments.
- The UK's ultimate vision includes **integrating AI with open finance and open data**, aiming for comprehensive **transformation into a holistic ecosystem**. Important in this respect the work of the non-profit Open Data Institute (ODI).[15]

B. United States: From Market-Driven to Regulatory-Oriented

Over 90% of the U.S. population has access to the internet, with 99% of individuals aged 18-29 using the internet compared to 75% of those aged 65 and over. This high level of internet access, particularly among younger demographics, has supported the widespread adoption of digital financial services and lays a strong foundation for open banking and open finance initiatives.[16]

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[10] See https://bills.parliament.uk/bills/3825: The UK's Data (Use and Access) Bill was introduced to Parliament on 23 October 2024 and is currently undergoing legislative review. It is expected to come into force in the first half of 2025, subject to parliamentary approval.

[11] "Interface Bodies" are designed to oversee compliance with data standards and facilitate secure and interoperable data sharing across sectors such as mortgages, pensions and investments, addressing gaps left by OBL, which primarily focuses on banking and lacks the broader regulatory and technical scope required for a fully integrated open data ecosystem.

[12] See https://theodi.org/news-and-events/blog/data-success-use-and-access-what-parliament-needs-to-consider-for-the-data-use-and-access-bill/?utm .

[13] The UK has cemented its position as Europe's open banking leader, recording the highest API call volume and payment processing rates on the continent. In October 2023 an impact report revealed that, over four years, 11% of UK consumers and 17% of small businesses had become active open banking users (see https://www.openbanking.org.uk/news/open-banking-impact-report-october-2023/). By July 2024, over 10 million API calls (see https://www.openbanking.org.uk/news/open-banking-marks-major-milestone-of-10-million-users/). Transaction volumes have surged, with 14.5 million payments in January 2024, a 69% year-over-year increase. Open banking is now a preferred method for higher-value transactions, averaging £450 per payment compared to £36 for traditional card payments (see https://www.openbanking.org.uk/insights/latest-impact-report-shows-strong-growth-and-the-power-of-payments/?utm_source=chatgpt.com). The rise of Personal Finance Management (PFM) apps has further driven adoption, with 76% of users reporting improved savings and financial control (see https://www.openbanking.org.uk/insights/key-consumer-insights-from-the-open-banking-impact-report/). By mid-2024, the market's value surpassed £4 billion, with forecasts projecting £28 billion, fueled by AI and smart data integration (see https://ozoneapi.com/the-global-open-data-tracker/atlas/united-kingdom/). The UK remains at the cutting edge of financial innovation, sustaining a thriving, competitive ecosystem powered by thousands of FinTech firms (see https://www.deloitte.com/uk/en/Industries/financial-services/perspectives/uk-fintech-landscape.html).

[14] See https://www.gov.uk/government/publications/consent-privacy-policy/consent-policy?utm .

[15] See ODI White Paper, July 2024, p. 12: "Building a better future with data and AI requires a collective commitment to ethical, transparent and innovative practices. This white paper outlines the critical steps required to strengthen the data infrastructure on which AI is built, enabling it to reach its full potential as a force for economic and social good in the UK; from ensuring broad access to high-quality, well-governed data for key datasets, to enforcing data protection and intellectual property rights. Sectors such as healthcare, finance and transport have significant opportunities. But individuals and communities need to be empowered to ensure they have a say in how data is used in these sectors and beyond."; available at: https://theodi.cdn.ngo/media/documents/Building_a_better_future_with_data_and_AI__a_white_paper.pdf.

[16] See https://ozoneapi.com/the-global-open-data-tracker/atlas/united-states/.

Open finance in the United States began in the early 2000s, with companies like Yodlee and Cashedge pioneering account aggregation using **screen scraping technology**, initially without clear regulatory frameworks. Unlike Europe, where FinTechs led the charge in open banking, major U.S. financial institutions were among the first to adopt these solutions. By 2004, several large institutions allowed customers to view consolidated financial information across multiple brands. Screen scraping required customers to share static passwords.[17] This practice became common and helped users become familiar with newer FinTech applications. As a result, account aggregation services experienced significant growth. By 2018, these services had approximately 80 million users, representing about one-third of U.S. bank account holders. The introduction of the iPhone further accelerated the use of FinTech services. It allowed for the development of more advanced and user-friendly financial applications.[18]

However, this rapid development also created challenges, particularly around security risks, liability and control. Financial institutions were required to supervise the technology providers connecting to them, which led to liability questions and barriers for new entrants due to lengthy negotiations for access. The move from screen scraping to API-based technology around 2015 shifted the control of data access to financial institutions, which began to make commercial decisions about the terms of API use, occasionally restricting FinTech services and limiting customer choice. The Dodd-Frank Wall Street Reform and Consumer Protection Act, enacted in 2010, included provisions to protect consumers when sharing their data. **Section 1033** of the Act empowered the **Consumer Financial Protection Bureau (CFPB)** to develop rules governing open finance. The CFPB initiated consultations in 2016 and, after extensive input, issued a Notice of Proposed Rulemaking (NPRM) in October 2023 to enforce Section 1033. Subject to pending court review and possible changes by the new U.S. administration, this ruling aims to mandate that both depository and non-depository institutions allow consumers to share their data **via secure APIs**, thereby eliminating screen scraping practices.[19]

Key Insights

- The open banking landscape in the U.S. evolved significantly, driven primarily by market dynamics.
- The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 introduced key consumer protections for data sharing. In October 2023, CFPB began enforcing Section 1033 of this Act, requiring both depository and non-depository institutions to enable customer data sharing through secure APIs, effectively phasing out screen scraping practices.
- The **Financial Data Exchange** (FDX)[20], formed by non-profit Financial Services Information Sharing and Analysis Center (FS-ISAC)[21], spearheaded shift from screen scraping to APIs, creating a secure, standardized framework. Notably with the FDX API, a technical standard designed to facilitate a secure, permission-based financial data sharing.[22]
- By 2023, there were an estimated **80 million active accounts** in the U.S. utilizing open banking services, positioning country as global leader in adoption.

C. Singapore: A Digitally Advanced Market with MAS at the Forefront

Singapore adopts a collaborative, market-driven approach to open finance, with the **Monetary Authority of Singapore** (MAS) playing a pivotal role in shaping the ecosystem. MAS defines key industry standards and frameworks, ensuring security and reliability, while financial institutions, FinTech companies and other stakeholders drive innovation by developing customer-centric solutions aligned with these standards.

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[17] A highly insecure practice which is widely being legislated against across the world.

[18] See https://ozoneapi.com/the-global-open-data-tracker/atlas/united-states/.

[19] See Required Rulemaking on Personal Financial Data Rights | Consumer Financial Protection Bureau; https://www.ft.com/content/fcd6e70f-60e3-40c2-876b-e4a8a90084c2?utm .

[20] FDX is a non-profit organization that focuses on developing and promoting industry standards for secure financial data exchange.

[21] FS-ISAC is a global industry consortium focused on sharing information on cyber and physical threats in the financial services sector.

[22] See https://financialdataexchange.org/FDX/FDX/About/About-FDX.aspx?hkey=dffb9a93-fc7d-4f65-840c-f2cfbe7fe8a6.

In December 2020, MAS and the Smart Nation and Digital Government Group (SNDGG) launched the **Singapore Financial Data Exchange** (SGFinDex).[23] This platform enables individuals to consolidate financial information from various institutions, simplifying and enhancing their financial planning. By November 2021, SGFinDex expanded **to include data from government agencies** and additional financial institutions, making financial planning more comprehensive and accessible.[24]

Key Insights

- Singapore's market-driven approach to open finance emphasizes MAS's leadership as both a facilitator and a standard-setter.
- Introduction of **SingPass** in 2003 established a secure digital identity infrastructure.
- MAS launched SGFinDex in 2020, integrating SingPass as a Single-Sign-On (SSO) solution to facilitate financial planning and data aggregation.
- MAS maintains a registry of open APIs to promote transparency and streamline market entry for new players.
- It also strengthens international interoperability by leading initiatives like the **ASEAN Financial Innovation Network (AFIN)**.
- Through AFIN, MAS launched **APIX**, a platform for API sharing and collaboration across Southeast Asia.
- Nearly 6 million Singaporeans, or 97% of residents over 15, are registered with SingPass.
- Digital payments have surged, with **PayNow** adoption reaching 80% of residents and businesses.[25]

D. UAE: A Regional Leader in FinTech and Open Banking

With substantial public investment, the UAE has pursued a regulatory-driven approach to open banking, led by the **Central Bank** and other entities like **Abu Dhabi Global Market** (ADGM), working collaboratively to enhance its financial services ecosystem.[26]

Key Insights

- In 2019, ADGM established API regulatory guidelines.[27]
- There is a strong emphasis on interoperability. FinTechs in the UAE are developing universal API platforms to enhance cross-border interoperability between banks and third-party providers (TPPs) across the **Middle East and North Africa (MENA)** region.
- This regional approach links the UAE with neighboring markets such as Saudi Arabia and Bahrain, fostering cross-border financial services and expanding open banking frameworks.

b) Further Relevant Developments

A. Germany: Regulatory-Driven Progress with Cultural Barriers

Germany operates under the EU's PSD2 regulation, which mandates open banking across the EU; enforcement and accountability are handled at the national level. Despite strong regulatory foundations and the adoption of the **Berlin Group's NextGenPSD2** API standard, Germany's open banking progress faces cultural and operational challenges and remains slow, particularly with its cash-preference culture and limited guidance on implementing open banking solutions.[28]

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[23] See https://www.mas.gov.sg/news/media-releases/2020/digital-infrastructure-to-enable-more-effective-financial-planning-by-singaporeans.

[24] See https://www.mas.gov.sg/development/fintech/sgfindex.

[25] See https://ozoneapi.com/the-global-open-data-tracker/atlas/singapore/.

[26] See https://ozoneapi.com/the-global-open-data-tracker/atlas/united-arab-emirates/.

[27] See https://www.adgm.com/media/announcements/adgm-publishes-regulatory-guidance-for-application-programming-interfaces?utm_source=.

[28] See https://ozoneapi.com/the-global-open-data-tracker/atlas/germany/. Worthwhile to mention is that the European Commission published draft proposals in June 2023 for a new Payment Services Directive (PSD3) and a Payment Services Regulation (PSR), which together intend to replace PSD2. Aim is to further harmonize rules, expand consumer protections, and address new market developments, such as enhanced requirements for strong customer authentication, improved access for payment service providers, and real-time permission dashboards for account

B. Brazil: Leading Latin America's Open Finance Transformation

Brazil is a leader in financial services integration with a regulatory framework and broad public support. With the **Central Bank of Brazil (BCB)** at the forefront, open finance includes not only banking data but also insurance and investment services.[29] Brazil's comprehensive approach has made it a benchmark for open finance in Latin America. Open banking enjoys widespread acceptance, with 75% of Brazilians willing to share data for improved services. A Bretton Woods paper conluded that the Brazilian success story was inter alia due to the government having played an active role in setting the ground rules and ensuring that the incentives are aligned to support household and business use of new systems. Also that when the incumbent payments regime is inefficient that there is a greater likelihood that innovation will lead to rapid take-up and widespread adoption of a new alternative.[30]

C. Canada: Transitioning to Regulated Open Banking

Canada's open banking framework has so far followed a hybrid model of government oversight and industry collaboration. By June 2024, the **Financial Consumer Agency of Canada (FCAC)** assumed responsibility for overseeing and enforcing Canada's strategy for implementing open banking. The 2024 Fall Economic Statement further introduced plans for comprehensive legislation covering critical aspects such as TPP accreditation, security and privacy standards.[31]

D. Australia: An Ambitious yet Challenging Initiative

Australia's open banking journey, under the **Consumer Data Right** (CDR) launched in 2019, aims to establish an inclusive data-sharing ecosystem across multiple sectors. CDR mandates third-party accreditation, with two levels allowing various data-sharing permissions. Adoption has faced hurdles due to complexity and cost.[32]

c) OECD Studies

A **study of 2021**[33] provides an analysis of **data portability initiatives, opportunities and challenges.** It explores to what extent data portability can empower users (natural and legal persons) to play a more active role in the re-use of their data across digital services and platforms. It also examines how data portability can help increase interoperability and data flows and thus enhance competition and innovation by reducing switching costs and lock-in effects. The study finds that data portability can empower users — both individuals and businesses — by giving them greater control over their data and enabling them to reuse it across different services. This empowerment can help reduce switching costs and lock-in effects, thereby enhancing competition and fostering innovation in digital markets.

A **study of 2023**, titled "**Shifting from Open Banking to Open Finance**"[34], analyses data-sharing frameworks across OECD and non-OECD countries and explores the shift from open banking to open finance, including insurance,

holders. Also, the Financial Data Access Regulation (FiDA) proposal aims to expand the scope of data sharing in the financial sector from open banking (PSD2) to open finance, covering a broader range of financial data and institutions. Trilogue negotiations between the Commission, Parliament and Council are currently in progress, with the aim of finalizing the regulation in the second half of 2025.

[29] Following the 2020 General Data Protection Law (LGPD), Brazil's open finance regulation now governs data from banking to insurance. The governance structure includes a deliberative council with diverse financial representation.

[30] Bretton Woods, A Dual Strategy to Transform Cross-Border Payments, December 2024, p.12, see https://www.brettonwoods.org/sites/default/files/documents/ADualStrategytoTransformCrossBorderPayments_1.pdf.

[31] See Canada's 2024 Fall Economic Statement: https://www.canada.ca/en/department-finance/news/2024/12/2024-fall-economic-statement-canadas-complete-framework-for-consumer-driven-banking.html.

[32] See https://ozoneapi.com/the-global-open-data-tracker/atlas/australia/ or strategic review in 2024 by Australian Banking Association and Accenture at https://www.ausbanking.org.au/wp-content/uploads/2024/07/CDR-Strategic-Review_July-2024.pdf.

