BANK & FINANCE
CONSULTING GROUP

Open Finance: Unleashing the Next Wave of Financial Innovation

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Executive Summary

What it is. Open finance extends secure, consent-based data sharing beyond payments to credit, savings, investments, pensions, and insurance—shifting control of data to customers and enabling interoperable, API-driven markets (OECD, 2023a; OECD, 2023b).

Why now. Three forces converge: (1) mature APIs/cloud and digital ID; (2) consumer demand for integrated services; (3) policy momentum to lower switching costs, boost competition, and advance inclusion (JROC, 2023; CFPB, 2024a; ACCC, 2025).

What we find.

- **Competition and innovation.** Data portability reduces information asymmetries and switching costs, improving pricing and product fit; two-sided network effects then accelerate take-up (Stiglitz and Weiss, 1981; Rochet and Tirole, 2003; Katz and Shapiro, 1994; Jones and Tonetti, 2020).
- **Real traction, unevenly distributed.** Mandate-led regimes (EU/UK; Brazil; India) achieve scale faster than market-led models absent common standards (OECD, 2023b; FSB, 2023).
- **Inclusion gains—when rails work.** Cash-flow and payroll data increase approval rates and reduce time-to-yes for thin-file households/SMEs; impacts depend on data quality, consent user experience (UX) and proportional accreditation (CCAF, 2024; Sahamati, 2025; IDB, 2022).
- **Operational dependencies rising.** Concentration in cloud/API gateways increases correlated outage risk; resilience and liability frameworks are decisive (FSB, 2019; FSB, 2023; DORA, 2022).
- **Value at stake.** Institutions that go API-first with explainable analytics and tested resilience capture lower acquisition costs and faster product cycles; laggards face customer churn and integration debt (OBL, 2025a; OBL, 2025b).

Evidence of traction (selected datapoints, as of Aug 2025):

- **United Kingdom: 13.3 million** active users; **31 million** open-banking payments in March 2025 (**7.9%** of Faster Payments) (OBL, 2025a; OBL, 2025b).
- **Brazil: More than 30 million** active consents across banking, credit, insurance and investments within two years of launch (Open Finance Brasil Secretariat, 2024).
- **India: Hundreds of millions** of successful Account Aggregator consents with shorter onboarding cycles and expanded thin-file credit (Sahamati, 2025).

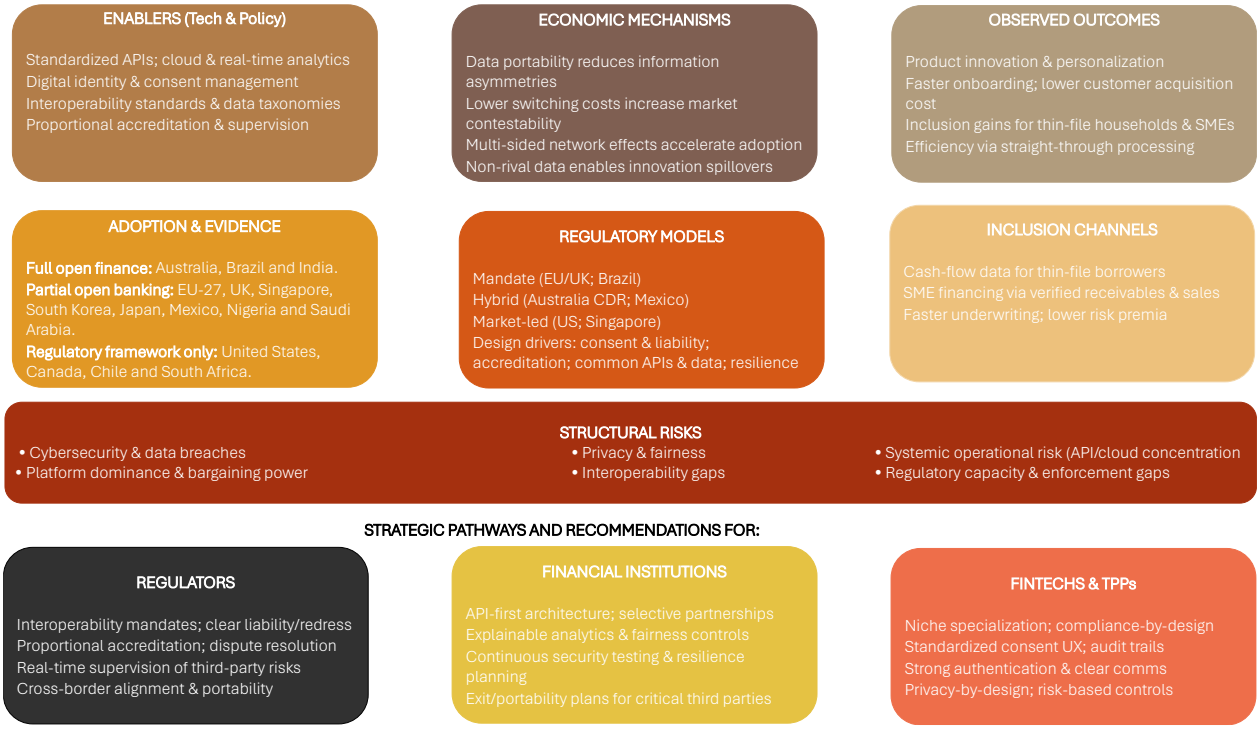
Risks to manage (and where we anchor controls):