[33] See https://www.oecd.org/content/dam/oecd/en/publications/reports/2021/12/mapping-data-portability-initiatives-opportunities-and-challenges_97cd728b/a6edfab2-en.pdf.

[34] See https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/01/shifting-from-open-banking-to-open-finance_1a650f63/9f881c0c-en.pdf.

pensions and investments. The study finds evidence that such frameworks have already led to increased competition, lower costs and better service offerings, particularly in payments, credit scoring, debt management and wealth management.

A subsequent **report of 2023**, titled "**Data portability in Open Banking**"[35], brings together the views of private and public experts from a wide variety of countries to explore opportunities and challenges of open banking for financial regulation, privacy protection and competition. It discusses the different approaches taken by jurisdictions across the globe and the importance of regulation and standards. It finds that open banking and data portability can deliver significant benefits, such as empowering consumers or fostering innovation in financial services.

A further **report of 2023**, titled "**Open Finance Policy Considerations**"[36], provides an in-depth analysis of the benefits, risks and implementation challenges associated with open finance frameworks. The report emphasizes the importance of responsible and secure access to customers' financial data, highlighting key considerations such as data privacy, consumer consent, liability and the development of technical data infrastructure to promote data interoperability. It concludes that open finance—enabling the sharing and access of financial sector data—offers significant opportunities to improve financial products and services, foster innovation, and empower consumers by giving them greater control over their financial data.

IV. Switzerland: Status Quo and Outlook

a) The Swiss Market-Driven Approach

Switzerland's approach to open finance has so far been purely **market-driven**. Unlike other jurisdictions that have introduced regulatory mandates, Swiss financial institutions have voluntarily collaborated to develop industry standards and scalable solutions.

This has led to the establishment of a centralized hub for conceptual work and API standardization under the Swiss Fintech Innovations (SFTI) **Common API Working Group**[37] where financial institutions and 11 FinTechs and TPPs jointly collaborate on the technical framework and API standards for open finance in Switzerland with a focus on retail banking use cases like account information, payment initiation, pension (open pension) and mortgages. For wealth management use cases the **OpenWealth Association** assumed a voluntary and private lead for the definition of the OpenWealth API standard, which is also published under the umbrella of the Common API standard. The OpenWealth API has its origin in Switzerland but is defined as a global standard and also used in Lichtenstein and Singapore. These initiatives primarily concentrate on B2B use cases, like the connectivity to small and medium-sized enterprises (SMEs) and financial intermediaries, which is a natural evolution in a market driven approach where efficiency and scalability are the key drivers for adoption. All Common API standard specifications are publicly available for collaboration and adoption on the SFTI GitHub repository.[38] In addition, the OpenWealth Association has a sandbox to foster innovation by FinTechs. It includes a full security and consent flow as well as synthetic data, allowing end-to-end simulation of use cases.[39] To our information, there is no publicly available information on the usage of the OpenWealth API.

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[35] See https://www.oecd.org/en/publications/data-portability-in-open-banking_6c872949-en.html.

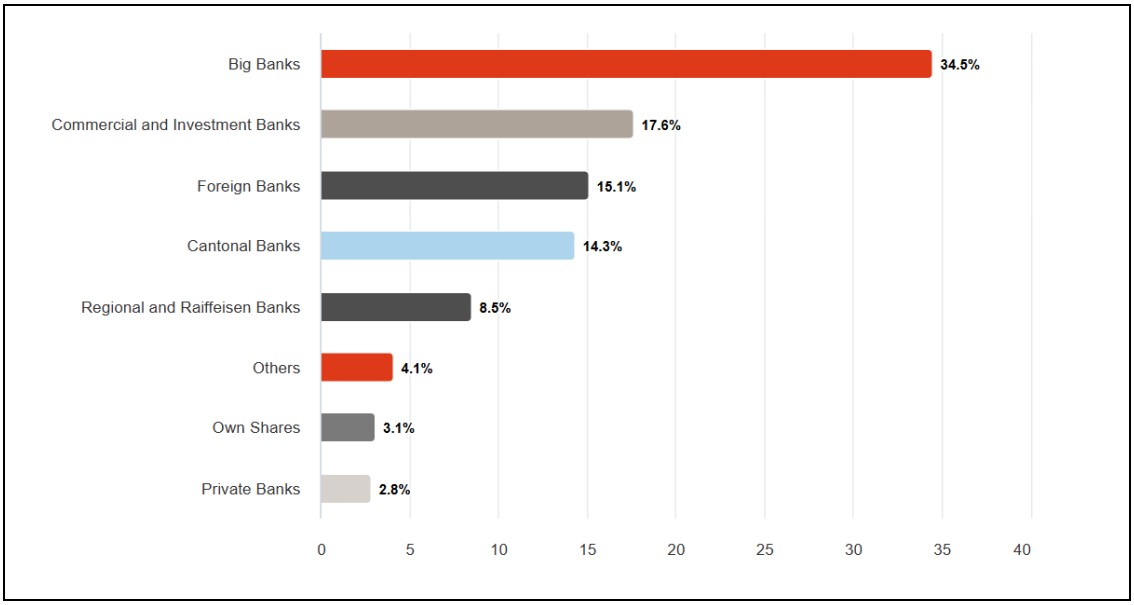
[36] See https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/11/open-finance-policy-considerations_932ba548/19ef3608-en.pdf.

[37] See https://swissfintechinnovations.ch/projects/common-api/; https://github.com/swissfintechinnovations; https://www.swissbanking.ch/de/themen/digitalisierung-innovation-cyber-security/open-banking; https://openwealth.ch.

[38] See https://github.com/swissfintechinnovations.

[39] See https://openwealth.ch/sandbox.

An initiative within the Swiss ecosystem is **bLink**, a platform developed by SIX[40] to enable secure, standardized data exchange between banks, FinTechs and other financial service providers.[41] Its emergence underscores the industry's slowly growing recognition of the need for efficient and interoperable data-sharing: 14 banks as well as 24 FinTechs and TPPs are onboarded. However, a challenge remains unresolved: interoperability with the EU's PSD2 framework. While technical API compatibility has been established, the absence of harmonized consent management mechanisms continues to hinder seamless integration with the EU's regulatory-driven model. To overcome that challenge bLink, SFTI and the OpenWealth Association are working on a harmonized security and consent framework based on the internationally accepted **FAPI (financial grade API) standard**[42]. Another challenge to overcome may be a growing need for transparency by regulators or the wider public, e.g. regular information on metrics such as the number of API calls or API performance. From a competition and negotiation perspective, a third challenge may possibly lie within the inherent overall ownership structure and governance: bLink is part of SIX which is controlled by banks.



Source: https://www.six-group.com/en/company/governance.html

At least until a few years ago, public awareness of open banking and open finance remains limited. While industry professionals demonstrated strong support for open finance, as highlighted by a study conducted by the Business Engineering Institute St. Gallen in collaboration with **OpenBankingProject.ch**, this has at the time of the study not translated into widespread adoption. The study revealed significant backing for open banking across diverse industry backgrounds, despite varying levels of knowledge. This suggests that Switzerland has considerable potential for broader open banking adoption – provided that awareness increases and tangible service offerings emerge.[43]

Interesting enough and according to a recent academic study "**Embedded Banking and BaaS in Switzerland: Outlook 2024**"[44] by Synpulse and the Swiss NextGen Finance Institute under the co-lead of Dr. Manuel Thomet, Prof. Dr. Bernhard Koye and Yves Schuster, open banking in Switzerland seems to also evolve into embedded banking. Embedded banking causes a transformation of the traditional banking value chain. The study has examined both the demand and supply side. Emerging business models were thoroughly analyzed, and all key stakeholders were included

[40] SIX Group is a privately held company owned by its users, primarily composed of Swiss banks. The ownership is broadly distributed among more than 120 national and international financial institutions, with no single majority shareholder. This cooperative structure reflects SIX's role as a market infrastructure provider serving the Swiss financial center.

[41] The relevant API standards for wealth management are defined by the OpenWealth Association in close collaboration with service providers (e.g., bLink, banks and wealth techs).

[42] See https://github.com/swissfintechinnovations/ca-security/wiki.

[43] See https://ozoneapi.com/the-global-open-data-tracker/atlas/switzerland/; https://mastercardcontentexchange.com/news/media/wxwih35b/2mc20299_mc_ch_whitepaper_part_1_en_vf_31-9.pdf.

[44] See https://synpulse8.com/embedded-finance.

in the survey. On the demand side, findings indicate that Swiss consumers are already widely adopting embedded banking services, with the tipping point[45] surpassed in three out of five banking service areas. On the supply side, banks and non-bank service providers acknowledge the strategic and economic significance of embedded banking for non-banks and BaaS for banks. To further harness the economic potential of these business models, the study recommends (continued) fostering of an industry-wide dialogue through relevant associations which though should include all key stakeholders and associations to seize the opportunities and not be left behind in the process of "creative destruction". See chapter d) hereinafter for more coverage on the study.

When it comes to **adoption of AI in Switzerland**, despite an estimated 11% GDP growth projected in the Google mandated study "The Economic Opportunity of AI in Switzerland" (2024)[46], the Swiss financial ecosystem seems to embrace the new technology rather cautiously. As the full potential of AI can only be unleashed in combination with available, secured and high-quality data and an integrated data infrastructure, the necessity to boost a governance framework in that respect in place seems more important than ever.

b) Assessments by the Federal Council and Political Initiatives

Recognizing the strategic importance of open finance, the Swiss Federal Council (FC) has taken steps to monitor industry progress. In its **Digital Finance Report**[47] published in February 2022, the FC emphasized the need for periodic evaluations. In December 2022, it mandated the Federal Department of Finance (FDF) to assess the sector's advancements and propose measures by mid-2024 if progress towards published open finance objectives remained insufficient.[48] It has instructed the FDF to submit measures to it by June 2024 in the event that the financial sector does not sufficiently commit to opening up its interfaces. In addition, the Federal Department of Home Affairs (FDHA) is to examine how digital access to retirement provision data can be appropriately promoted. The overarching goal is to enhance Switzerland's competitiveness through standardized, secure and scalable open interfaces.[49]

Concretely, the 2022 open finance objectives aim to strengthen (i) the ability of individuals to freely use their financial data, including to benefit from new services, and (ii) the innovative capacity and competitiveness of the Swiss economy and the financial center. The objectives contain inter alia guidelines as to standardization, the design and adoption of open interfaces as well as the scalability potential for TPP access:

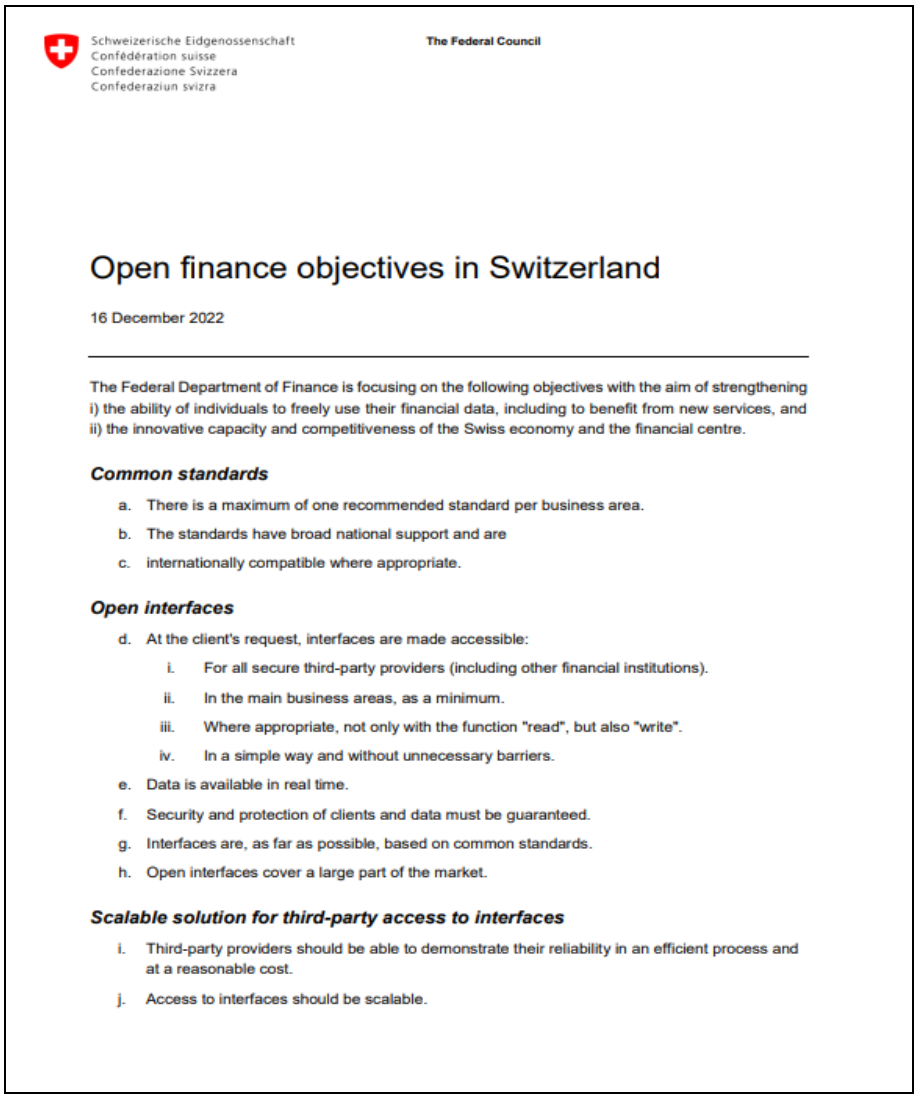
[45] Tipping point means that if a sufficiently large number of users effectively utilize a new offering, the remaining users will also adopt this innovation—a pull effect is created through positive feedback.

[46] The study estimates an annual GDP potential of CHF 80-85 billion in the peak year, which could be the case in just 10 years, if generative AI is introduced fast and across the board, see https://implementconsultinggroup.com/article/the-economic-opportunity-of-generative-ai-in-switzerland.

[47] See https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-87024.html?utm_.

[48] See https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-92275.html?utm_.

[49] See https://www.newsd.admin.ch/newsd/message/attachments/88266.pdf.



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

The Federal Council

Open finance objectives in Switzerland

16 December 2022

The Federal Department of Finance is focusing on the following objectives with the aim of strengthening i) the ability of individuals to freely use their financial data, including to benefit from new services, and ii) the innovative capacity and competitiveness of the Swiss economy and the financial centre.

Common standards

a. There is a maximum of one recommended standard per business area.
b. The standards have broad national support and are
c. internationally compatible where appropriate.

Open interfaces

d. At the client's request, interfaces are made accessible:
   i. For all secure third-party providers (including other financial institutions).
   ii. In the main business areas, as a minimum.
   iii. Where appropriate, not only with the function "read", but also "write".
   iv. In a simple way and without unnecessary barriers.
e. Data is available in real time.
f. Security and protection of clients and data must be guaranteed.
g. Interfaces are, as far as possible, based on common standards.
h. Open interfaces cover a large part of the market.

Scalable solution for third-party access to interfaces

i. Third-party providers should be able to demonstrate their reliability in an efficient process and at a reasonable cost.
j. Access to interfaces should be scalable.

Source: https://www.newsd.admin.ch/newsd/message/attachments/74566.pdf

A core element of this vision is the development of trusted data spaces. The **FC's March 2022 report, Creation of Trusted Data Spaces Based on Digital Self-Determination**, identified significant untapped potential in structured data access.[50] It highlighted the need for a framework that ensures data accessibility while allowing individuals and institutions to retain full control over their financial information. This concept aligns with Switzerland's broader emphasis on digital self-determination.[51] This is amplified by Digital Switzerland Strategy 2024 where the Federal Chancellery serves as a central hub for the ecosystem.[52]

In 2023, progress was made in **multibanking initiatives** with 40 banks[53] supporting efforts to improve cross-account data access.[54] In June 2024, the FC reviewed this initiative and concluded that industry-led efforts were sufficient at that time, opting against immediate regulatory intervention. However, the FDF will continue monitoring developments,

[50] See https://www.admin.ch/gov/de/start/dokumentation/medienmitteilungen.msg-id-87780.html.

[51] See Appendix d.

[52] See https://www.bk.admin.ch/bk/en/home/digitale-transformation-ikt-lenkung/digitale-schweiz.html#1336108628.

[53] See https://www.swissbanking.ch/_Resources/Persistent/a/d/f/d/adfdc06e6140d11f01e3970713fc585c041b86dd/Retail_Multibanking_MoU_EN.pdf.

[54] See https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-101491.html?utm_.

particularly regarding the inclusion of non-bank TPPs such as FinTechs and the insurance sector's commitment to open finance. A reassessment of the need for regulatory measures is scheduled for the end of 2025.[55]

Meanwhile, open finance has also gained traction in the political arena. In September 2024, **National Council member Marcel Dobler** submitted an interpellation questioning the FC on the potential development of a Pension Tracking System (PTS). While the FC ruled out a full-fledged PTS, the Federal Department of Home Affairs (FDHA) was tasked with exploring ways to improve digital pension data access.[56] In December 2024, Mr. Dobler[57] and **Council of States member Erich Ettlin**[58] introduced motions calling for secure digital access to all three pension pillars via standardized interfaces under federal oversight. These legislative initiatives reflect a growing recognition of open finance (open pension) as a tool to enhance financial transparency and accessibility. The FC reaffirmed its expectation that occupational pension providers and third-pillar institutions grant insured persons secure digital access to their pension data through standardized interfaces. Should progress remain insufficient within a reasonable timeframe, the FC stands ready to mandate the FDHA to consult with stakeholders on additional measures, including standardized interfaces for enhanced pension transparency.

Despite the Federal Council's recommendation for rejection, **the Council of States approved the proposal**. During the debate, Mr. Ettlin underscored the need for a simple, accessible pension dashboard, stating:

"(...) there must be simple access for everyone, including both pension provision and AHV. ***Ideally, there should be a dashboard where one can check:*** *What is my current pension situation? What is my retirement status today? And – if interactive features allow for inputting data – what happens if I increase or decrease my workload? What impact does that have on my AHV and occupational pension? How would my financial situation look then? This should actually be possible. I can hardly understand why it isn't."*[59]

From a non-representative field survey conducted by FIND with 100 finance professionals in March 2025, 99% were not certain what their current pension situation was. The sole exception was an elderly person who just recently retired. The question arose: if finance professionals don't have the information readily available, what about laypeople? The authors of this report hence agree with Mr. Ettlin and propose to go one step further with a thesis: Individuals – whether finance professionals or not – will appreciate having full transparency over their old age funds in the 1st, 2nd and 3rd pillar and are willing to pay for getting financial alerts or digital advice by their trusted bank or a TPP if their retirement situation can be optimized or if certain live trigger events call for an adjustment.[60]

c) Remaining Challenges

While Switzerland's market-driven approach has spurred innovation, several strategic challenges remain, inter alia regarding digital security and privacy risks and liabilities, binding cross-sectoral minimum standards and APIs and a **cross-sectoral (public-private agency) approach** regarding regulatory and enforcement co-operation.

Wherever an overriding public interest exists, regulatory intervention is often necessary. However, Switzerland does not need to follow an overregulated model but could instead adopt **a minimal regulatory approach**, addressing only those aspects where clear rules are essential – such as data integrity, consent management and user rights. A balanced regulatory framework could foster trust and drive cross-sectoral adoption while maintaining flexibility for market-driven innovation.

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[55] See https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-101491.html?utm .

[56] See 24.3975 | Die Schweizerinnen und Schweizer brauchen innovative Lösungen zur Verbesserung der Transparenz, Flexibilität und Kontrolle über die Altersvorsorgeinvestitionen | Geschäft | Das Schweizer Parlament.

[57] See 24.4487 | Standardisierten Zugang zu persönlichen Vorsorgedaten ermöglichen | Geschäft | Das Schweizer Parlament.

[58] See 24.4597 | Standardisierten Zugang zu persönlichen Vorsorgedaten ermöglichen | Geschäft | Das Schweizer Parlament.

[59] Tentative English translation of German text by FIND.

[60] Noteworthy also that the academic study "Embedded Finance and Banking as a Service in Switzerland" surveyed that consumers are ready for embedded finance in the area of retirement planning/savings: With 26.6% the tipping point of 16% is far exceeded. For more details see dedicated chapter in this report.

For financial institutions, well-calibrated governance and minimal regulation could offer significant advantages. Specifically, if compliance processes such as KYC and AML processes were set up in a smart way through reliable and trusted data sharing, financial institutions could benefit from significantly reduced compliance costs and authorities would get consistent and better data. There are several industry initiatives, which could in our view lead to a bigger impact if standardized and consent-based data sharing is implemented across sectors and borders, allowing subsequently also to (fully) tap the potential of AI. For this, a coordinated and necessary regulatory boost seems key.[61] Towards this end, FIND has initiated a low-cost pilot project together with Federal Chancellery and MROS which – subject to commitment and available resources of further key stakeholders involved – gathers information on current data sharing processes between the private and the public sector in AML matters. The pilot project may prove useful for later large-scale projects. While the initial investment in technology and infrastructure – such as developing and implementing secure API frameworks – may be high, costs would be offset in the long run through increased efficiency and lower ongoing compliance expenses.

Interoperability across sectors and borders remains another decisive factor. Without standardized frameworks for consent management and data-sharing, seamless integration with PSD2 and other international regulatory models will be difficult to achieve. A forward-looking open finance strategy should ensure that financial data is structured and accessible in a way that guarantees interoperability and makes it AI-ready.

Finally, **public awareness** remains a critical issue. Without a clear understanding of open finance's benefits and risks, adoption is likely to remain sluggish. Targeted incentives may be necessary to drive engagement and ensure an inclusive transition. Without greater awareness and trust, even the most advanced financial ecosystem risks failing to gain traction among customer and businesses. Ultimately, Switzerland must determine whether its current approach is sufficient to maintain competitiveness or if a more proactive stance is needed to shape the future of a **secure and more integrated data infrastructure** – striking a balance between the various public interests such as competitiveness, market innovation, market growth and stability, consumer protection and consumer empowerment, data protection and other public interests.

d) Selected Academic Literature

In his article, **Open Finance und Decentralized Finance – Entwicklungen in einem disruptiven Finanzmarktumfeld**[62], Rolf H. Weber analyzes the evolving landscape of open finance and decentralized finance (DeFi), emphasizing their disruptive impact on traditional financial systems. He outlines how open finance – characterized by regulated data access and API interoperability – aims to foster competition and transparency, while DeFi leverages distributed ledger technology (DLT) to eliminate intermediaries altogether. Although both approaches differ technologically and institutionally, they share a common goal: creating open financial ecosystems. Weber highlights that traditional regulation frameworks, designed around centralized intermediaries, are increasingly inadequate in addressing the regulatory needs of decentralized infrastructures. He argues for new regulatory mechanisms, including data access rights, digital identity frameworks (e.g., self-sovereign identity) and international interoperability standards. The article stresses the need for horizontal regulation that cuts across sectors rather than vertical silos, especially as embedded finance blurs industry boundaries. The article also traces the evolution of EU and Swiss regulatory approaches, such as EU's PSD2 and Digital Finance Package or the Swiss FinTech license or DLT Act. Weber concludes that **forward-looking legal frameworks must evolve alongside technological advancements** to ensure financial stability, consumer protection and market integrity in a decentralized and data-driven financial world.

David Roth, **«Open Banking» in der Schweiz – Herausforderungen an den Schnittstellen von Finanzmarkt-, Datenschutz- und Kartellrecht**[63], explores the strategic and regulatory implications of open banking in Switzerland. The article distinguishes between "API banking" and "open banking", defining the latter as a special category where access

[61] OpenBankingProject.ch assessed the "Establishment of a Trust Network in the Area of "Customer Onboarding + KYC" in March 2022, see https://www.openbankingproject.ch/media/1317/obp-cokyc-vertrauensnetzwerk-management-summary.pdf; the Swiss Banking Association recommended concrete measures to improve collaborative fraud prevention in Swiss payments in April 2025, see https://www.swissbanking.ch/en/news-and-positions/news/sba-recommends-concrete-measures-to-improve-collaborative-fraud-prevention-in-swiss-payments.

[62] See Rolf H. Weber, Open Finance und Decentralized Finance – Entwicklungen in einem disruptiven Finanzmarktumfeld, in: Swiss Review of Business and Financial Market Law (SZW), 2022, pp. 359–369.

[63] See David Roth, «Open Banking» in der Schweiz – Herausforderungen an den Schnittstellen von Finanzmarkt-, Datenschutz- und Kartellrecht, in: Swiss Review of Business and Financial Market Law (SZW), 2020, pp. 669–685, Schulthess Juristische Medien AG, ISSN 1018-7987.

to bank accounts (XS2A) must be granted on non-discriminatory terms. It emphasizes that Swiss financial institutions are currently under no legal obligation to provide such access, which limits the scope for open banking. The author examines legal considerations related to data protection, consent requirements and competition law (in particular art. 7 para. 1 of the Federal Act on Cartels and other Restraints of Competition[64]), highlighting how the lack of mandatory data access undermines innovation and competition. The article compares Swiss developments to those in the EU and UK, especially the UK's implementation of PSD2 and the establishment of the Open Banking Implementation Entity (OBIE), which successfully standardized APIs and boosted innovation. Roth concludes that **Switzerland's market-led approach has led to fragmentation and limited progress**, and he calls for a more structured regulatory framework to ensure interoperability and non-discriminatory data sharing.

In their chapter **§17 Open Banking** in the book **Fintech und DLT – Privat- und finanzmarktrechtliche Grundlagen in der Schweiz[65]**, Thomas Jutzi and Andri Abbühl provide a detailed legal and conceptual overview of open banking in Switzerland. The authors clarify how APIs enable TPPs to access bank customer data, allowing for services such as payment initiation and account information. While open banking can foster competition and innovation, its implementation in Switzerland remains limited due to cost barriers, lack of standardization and legacy systems. The chapter distinguishes open banking from outsourcing and explores the legal implications under Swiss law, particularly regarding data protection and the Swiss Financial Services Act. It also discusses the differences between open banking, open finance, and DeFi, highlighting the evolving role of big tech companies in a shifting financial ecosystem. The authors argue that although Switzerland has no binding legal framework for open banking, there is growing regulatory interest in creating one, inspired by international developments like PSD2 in the EU.

The **IFZ Open Banking Study of 2022**[66] provides an analysis of open banking in Switzerland and concludes that banks underestimate open banking and the implications of this development for two reasons: (1) The topic is –falsely – perceived as **a problem for IT** rather than as a strategic challenge, and (2) The focus in IT is too quickly placed on APIs, overlooking the fact that open banking will also bring about fundamental changes to banking IT. The result was supported by an IFZ survey of banks, which found that when asked who is driving the topic within the bank, IT ranked ahead of management, while the opposite was true for ecosystems and platforms. To fully understand the scope of open banking and to coordinate and align the various components within a bank, IFZ provided the following overview (available in German only):

	Projekt		Betrieb	
Ebenen	Geschäftsidee/ Use Case	Realisierung / Gestaltung Wertschöpfungskette	Geschäftsbetrieb	Datenmanagement
Strategie	Vision / Projekt	Kooperationen / Partnerverträge	Business-Vorgaben / Überwachung	Umgang mit Daten / Richtlinien und Vorgaben
Operatives Business	Business Case	Prozesse und Rollen definieren	Marketing / Vertrieb / Operations	Umsetzung der internen Vorgaben und Richtlinien/ Vermeidung von Risiken
Technische Ebene	Tech. Rahmen-bedingungen und Machbarkeit	Schnittstellen realisieren	Applikationsbetrieb	Datenaustausch / -überwachung
Daten-Ebene	Erforderliches Datenset	Welcher Partner stellt welche Daten bereit	Ein- und Auslieferung von Daten	Speichern und Löschen von Daten

Source: Areas within the bank that need to be coordinated with regard to open banking (IFZ Open Banking Study 2022)

[64] Art. 7 para. 1 Cartel Act: «Dominant undertakings and undertakings with relative market power behave unlawfully if, by abusing their position in the market, they hinder other undertakings from starting or continuing to compete, or disadvantage trading partners". Roth though dismisses the Cartel Act as a viable protective measure since too costly and lengthy (appeal) procedure must regularly be followed.

[65] See Thomas Jutzi and Andri Abbühl, §17 Open Banking, in: Fintech und DLT – Privat- und finanzmarktrechtliche Grundlagen in der Schweiz, Stämpflis juristische Lehrbücher, Stämpfli Verlag AG, Bern, 2023, pp. 321–333. ISBN 978-3-7272-3548-1.

[66] See https://hub.hslu.ch/retailbanking/open-banking-von-banken-unterschaetzt/.

The **Data and AI Observatory in Switzerland** study of 2024[67] co-authored by Haute école de gestion de Genève (HEG) business school shows that Swiss companies have strong ambitions in terms of data and AI but are struggling to effectively integrate these subjects into their strategies for effective implementation. Key findings are:

- Despite aiming to develop a data-driven culture to improve efficiency and competitiveness, 91% of the analyzed companies consider themselves to be at a low or intermediate level of maturity when it comes to data & AI.
- AI is integrated into long-term strategies in only 33% of cases, mainly due to a lack of understanding of AI and concerns about costs and return on investments (ROI).
- There is a real gap between the attention being paid to generative AI and the relatively low level of maturity of the data and AI ecosystems.

The academic study "**Embedded Finance and Banking as a Service Switzerland: Outlook 2024"**[68] pursued two main objectives:

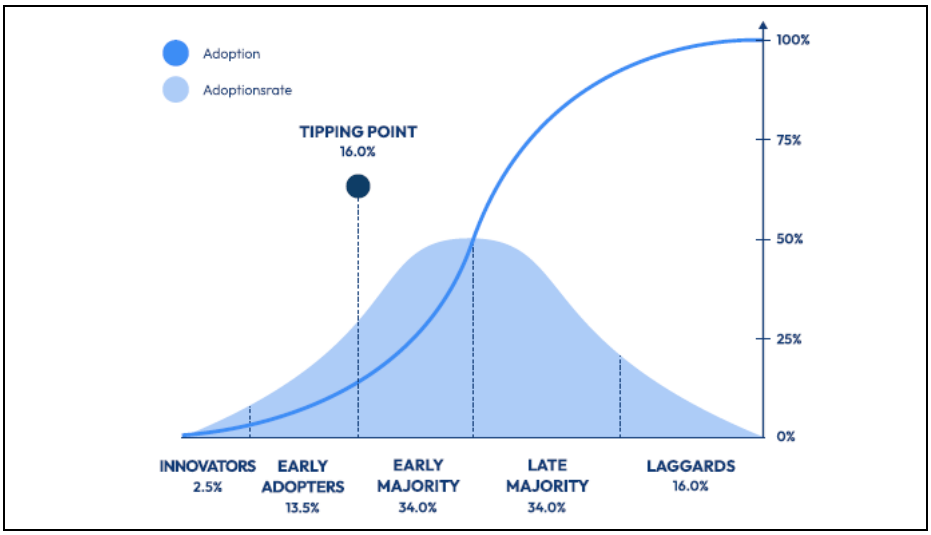
1. To create a business foundation for assessing the current and future revenue potential of embedded banking and BaaS to support boards of directors and executive management in developing sustainable, interconnected business models.
2. To contribute to the development of these interconnected value chains for Switzerland by ensuring that the emerging cross-industry value creation potentials driven by technology can be leveraged from within Switzerland whenever possible.

Key Insights

- Over 75% of Swiss consumers have used embedded banking at least once and the tipping point (16%) – a sufficiently large number of users utilize a new offering, which creates a pull effect so that remaining users also migrate to the new offering – has been reached in three out of five banking service areas: Tipping point reached in payments (33.1%), pension (26.6%) and investments (25.1%) and almost reached in savings (14.9%) and financing (14%).
- 35.1% of surveyed banks are expanding their business model portfolio with BaaS and 40% of non-banks with embedded banking as a complementary model.
- BaaS is economically relevant for banks in all banking services areas (percentage as to how many banks view the earnings potential as interesting: 58.3% in financing, 59.1% in pension, 66.7% in payments, 75% in savings, and 80% in investing).
- Embedded banking is economically relevant for non-banks in all banking services areas (percentage as to how many non-banks view the earnings potential as interesting: 50% in payments, 78.6% in savings, 79.3% in financing, 80% in pension, and 85.7% in investing).
- Given the fact that the tipping point has already been or is about to be reached from a consumer perspective in all major banking service areas, a modularized re-aggregation of the banking value chain in the upcoming 3 years is a realistic and relevant scenario.
- Overcoming cultural barriers within the banks are the key success factor if the economic potential of embedded banking shall be optimized for the Swiss economy and the Swiss financial center.

[67] See https://en.colombus-consulting.com/data-and-ia-observatory-in-switzerland-2024/.

[68] See chapter IV sec. a).



Source: Study authors' own illustration based on Diffusion of innovations, Rogers, E. M., 2003

V. Outcomes of the FIND Workshop of 26 February 2025

FIND organized a workshop on 26 February. It brought together industry representatives and regulatory authorities to explore key aspects of financial services integration, open finance and open banking.

The event began with the presentation of **TERMOT** as a tangible example of open finance and open data in action. This digital platform streamlines post-earthquake building assessment in Switzerland. It connects insurers and public institutions to enable efficient claims processing. TERMOT demonstrates that open finance extends beyond banking. It shows how government driven governance and enabling regulation can empower cross-industry and cross-border solution building, data integration and thereby drive innovation in risk management, insurance and national resilience.[69]

The following discussions took place as part of the workshop's working sessions. They revealed a **diverse range of perspectives, some even conflicting**. Participants expressed different views on conceptual understanding, strategic priorities, governance models and the appropriate level of regulatory intervention. The following provides a synthesis of the key discussion points and their outcomes:[70]

a) Regulation vs. Market-Driven Innovation

One of the central debates revolved around the level of regulatory oversight required for open finance. While some participants championed a fully market-driven approach, others argued for comprehensive regulatory intervention, with several hybrid proposals in between.

Diverging Perspectives

- Market-driven advocates argued that open finance should evolve naturally through industry initiatives without regulatory constraints, whereas "pro-regulation" proponents contended that regulatory oversight is necessary to ensure data security, consumer protection, equitable access to financial infrastructure and with that also reliability in business model planning and execution with corresponding investor trust and access to funding.
- Critics of the "market-driven" narrative dismissed it as a hollow concept unless accompanied by **concrete industry action**, arguing that securing Switzerland's financial competitiveness requires more than just rhetoric. Fintech

[69] See Appendix e.

[70] The summary follows the agreed Chatham House Rules.

representatives advocated for a mandatory open finance framework, arguing that regulatory enforcement is necessary to ensure fair competition between new entrants and incumbent financial institutions.

- Others countered that innovation cannot be legislated. They emphasized that regulation should only be imposed in cases of **market failure**.[71] However, others pointed out that this approach is not always sound, as a lack of regulation can hinder smaller innovators from entering the market and thus prevents innovation in the first place. Regulation ensures accepted solutions, integration and predictability. The common denominator was that innovation cannot be legislated but regulatory intervention can set the **precondition for innovation** to emerge.
- One notable and fact-driven result of the workshop (as opposed to the mere exchange of opinions) was that hybrid governance models are more and more adopted worldwide, in which targeted and minimal regulation is limited to critical areas such as data sharing principles and privacy, cybersecurity and consumer rights, while allowing market forces to drive innovation.
- Such regulation would need to support the **interoperability** with regulated systems like the EU or other important trade partners of Switzerland.
- **Specific** regulation could and should also apply to public sector access to and provision of financial data, particularly for financial crime prevention, but also in other areas to facilitate easier and more efficient **data sharing between public and private actors**. This would help avoid multiple data reports, eliminate media disruptions, enable aggregate overviews and pattern recognition that would otherwise be impossible and ensure readiness in digital public infrastructure – taking inspiration from lighthouse examples in Europe, such as the Nordics and the Netherlands.
- A recurring theme was the concern that examples from other jurisdictions (e.g., India, Brazil or EU) cannot be applied directly to Switzerland in its smart-follower approach but may be useful and serve as inspiration or "lessons learned" source as any solution should ideally amount to a **win-win-win** for all stakeholders to be successfully implemented.
- Governance-focused participants highlighted that open finance is a national **competitiveness issue**, stressing that a well-integrated financial data ecosystem would not only strengthen Switzerland's position as a leading financial hub but also stimulate competition in the financial sector. However, unlike in the UK, the Swiss Competition Commission actively monitors the topic but cannot act as a catalyst. The Swiss Cartel Act provides the Swiss Competition Commission with limited powers when it comes to proactive interventions.
- Other participants underscored the importance of **data quality**, platform trust and risk management, particularly in interactions with authorities.
- Some argued that regulation must let banks provide secure, customer-authorized access for third parties. In some jurisdictions, current regulations block screen-scraping and credential sharing, even with consent. APIs can replace direct credential use. Legal clarity is needed to enable banks to support open finance without barriers.

b) Balancing Value, Cost and Scope

A key point of contention was whether open banking and open finance should be driven by clear business cases and tangible consumer demand or whether it should be pursued as a broader strategic initiative.

Diverging Perspectives

- Market-driven proponents argued that open finance should only be pursued **if there is a proven business case** and demonstrable demand from customers or financial institutions. Efficiency-focused participants maintained that open finance must be economically viable: "No demand, no action – efficiency must drive implementation" (a **win-win-win** for all stakeholders).
- Financial inclusion was largely dismissed as a justification in the Swiss context, as financial access seemed already universal. Not discussed was the typical "**overbanked**" aspect of the Swiss financial economy where individuals and businesses sometimes overpay or do not have the right product or service for their specific circumstances in the first place due to lack of FinTech (and/or AI driven) solutions helping them to compare and optimize.
- Use-case-driven perspectives suggested that open finance could be particularly beneficial for **SMEs and financial intermediaries**, focusing on professional and corporate clients rather than retail consumers. B2B-focused

[71] Market failure occurs when the free market fails to allocate resources efficiently, justifying regulatory intervention to address issues like externalities, public goods or monopolies. Under the in Switzerland acknowledged subsidiarity principle, governments should only act when market mechanisms cannot resolve these inefficiencies independently.

participants advocated for an open finance approach in **asset management and institutional financial services**, such as automated portfolio updates or dynamic investment strategies.

- Concerns over **open insurance** were raised, particularly regarding negative risk selection. Unlike traditional insurers, who rely on static, self-reported data, open insurance employs granular, automated and dynamic risk assessment – offering new opportunities but also posing significant ethical challenges.
- However, **open pension** could play a significant role, with several initiatives already underway in Switzerland.[72]
- AML-focused participants highlighted the interest in a standardized platform for secure and more efficient and effective AML data exchange. **PPPs**, as seen in **Swiss AML efforts**[73], demonstrate the potential of collaborative approaches to enhance more efficient and effective compliance. By leveraging technologies such as decentralized identity verification, federated learning and privacy-enhancing cryptography, such a platform could improve the detection of suspicious transactions while minimizing data exposure risks. This aligns with open finance trends, where cross-institutional cooperation strengthens regulatory oversight and mitigates systemic risks.
- Competition-focused voices saw market **competition** as sufficient justification, citing the UK's open banking model, which was introduced following a competition authority investigation into the banking sector.
- Governance-focused participants emphasized that security and stability should be the primary objectives of open finance – its true "profit" lying not in immediate market returns, but in fortifying the financial system against future risks and future opportunities, particularly as AI becomes an integral component of finance. A robust and secure data infrastructure is **the strategic foundation for fully harnessing AI's potential for the public good.** This calls for a dual approach: fostering integration and interoperability to unlock AI's analytical and predictive capabilities while embedding zero-trust architectures, encryption standards and strong AI governance frameworks to mitigate systemic risks. In this context, open finance is more than just a regulatory or competitive issue. It has become a geopolitical and economic necessity. It plays a key role in shaping the resilience and sovereignty of national financial markets in a global economy increasingly driven by data.

c) Infrastructure Development and Funding Models

The choice of organizational structure plays a crucial role. Three primary models were considered:

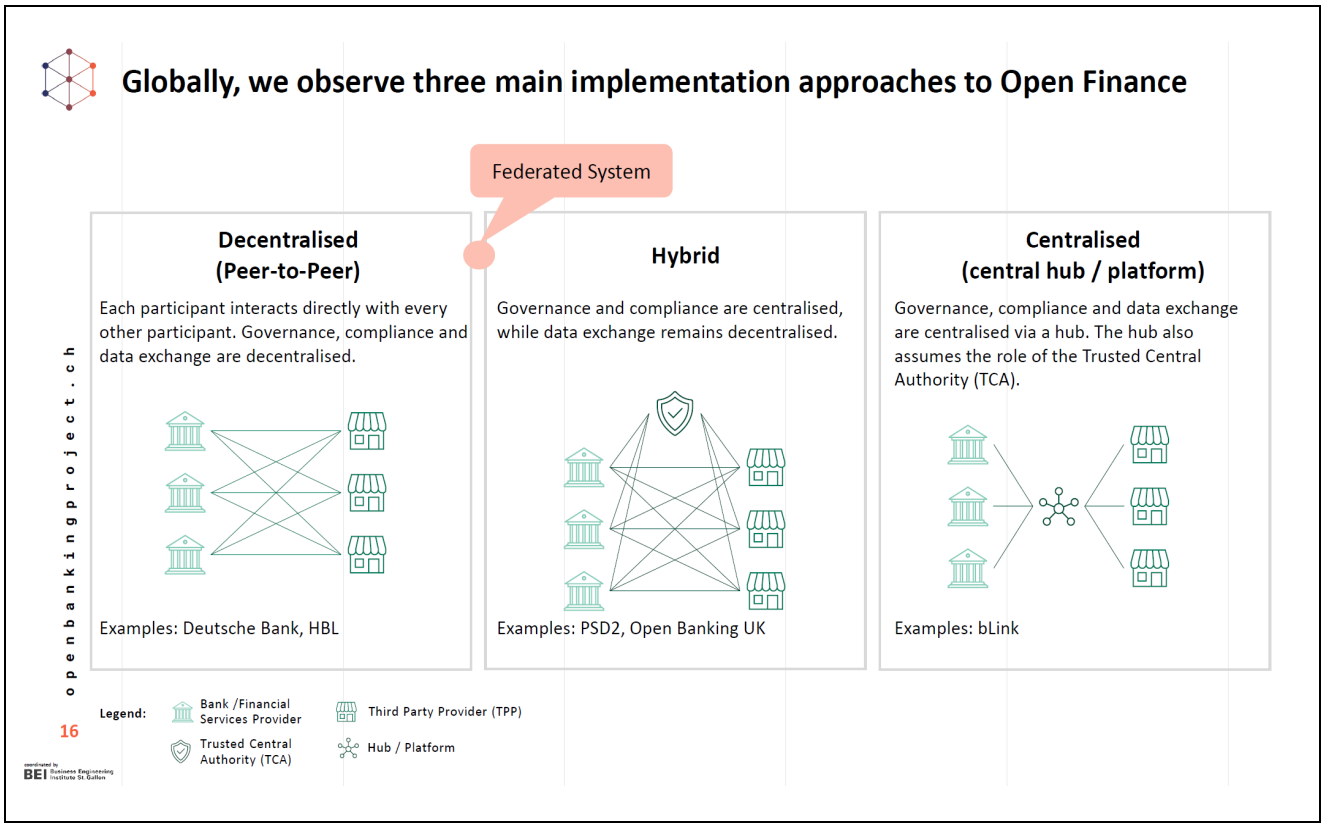
i. **Centralized Model** – A central hub or platform manages governance, compliance and data exchange. This model provides strong oversight and regulatory control but may limit competition and innovation. Concerns amount around cyber security and single point of failure considerations. Example: bLink in Switzerland.

ii. **Decentralized Model** – A peer-to-peer approach where each participant directly interacts with others. Governance and compliance responsibilities are distributed across all stakeholders. While this fosters innovation and autonomy, it may pose challenges in standardization, scaling and streamlined regulatory oversight across the board. Example: Hypothekarbank Lenzburg or certain implementations in Germany.

iii. **Hybrid Model** – A balance between central governance and decentralized data exchange, ensuring compliance and security while maintaining flexibility. Regulatory oversight remains centralized, but participants have autonomy in data interactions. Example: open banking UK under PSD2.

[72] The ELM system (Uniform Wage Reporting Procedure) is the Swiss standard for the electronic transmission of wage and insurance data to authorities and insurance companies. The pension data in the context of the AHV includes social security notifications that are processed directly via ELM. Many companies currently use the ELM system for reporting purposes. The associations bvg-digital and eBVG, in collaboration with Swissdec's expert committees, are working to integrate this system into occupational pension schemes in the coming years.

[73] See https://www.fedpol.admin.ch/fedpol/en/home/kriminalitaet/geldwaescherei/swiss-fippp.html.



Source: OpenBankingProject (BEI Business Engineering Institute St. Gallen)

Another critical aspect of organizational infrastructure revolved around the financing, where three primary models emerged:

i. **Publicly funded core infrastructure** – ensuring universal access, neutrality and financial inclusion, particularly in markets where the private sector may lack incentives to invest in foundational infrastructure.
ii. **Privately financed models** – relying on competitive market forces to drive efficiency and cost-effectiveness, with financial institutions and technology providers developing their own proprietary solutions.
iii. **Hybrid models (Public-Private Partnerships, PPPs)** – blending public oversight with private investment, using targeted regulatory frameworks to encourage participation while ensuring consumer protection and compliance.

Diverging Perspectives

- Some participants argued that, in markets without a regulatory mandate, **neutral and shared infrastructure rails** are essential to ensure interoperability and efficiency. Without a mandated framework, financial institutions may hesitate to adopt open finance, leading to fragmentation, inefficiencies and increased uncertainty and risk.
- If every institution builds its own solution, integration stalls due to incompatibility and scaling issues, and consumers face inconsistent user experiences. A vendor-neutral, self-service, shared infrastructure would facilitate connectivity among financial players while avoiding the need for complex bilateral agreements. This is essential for scale and future interoperability with other sectors.
- Other participants emphasized the importance of **fair and self-sustaining pricing models**. Lessons from markets such as the UK should be analyzed to avoid ineffective cost structures that could disincentivize adoption or lead to monopolistic control.[74] Commercially sound fee models will also need to consider that services may initially

[74] JROC Principles for commercial frameworks for premium APIs principles of June 2023: directly attributable and effectively incurred, incentivize investment and innovation, fair, proportionate, clear and transparent; not leading to bad behaviors; simple to administer; avoiding barriers to entry and recognizing different business models, see https://www.fca.org.uk/publication/corporate/jroc-principles-commercial-frameworks-premium-apis.pdf; or Frontier Economics on the potential for existing to engage those customers who currently receive low interest rates with alternative savings providers and accounts and help them to benefit from higher interest rates, see https://www.ukfinance.org.uk/system/files/2024-11/Open%20banking%20cash%20savings%20review.pdf.

lack profitability but become viable with higher transaction volumes. Further, that open banking (or we suggest "smart finance") payments avoid card-style interchange fees, reducing e.g. costs for merchants.

- A discussion point was the trade-off between **centralized infrastructures and decentralized (blockchain) solutions and question of convergence**. Proponents of blockchain technology highlighted its benefits in terms of decentralization and transparency. Blockchain removes single points of failure, reducing reliance on intermediaries. However, concerns remain regarding integration challenges with existing financial infrastructure.
- In particular, traditional financial institutions rely on **bilateral agreements** to regulate data exchange via APIs. Such agreements are basically incompatible with blockchain-based systems, which operate on predefined, standardized rules without intermediaries. Blockchain ecosystems function through **smart contracts**, which execute predefined rules automatically and transparently.[75]
- In contrast, bilateral agreements within centralized API infrastructures require bespoke, privately negotiated terms, making them more difficult to implement within a decentralized, immutable blockchain network.
- Some participants highlighted **"Trust Services"** as a promising approach to bridging centralized and decentralized financial infrastructures. Successfully implemented in jurisdictions like the UK, Brazil, and the UAE, they serve as key enablers of secure and efficient open finance ecosystems. Trust Services act as neutral intermediaries, providing identity verification, access control, governance and security, while still allowing decentralized data-sharing and financial interactions. Unlike fully centralized models, which rely on bespoke bilateral agreements, Trust Services create a standardized and interoperable framework for data exchange. Additionally, participants noted that Trust Services facilitate **cross-sector interoperability** – beyond financial services – while preventing monopolistic control by any single entity. In essence, Trust Services could offer a **hybrid solution**, combining the governance and oversight of traditional financial infrastructure with the efficiency and neutrality of decentralized ecosystems.
- Another discussion point was the role of **cloud technologies** in scaling and securing open finance platforms. Financial institutions could move their data to the cloud to create a more efficient, flexible and cost-effective infrastructure, as cloud solutions remove the need for costly on-premise data centers. However, challenges exist in data sovereignty, regulatory fragmentation and technological dependencies.[76]

d) Standardization and Interoperability

The discussion highlighted a divide between those advocating for global interoperability and those favoring rather national standardization:

Diverging Perspectives

- Some participants called for the adoption of the **Financial-Grade API (FAPI)** standard. The FAPI standard is a security and interoperability framework designed for secure and high-assurance financial data sharing via standardized APIs. Developed by the OpenID Foundation, it enhances open banking and open finance initiatives by ensuring strong authentication, fine-grained authorization and secure data transmission.[77]
- Other participants favoring a national centralized API-based infrastructure advocated for a less standardized, more flexible approach through **bilateral agreements between the users**. These customized agreements define how data is exchanged via APIs, covering specific technical, regulatory and business conditions. Instead of adhering to rigid standardized formats, institutions would individually negotiate data structures, interfaces and access rights.
- Others contended that while bilateral agreements may be a viable solution in traditional financial systems, **decentralized blockchain-based ecosystems inherently require greater standardization and interoperability**. This fundamental incompatibility creates friction between legacy financial institutions, which rely on customized

[75] Smart contracts require standardized rules, ensuring that all participants operate under the same conditions. If individual market participants attempted to enforce private, non-public agreements, it would undermine the transparency and interoperability that blockchain seeks to achieve.

[76] For an overview see Global Financial Markets Association (GFMA) White Paper of March 2025 on Public Cloud Portability, according to which regulators have strongly suggested that financial intermediaries consider portability and interoperability to manage cloud adoption risks. Today, portability is a mandatory requirement in at least one jurisdiction: The Securities and Exchange Board of India (SEBI) requires firms to implement data portability and interoperability as part of their exit and data transfer strategy and to help avoid vendor lock-in and concentration risk.

[77] The FAPI implements OAuth 2.0 with advanced security mechanisms such as mutual Transport Layer Security (mTLS) and JSON Web Token (JWT) based client authentication and uses OpenID Connect for user authentication and granular consent for data sharing.

agreements and proprietary closed source technology standards (e.g., core banking systems), and decentralized networks, which demand uniform, standardized protocols.

- Some participants highlighted the potential of the **ACTUS (Algorithmic Contract Types Unified Standards)** framework to support financial data integration through standardized, machine-readable contract logic. ACTUS was seen as particularly relevant for automating financial services in open finance environments, enabling dynamic cash flow modelling across the lifecycle of financial instruments. They also pointed to ACTUS as a potential bridge between centralized infrastructures and decentralized finance (DeFi) – enabling compliant smart contracts that are transparent, auditable and regulator-ready.
- In the discussion on **interoperability**, participants also highlighted key international initiatives aimed at enhancing seamless data exchange and secure identity management across financial ecosystems. These efforts are particularly relevant as open finance evolves towards greater cross-border integration:
    - **The OpenID Federation** – A technical specification (version 1.0, draft 42 as of March 2025) designed to enable secure, seamless and standardized identity management within financial ecosystems. By ensuring robust authentication and authorization mechanisms, it helps financial institutions and TPPs establish a trusted identity framework that supports regulatory compliance and data security in open finance.[78]
    - **Project Aperta** – An initiative by the BIS to reduce frictions and costs in global finance by enabling cross-border data portability. The project aims to connect the domestic open finance infrastructures of different jurisdictions. The initial use case is in trade finance for SMEs. Key collaborators include the BIS Innovation Hub Hong Kong Centre, the Central Bank of the UAE, the Banco Central do Brazil, the UK FCA, the Hong Kong Monetary Authority and leading global financial standardization bodies.[79]

  Both initiatives illustrate the growing need for harmonized interoperability frameworks that bridge regulatory gaps and technological fragmentation, ensuring that open finance ecosystems can operate securely and efficiently across jurisdictions.
- Another discussion point was the similarities between interoperability challenges in open finance and **multi-cloud strategies**. Both seek to reduce vendor lock-in and enable alternative solutions. While **cloud portability** simplifies provider switching, open finance depends on cross-platform standards and API interoperability. A multi-cloud approach in finance demonstrates how to navigate multiple providers, regulatory requirements and technical barriers.

e) Achieving the Federal Council's 2022 Objectives[80]

A major discussion point was how to meet the Swiss Federal Council's targets from December 2022 regarding financial data integration and open finance.

Diverging Perspectives

- Market-driven representatives within the incumbent sector largely advocate for a voluntary approach, asserting that Switzerland is making sufficient progress in open finance – particularly through the multilateral banking initiative. They argue that innovation should evolve organically rather than follow a rigid roadmap, highlighting existing industry efforts such as the SFTI Common API Working Group as evidence of effective self-regulation.
- The FinTech sector, while acknowledging progress, deems progress insufficient and costs too high (e.g., cost for individual APIs) and calls for **a clear roadmap**, structured governance and an according oversight and enforcement, potentially through a PPP that includes businesses and consumers in the governance and decision-making process. Demand should not be a prerequisite for action ("Which customer asked for the iPhone?") as adoption often follows when opportunities become concrete and well understood.
- Disruptors advocated that there is urgent need for a **data trustee model and standardized terminology** and international interoperability/compatibility**,** both essential for clarity, stakeholder alignment, effective coordination, reliable business model planning and execution, related investor trust and secured capital, effective competition and scaling opportunities.

[78] See https://connect2id.com/learn/openid-federation.
[79] See https://www.bis.org/about/bisih/topics/open_finance/aperta.htm.
[80] For practical reasons and time constrains, discussions of other Federal Council's objectives in the area of Digital Switzerland, coordinated data strategies or AI were carved-out.

- The following **key building blocks** for a holistic roadmap were presented:

  - **Clear Objectives** – A roadmap must be anchored in defined strategic goals.
  - **Common Language & Understanding** – Standardized semantics and terminology.
  - **Consent & Data Ownership** – Transparent, user-centric consent mechanisms.
  - **Ethics & Fairness** – Decision-making should be guided by fairness, inclusivity and ethical standards.
  - **Regulation & Compliance** – The regulatory framework must balance innovation, consumer protection and market integrity.
  - **Technical Infrastructure** – Open, scalable and interoperable standards are essential.
  - **Empowerment** – Individuals and businesses should have control over their data and choices.
  - **Inclusive Governance** – PPP models should involve not just financial institutions but also consumers and businesses (or representative associations, respectively).

VI. Conclusions: A Data Pathway for the Swiss Financial Centre

Switzerland's financial market is relatively small and structurally fragmented, not only in terms of institutions but also across regions and languages. This fragmentation makes the Swiss market less attractive for foreign players and reduces competitive pressure compared to larger, more integrated markets such as the UK or the US.

Adding to this, consumer associations – which could play a role in demanding more customer-friendly and innovative services – lack sufficient resources and expertise. Their limited presence weakens bottom-up momentum for digital transformation and consumer-driven innovation.

These structural constraints hamper the development of open finance, particularly when it comes to establishing interoperable data strategies. In the absence of external pressure, change depends heavily on the voluntary actions of established market participants.

Despite these limitations, Switzerland has seen emerging initiatives. Sectors like wealth management and multi-banking are progressing.

International experience shows that regulation plays a critical role when dominant players are reluctant to open up. Without targeted regulatory incentives, the broader economic, social and technological benefits of data integration tend to unfold only slowly.

Lessons on value creation can be learned from other implementations. In many countries, open banking initiatives have increased innovation, competition and efficiency. The potential benefits of data sharing frameworks have been well established and documented (UK CMA, 2023[81]; OECD, 2023[82]; Banco Central do Brasil, 2023[83]; OECD, 2023[84]; Open Finance Network Canada, 2024[85]; European Commission, 2018[86])

The UK stands out as an example, having fostered a dynamic FinTech ecosystem through a regulated open banking and data exchange framework. Thanks to standardized APIs and a central implementation body, over 300 licensed TPPs have emerged.[87] This has given rise to a variety of new services and applications, especially in payments and personal finance. Building on this success, the UK is now moving towards open finance, with a dedicated task force established

[81] See https://www.gov.uk/government/news/millions-of-customers-benefit-as-open-banking-reaches-milestone.

[82] See https://www.oecd.org/en/publications/shifting-from-open-banking-to-open-finance_9f881c0c-en.html.

[83] See https://www.bcb.gov.br/en/financialstability/open_finance.

[84] See https://www.oecd.org/en/publications/data-portability-in-open-banking_6c872949-en.html.

[85] See https://www.openfinancenetwork.ca/_files/ugd/72c2f6_bb7fdbbc6a9d44e0bc7cd3dff1e64a4c.pdf.

[86] See https://finance.ec.europa.eu/publications/report-open-finance_en.

[87] See CMA confirms full completion of Open Banking Roadmap, unlocking a new era of financial innovation - Open Banking.

in 2024 to extend data-sharing to areas like insurance and pensions.[88] The UK model illustrates how regulatory clarity and coordinated infrastructure can unlock innovation and generate tangible consumer value. When the right conditions are in place, open data ecosystems flourish – bringing better products, smarter services and entirely new use cases. The UK's regulatory approach tends to create stronger incentives for participation. In the absence of mandates, large institutions often retain control over customer data and see little reason to invest in open interfaces. This leads to fragmented adoption, limiting the system-wide impact of data-sharing efforts.

Switzerland illustrates this above described dynamic well. Only a few institutions open their APIs voluntarily.

To address these gaps, the OECD points to the need for **complementary incentives**. Without them, the costs and coordination efforts of open finance and data integration fall disproportionately on early movers, resulting in a fragmented and incomplete API landscape.

Such incentives could include fair cost-sharing models, reciprocal data-sharing obligations and financial rewards to broaden participation. These mechanisms can help distribute responsibility and stimulate collective progress.[89] Because the global trend is clear: more countries are introducing regulated or hybrid open finance frameworks. By the end of 2024, around 69 countries had adopted formal open banking or open finance policies.[90] In these models, governments set the legal framework while working closely with the private sector on implementation. This balance between regulation and cooperation helps achieve innovation goals while ensuring trust and fairness.

As the volume and strategic relevance of data continue to grow, **data governance** has become a central pillar of national competitiveness. According to the Hinrich Foundation[91], more data will be generated in the next three years than in all of human history, largely due to AI and digital transformation. The increasing reliance on data has prompted regulators to act. Governments are introducing rules to protect sensitive information, preserve sovereignty and manage cybersecurity threats. Control over data infrastructure is emerging as a key lever in the race for leadership in digital financial services.

In this shifting environment, striking the right balance between innovation and regulation is more important than ever. Policymakers face the challenge of protecting data without slowing down innovation. Their ability to **design adaptive and forward-looking governance models** will shape national resilience in the digital era. Ultimately, the responsible use of data will define economic and geopolitical leadership in the years ahead. Targeted regulatory frameworks are not just safeguards. They are enablers of financial stability and digital sovereignty in an economy where data and algorithms shape outcomes. They are no longer a policy option, but a structural imperative.

Switzerland now faces the challenge of combining its market-driven culture with forward-looking regulation. Successfully managing this balance will be key to maintaining its global role in a future defined by data and AI.

This discussion paper sees the development of a smart finance framework in Switzerland as a **long-term strategic objective** – and a coherent data strategy as the critical lever to achieve it. The strategic objectives are not only determined by the mentioned Federal Council's 2022 objectives with regard to Open Finance, but also by respective visions expressed in Digital Finance (respective report from 2022 is expected to be updated in the next few years), Digital Switzerland and AI. With regard to the latter and respective future regulation, the Federal Council seeks to strengthen Switzerland as a center of innovation, safeguard the protection of fundamental rights, including economic freedom, and strengthen the public's trust in AI.[92]

In addition to the already listed building blocks, FIND sees the following building blocks as essential:

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[88] See chapter II sec. a) A.

[89] See https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/11/open-finance-policy-considerations_932ba548/19ef3608-en.pdf: "Incentives play an important role in the success of data sharing frameworks. The OECD Recommendation on Enhancing Access to and Sharing of Data highlights the importance of providing coherent incentive mechanisms and promoting conditions for the development and adoption of sustainable business models and markets for data access and sharing (OECD, 2021). Examples of possible incentives in Open Finance can take the form of reciprocity of data sharing and/or economic compensation."

[90] See https://www.linkedin.com/pulse/open-banking-finance-global-update-2024-hps-deave/.

[91] See https://www.hinrichfoundation.com/research/wp/digital/age-of-data/.

[92] Press release of 12 February 2025, see https://www.news.admin.ch/en/nsb?id=104110.

a) A targeted regulatory framework ("minimal essential regulation") is necessary.

A minimum level of regulation is essential to establish clear and widely accepted frameworks. International experience shows that certain core aspects – such as consumer protection, data integrity, liability, consent management – require binding standards.

b) Public-private governance and industry coordination are crucial for managing a smart finance ecosystem.

A joint body consisting of authorities and representatives from banks, FinTechs, insurers, consumer protection and UX organizations as well as other stakeholders could drive standardization and oversee the implementation of smart finance in Switzerland. International experience – particularly the United Kingdom – shows that a central coordination entity is a key success factor.

c) Standardization and interoperability must be ensured to build a future-proof financial data infrastructure.

Switzerland should adopt international API standards instead of developing isolated national solutions. The FAPI standard from the OpenID Foundation has already been established as a global best practice for secure financial APIs. The ongoing efforts by bLink/SFTI to adapt FAPI for Switzerland should be supported and extended to all relevant sectors.

d) Data security and digital self-determination must be at the forefront of smart finance in Switzerland.

Switzerland has already introduced pioneering concepts such as "digital self-determination" and initiatives for trusted data spaces, which should now be implemented specifically in the financial sector. This means that customers must retain full control over their data and be able to decide precisely which information they share with which service providers. Internationally, experience has shown that consumers are only willing to share their financial data if they are confident that their data is secure and used only for intended purposes.

e) Targeted innovation promotion is necessary to accelerate the development of beneficial open finance applications.

A Digital Finance Sandbox could allow to test new data-driven business models in a controlled environment, similar to the MAS Sandbox in Singapore or the FCA Sandbox in the UK. In addition, Switzerland should support high-visibility innovation challenges, such as an annual "Swiss Smart Finance Hackathon". Winning ideas could be further developed with funding or incubation programs. Innosuisse could further promote dedicated calls for projects and applications.

f) Awareness-building and stakeholder engagement are critical to ensuring that open finance achieves widespread adoption.

Current studies show that public understanding and awareness of open banking/finance in Switzerland – or to already use our newly suggested term “smart finance” – remain low. Efforts should focus on information campaigns that highlight the benefits and risks. Individuals and businesses need to understand what new services are available through data sharing, the use of (agentic) AI and how they can benefit.

While the strategic pillars outlined above provide a long-term framework for advancing smart finance in Switzerland, FIND recommends the following **short-term, concrete actions** to catalyze progress and build early momentum:

1 **Advance Stakeholder Dialogue on Anti-Money Laundering (AML) Data Infrastructure**
FIND recommends intensifying discussions with relevant stakeholders to explore shared data infrastructure solutions and in general a more standardized and efficient data use, laying the foundation for (fully) taping into AI's potential, and that support AML compliance and regulatory oversight.[93]

2 **Explore the Establishment of a Public-Private Partnership (PPP) for Governance**
FIND proposes evaluating the creation of a PPP to develop a structured governance model covering all sectors that balances public regulatory objectives with private-sector innovation and agility.

3 **Refine Hybrid Regulatory Models**
FIND encourages a comprehensive analysis of hybrid regulatory approaches to determine which components require formal minimal regulation (e.g. consumer protection, data integrity and security, consent authentication, transparency with regard to API calls, performance and fees) and which areas can remain open to industry-led experimentation and innovation.

4 **Design Targeted Regulatory Interventions**
FIND recommends developing targeted regulatory measures for those areas identified under action point 3 as requiring formal oversight while preserving flexibility elsewhere to support innovation.

5 **Assess the Feasibility of a Digital Sandbox as a Trusted Data Space**
FIND suggests evaluating the viability of a digital sandbox, ideally designed as a trusted data space (see Appendix d), to enable safe testing of new data-driven financial services and AI applications.[94]

6 **Expand SwissHacks and launch TechSprint or Smart Data Challenge to Drive Smart Finance Innovation**
FIND proposes continuing or expanding the government-led SwissHacks format[95] and share outcomes internally with relevant stakeholders. In addition, FIND suggests to launch a dedicated TechSprint or Smart Data Challenge, coordinated with relevant authorities such as the Money Laundering Reporting Office Switzerland (MROS), the Federal Office of Justice, the Federal Data Protection and Information Commissioner (FDPIC), the State Secretariat for International Finance (SIF), possibly under the lead of the Federal Chancellery (its unit DLT being responsible for digital transformation of the government and serves as hub for all Digital Strategy Switzerland matters) to test, learn, pivot and implement the necessary yet minimal regulatory governance and framework.

[93] In that regard FIND initiated a low-cost pilot project together with Federal Chancellery and MROS which – subject to commitment and available resources of further key stakeholders involved – gathers information on current data sharing processes between the private and the public sector in AML matters.
[94] See mock-up in Appendix d for illustration purposes, sandbox concept and implementation sourced by trusted third-party provider through a preceding regular procurement process.
[95] See www.swisshacks.com.

VII. Appendix

a) The Finternet Vision

The Finternet publication identified three necessary components: an efficient economic and financial architecture, the application of cutting-edge digital technology and a robust legal and governance framework. The Finternet publication is flanked by a white paper called "Finternet: Technology Vision and Architecture" also published in 2024. The overarching Finternet vision can serve as a guiding north star for a modern and scalable infrastructure that centers on the needs of users – both individuals and businesses. To support this journey, the following checklist may provide a helpful compass[96]:

Key characteristics of a user-centric Finternet — Table 1

#	As a user I ...	Examples
1	Could be any natural person or legal person	Individuals and legal persons (eg corporations, governments, non-profits, trusts, partnerships)
2	Could use my electronically verifiable identities and verifiable attestations to participate in the ecosystem	*Identities*: Passport, national (digital) ID card, driver's licence, birth certificate, social security number/card, bank cards, etc *Attestations*: Investor accreditation, educational degrees, employment history, professional licences/certifications, health/financial records, criminal background checks, social media, etc
3	Could authenticate myself and authorise transactions on any ledger of my choice	PIN, biometric verification, hardware token, SMS/email-based, authorisation chains, etc
4	Could create personalised integrated financial workflows	Rule-based transactions (eg predefined limits/caps on the amount/volume), transaction interlinking, delegation, etc
5	Could choose what data to reveal, how and to whom	Virtual addresses, aliases based on time/payee/amount, zero knowledge proofs of personal data, etc
6	Could use any device for authorising transactions	Mobile phone, laptop, desktop, mixed reality headset, internet-of-things device, NFC tag and other form factors
7	Could send and receive anything of value in any unit, any amount, to anyone, anywhere	Any asset (registered/unregistered, regulated/unregulated, attested/unattested), any amount, anyone (any natural or legal person), anywhere
8	Could manage my assets with any asset manager of my choice	Banks, brokers, asset management companies, depositories, etc
9	Should be protected from fraud, abuse and bad actors	Know-your-customer and anti-money laundering, fraud monitoring/alerts, encryption and other secure cryptographic mechanisms, two-factor authentication, regulatory compliance checks, sanctions checks
10	Should be able to adhere to established legal norms	Banking law, securities law, taxation law, dispute resolution mechanisms, etc

[96] See Carstens, A., & Nilekani, N. 2024, Table 1, p. 19.

b) Conceptual Building Blocks of a Smart Finance Framework

Countries like the UK have introduced strategic plans that outline the next steps for financial services integration.[97] Drawing from these examples, the building blocks presented below can and must be discussed and further developed and refined together with the ecosystem to establish a roadmap for broad support and coordinated implementation.

Part 1: Laying the Foundation

Building Block 1				Building Block 2			Building Block 3
Policy and Regulatory Framework	**Ecosystem Engagement**	**Infrastructure and Standards Development**	**Customer Adoption**	**Implementation**	**Pilot Projects and Testing**	**Financial Crime and Customer Protection**	**Expansion Beyond Payments and Banking**
Define policy and regulatory frameworks.	Engage stakeholders to ensure collaboration and alignment on goals.	Develop technical standards and security protocols for API implementation.	Promote adoption among customers and businesses through education and incentives.	Implement basic open data payment features, such as account access, payment initiation and secure transaction data sharing.	Test the system with selected stakeholders to identify and address potential issues.	Integrate measures for fraud prevention, AML and customer protection to build trust. Open APIs to Authorities	Expand to include sectors like insurance, investments, credits, real estate and pensions. Data standardization. Trusted data spaces.

Part 2: The Transformation of the Landscape

[97] The JROC's 2023 report focuses on open banking, outlining a two-year roadmap to enhance service availability, fraud prevention, consumer protection, data sharing and new services like variable recurring payments, while also setting the foundation for the transition towards open finance within a long-term regulatory framework. See https://www.gov.uk/government/publications/recommendations-for-the-next-phase-of-open-banking-in-the-uk.

Building Block 4		Building Block 5			Building Block 6
Advanced Data Sharing Use Cases	**Monitoring and Enhancements**	**Ecosystem-wide Integration**	**Cross-Border Integration**	**Support Further Advancements**	**Continual Improvement**
Leverage AI to enable advanced use cases and deliver deeply personalized products and services.	Monitor implementation, refine standards and address emerging challenges.	Achieve interoperability across multiple industry sectors for seamless integration.	Harmonize frameworks to support cross-border financial services (cross-border interoperability).	Encourage advancements through means such as global interoperability standards and new security technologies.	Ensure the ecosystem is continuously improved and remains secure and efficient.

c) International API Implementation Strategies (Selected Countries)

API-Type	UK	US	Singapore	UAE	Switzerland	Germany	Brazil	Canada	Australia
Banking APIs ➢ Account balances ➢ Transaction history ➢ Account details (IBAN, account type)	Fully implemented and regulated	Partially implemented by banks and FinTechs	Actively implemented under MAS guidelines	Early stages of implementation	Voluntary implementation by some banks and FinTechs	Implemented under PSD2 regulation	Implemented under phased open banking approach	Partially implemented; framework in development	Fully implemented under Consumer Data Right
Payment APIs ➢ Payment recipient ➢ Payment amount ➢ Payment reference ➢ Payment status ➢ Recurring payments	Implemented for various payment types	Partially implemented by FinTechs and private banks.	Implemented for basic payments	Limited availability; early adoption phase	Available through specific providers voluntarily	Implemented under PSD2	Implemented for a wide range of payments	Partially implemented; adoption growing	Implemented with support for recurring payments
Investment APIs[98] ➢ Portfolio composition ➢ Investment history ➢ Stock and fund purchases ➢ Dividend payments	***This table provides a preliminary overview of selected international API implementation strategies and is not exhaustive. Further details and countries may be added as the landscape evolves and additional data becomes available.***								
Credit APIs ➢ Credit score ➢ Loan applications ➢ Repayment schedules ➢ Interest rates									
Insurance APIs									

[98] Global standards provided by Open Wealth Association, implementation through specific providers on a voluntary basis.

➢ Insurance contracts ➢ Claims history ➢ Premium payments ➢ Policy durations	
Pension APIs ➢ Pension account balances ➢ Contribution history ➢ Projected retirement income ➢ Pension plan details and provider information ➢ Withdrawal options and conditions	
Real Estate APIs ➢ Mortgage information ➢ Property valuations ➢ Rental payments	
Sustainability APIs ➢ CO_2 footprint based on transactions ➢ ESG (Environmental, Social, Governance) metrics of companies	
Personal Finance Management APIs ➢ Revenue and expense data ➢ Tax information ➢ Household budgets	

➢ Categorized expenses ➢ Cash flow management ➢ Financial goals	
APIs to Authorities ➢ Supervisory authority ➢ Financial intelligence unit ➢ Tax administration ➢ National bank	

d) Trusted Data Spaces / Digital Sandboxes

Opportunities:

1. **Data Control & Customer Empowerment** – Trusted Data Spaces promote digital self-determination. They allow users to retain control over their financial data while ensuring secure and transparent access.
2. **Predictive Finance** – AI-driven analytics leverage high-quality data to provide real-time financial insights, personalize services and anticipate customer needs.
3. **Market Efficiency** – Interoperability minimizes redundancies and streamlines financial operations by harmonizing data flows, eliminating manual processes, and enabling faster, more efficient transactions.
4. **Fraud Prevention & Risk Management** – Access to high-quality data improves fraud detection and risk assessment.
5. **Innovation** – Standardized data-sharing environments facilitate the integration of FinTech solutions.

Risks:

1. **Data Concentration & Market Power** – Large institutions may monopolize access to data, reducing competition and limiting the benefits for smaller players. Risk of profiling, data misuse and ethical concerns around AI-driven financial services.
2. **Infrastructure & Cost Burden** – Developing and maintaining trusted data spaces requires significant investment, potentially excluding smaller institutions.
3. **Exclusion of Non-Digital Customers** – Customers without digital access or unwilling to share data may face disadvantages in financial service accessibility.
4. **Cybersecurity Threats** – Centralized data repositories could become prime targets for cyberattacks, necessitating advanced security measures.

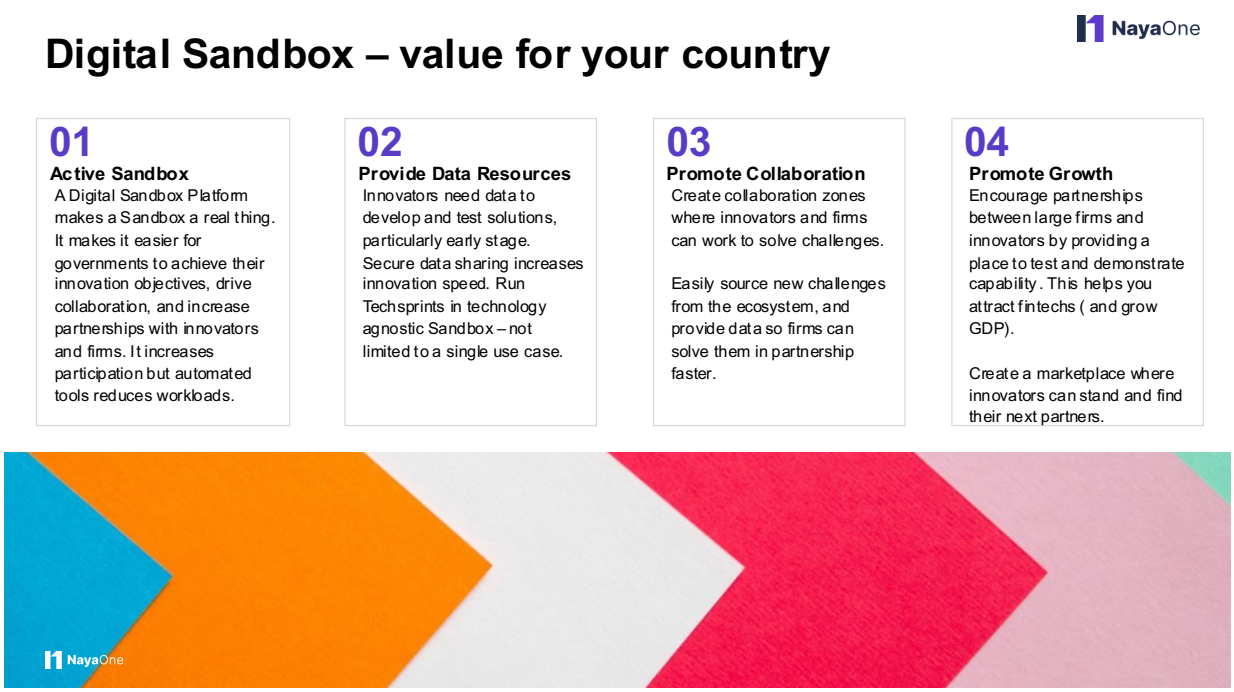
To mitigate these risks, **fair access policies and transparent governance** are crucial.

Conclusion:

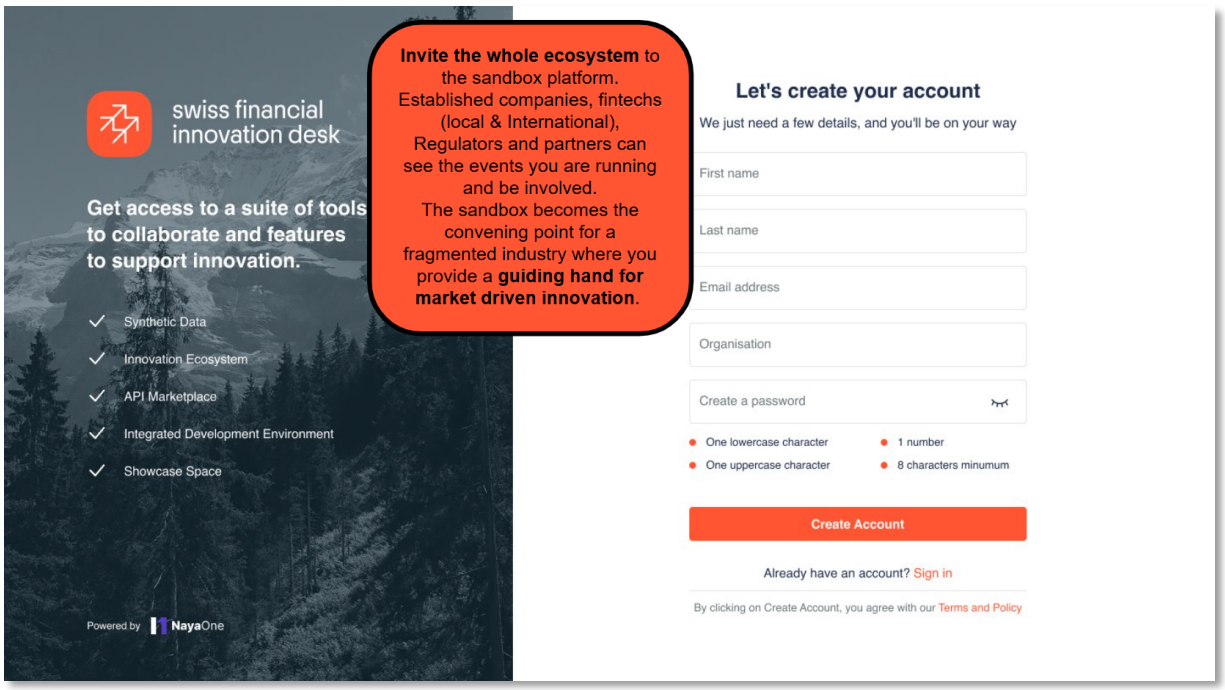
While Trusted Data Spaces offer significant potential for secure, efficient and innovative financial ecosystems, their success depends on clear governance, interoperability standards and ethical data practices.

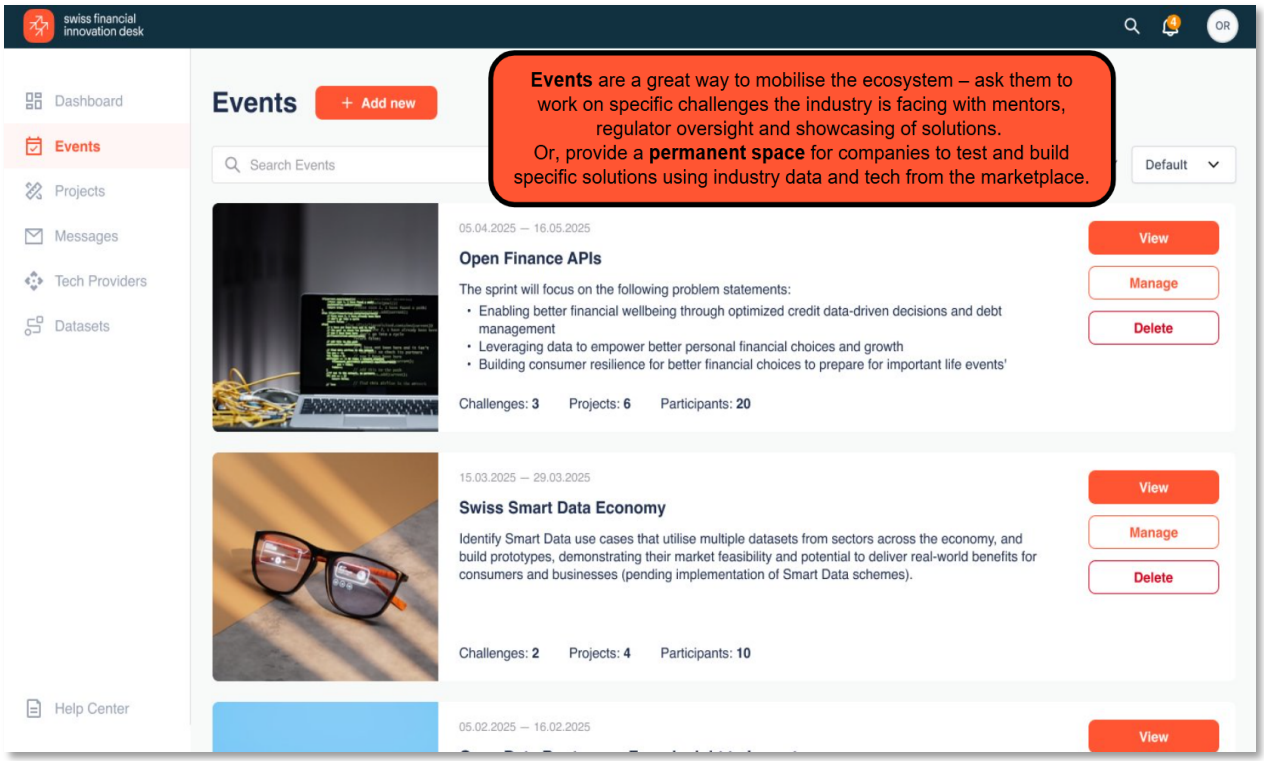
Digital Sandboxes – Secure and Collaborative Trusted Data Spaces for Innovation:

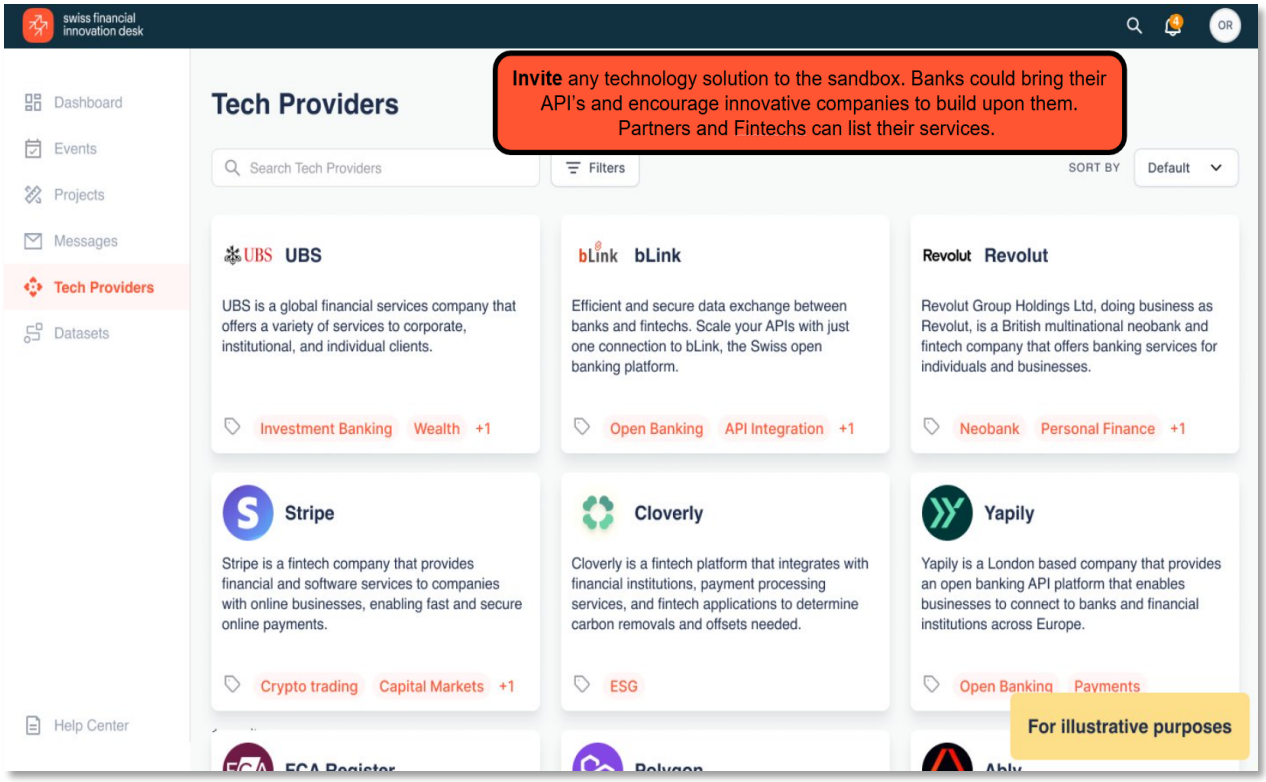
Blueprint: The UK Sandbox...

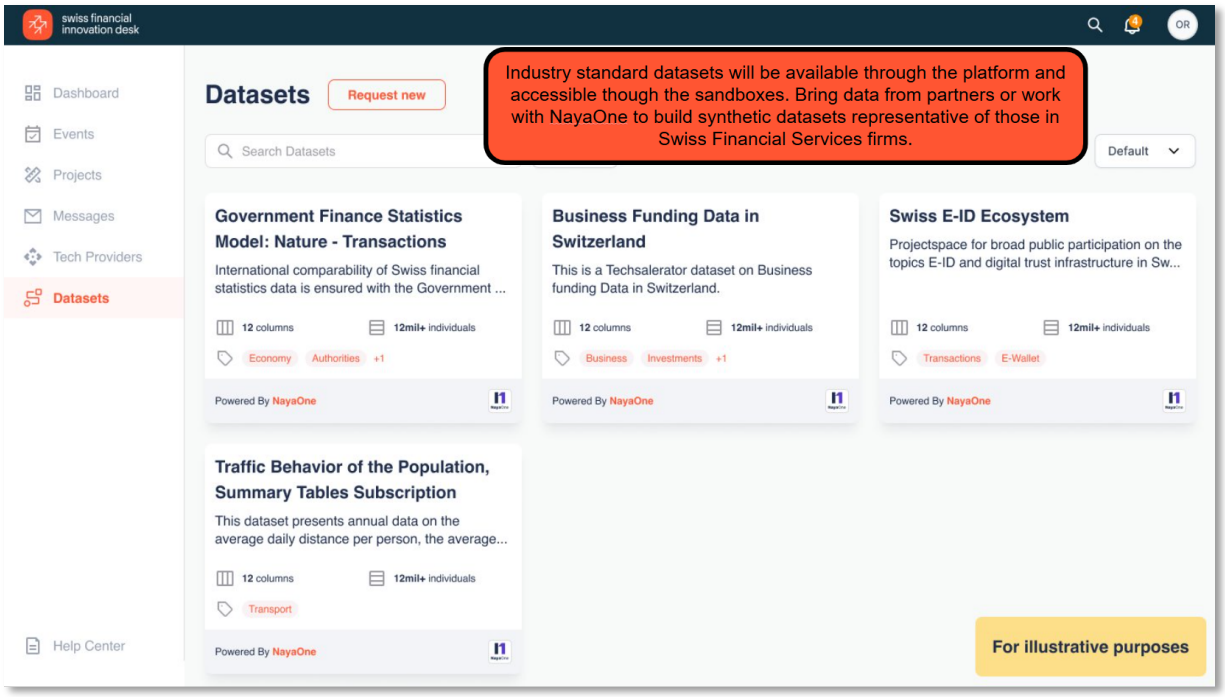


... for a holistic Swiss Sandbox (mock-up) provided e.g. by FIND:

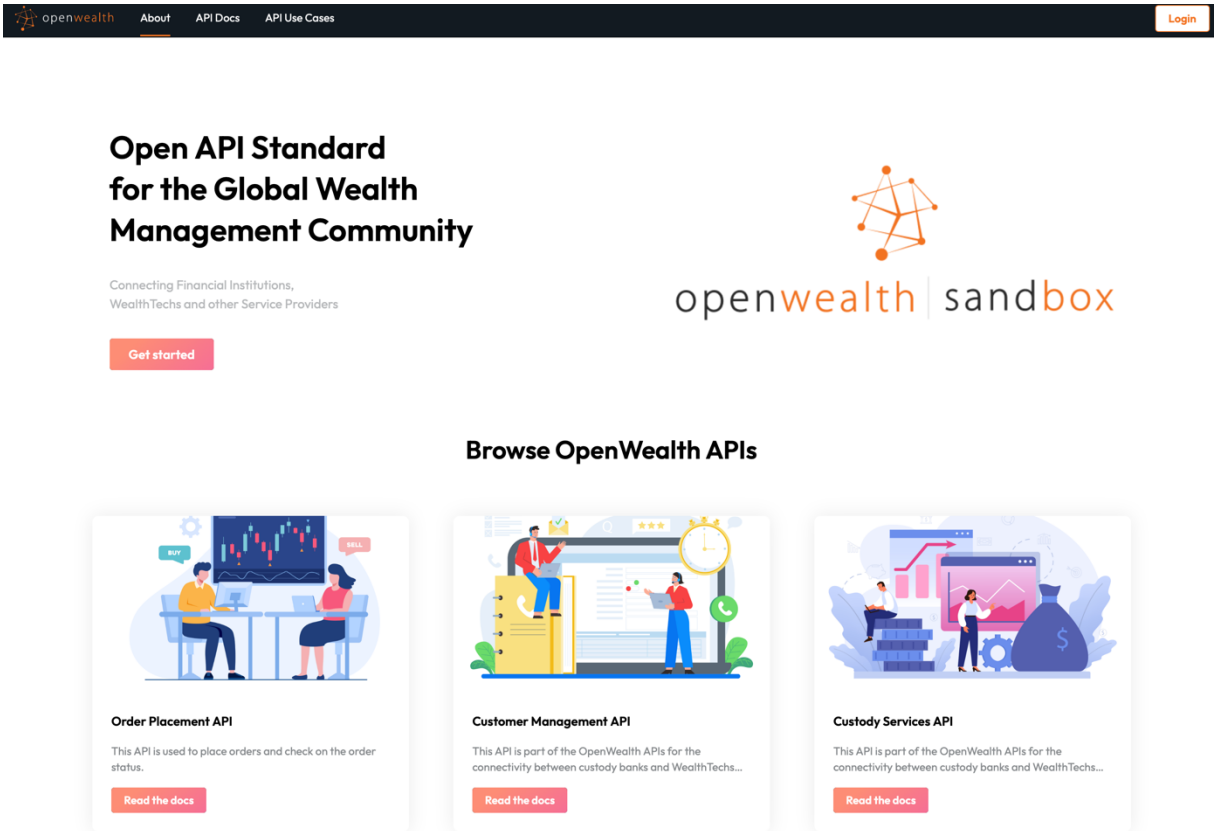



swiss financial innovation desk
OR
Dashboard
Events
Projects
Messages
Tech Providers
Datasets
Help Center
Events
+ Add new
Search Events
Default
Events are a great way to mobilise the ecosystem – ask them to work on specific challenges the industry is facing with mentors, regulator oversight and showcasing of solutions.
Or, provide a permanent space for companies to test and build specific solutions using industry data and tech from the marketplace.
05.04.2025 — 16.05.2025
Open Finance APIs
The sprint will focus on the following problem statements:
• Enabling better financial wellbeing through optimized credit data-driven decisions and debt management
• Leveraging data to empower better personal financial choices and growth
• Building consumer resilience for better financial choices to prepare for important life events'
Challenges: 3 Projects: 6 Participants: 20
View
Manage
Delete
15.03.2025 — 29.03.2025
Swiss Smart Data Economy
Identify Smart Data use cases that utilise multiple datasets from sectors across the economy, and build prototypes, demonstrating their market feasibility and potential to deliver real-world benefits for consumers and businesses (pending implementation of Smart Data schemes).
Challenges: 2 Projects: 4 Participants: 10
View
Manage
Delete
05.02.2025 — 16.02.2025
View


swiss financial innovation desk
OR
Dashboard
Events
Projects
Messages
Tech Providers
Datasets
Help Center
Tech Providers
Invite any technology solution to the sandbox. Banks could bring their API's and encourage innovative companies to build upon them. Partners and Fintechs can list their services.
Search Tech Providers
Filters
SORT BY
Default
UBS
UBS is a global financial services company that offers a variety of services to corporate, institutional, and individual clients.
Investment Banking Wealth +1
bLink
Efficient and secure data exchange between banks and fintechs. Scale your APIs with just one connection to bLink, the Swiss open banking platform.
Open Banking API Integration +1
Revolut
Revolut Group Holdings Ltd, doing business as Revolut, is a British multinational neobank and fintech company that offers banking services for individuals and businesses.
Neobank Personal Finance +1
Stripe
Stripe is a fintech company that provides financial and software services to companies with online businesses, enabling fast and secure online payments.
Crypto trading Capital Markets +1
Cloverly
Cloverly is a fintech platform that integrates with financial institutions, payment processing services, and fintech applications to determine carbon removals and offsets needed.
ESG
Yapily
Yapily is a London based company that provides an open banking API platform that enables businesses to connect to banks and financial institutions across Europe.
Open Banking Payments
For illustrative purposes



Example in Wealth Management: The OpenWealth Sandbox (https://openwealth.ch/sandbox)



e) TERMOT: Enhancing Resilience Through Data Integration

What is TERMOT?

TERMOT is a digital platform for post-earthquake building assessment and loss evaluation in Switzerland. It connects private insurers, cantonal building insurers and public institutions to enable fast, structured damage assessment and claims processing. The association "Schadenorganisation Erdbeben" behind TERMOT originated from a public-private partnership project, supported and financed by the cantons, the Principality of Liechtenstein, the cantonal building insurance companies and private insurers. Federal agencies such as the Swiss Seismological Service at ETH Zurich, the Federal Office for Civil Protection and the Federal Office for the Environment also support the SOE and ensure coordination with federal earthquake preparedness measures. The organization aims to make a significant contribution to making society more resilient.

TERMOT's Connection to open finance*:*

While open finance is often associated with banking, TERMOT demonstrates its broader relevance to insurance and risk management. The platform integrates insurance and claims data, automating and optimizing the claims-handling process – an example of open insurance as a subset of open finance.

How Data Integration Strengthens Resilience*:*

TERMOT showcases how effective data integration enhances national resilience by enabling

- Pre-Event Preparedness: Consolidating policy data from insurers to ensure all necessary information is available upfront.
- Real-Time Event Response: Facilitating instant damage reporting and claims integration during a disaster.
- Post-Event Recovery & Risk Assessment: Using collected data to refine risk models, enhance financial loss estimation, and improve future disaster response strategies.

Key Success Factors for Integration:

- Clearly Defined Use Cases & Value Streams: Integration must provide tangible benefits to all stakeholders, including insurers, public authorities and data providers.
- Managing Industry Heterogeneity: TERMOT standardizes core attributes to bridge differences in data formats and processes across various insurers and governmental institutions.
- Seamless Process Integration: Instead of duplicating existing insurance workflows, TERMOT complements them, making adoption easier and more relevant.
- API-First & Interoperability: Built with an open, API-first architecture using RESTful APIs, TERMOT ensures seamless, scalable integration.

Broader Implications:

TERMOT demonstrates how open finance principles extend beyond banking, offering a scalable, regulation-light approach to cross-industry integration. It highlights that with a clear vision, strong collaboration and a compelling value proposition, open and smart finance can drive meaningful innovation in risk management, insurance and national resilience.

VIII. Additional Literature and Resources

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IX. Impressum

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