- **Cyber and data breach** (FSB, 2020; DORA, 2022).
- **Privacy/consent quality and model fairness** (Acquisti, Taylor and Wagman, 2016; Kim, Andreeva and Rovatsos, 2023).
- **Interoperability and fragmentation costs** (OECD, 2023a; OECD, 2024a).
- **Platform concentration and bargaining power** (FSB, 2019).
- **Systemic operational risk from third-party dependencies** (FSB, 2023).

Strategic priorities (next 12–24 months).

- **Regulators:** Mandate interoperable APIs/data taxonomies; adopt proportional accreditation; clarify liability/redress; supervise critical third-party risk and align cross-border where feasible (JROC, 2023; FSB, 2023; DORA, 2022).
- **Financial institutions:** Build API-first stacks, partner selectively, deploy explainable analytics; run continuous security/resilience testing and maintain exit/portability plans (Stefanelli, Manta and Toma, 2022).
- **Fintechs/TPPs:** Compliance-by-design (standardised consent UX, audit trails, strong authentication), focus on underserved niches with demonstrable consumer benefit.

Figure 1 – Summary Diagram of the Report



Sources: Bank and Finance analysis; OECD (2023a; 2023b); OBL (2025a; 2025b); Open Finance Brasil Secretariat (2024); Sahamati (2025); FSB (2019; 2020; 2023); DORA (2022).

1. Introduction

The global financial system is undergoing a profound transformation driven by digital innovation, changing consumer expectations, and regulatory initiatives to enhance competition and inclusion. One of the most significant developments in this shift is **open finance**—the extension of data-sharing frameworks beyond payments and current accounts into the broader financial ecosystem, encompassing lending, insurance, pensions, investments, and emerging asset classes such as digital currencies (OECD, 2023).

Unlike traditional financial services, where institutions maintained exclusive control over customer data, open finance empowers individuals and businesses to grant authorized third parties secure access to their financial information through standardized and interoperable interfaces (He et al., 2020). This model, built upon the earlier wave of *open banking* initiatives, is predicated on the idea that data portability is as essential to financial markets as capital mobility (Odorović, 2023).

Several forces are converging to make open finance both inevitable and urgent. First, technological capabilities—particularly the widespread use of application programming interfaces (APIs), cloud computing, and advanced analytics—allow for real-time, secure data exchange at scale (Stefanelli, Manta and Toma, 2022). Second, competitive pressures from fintech entrants and big tech companies are challenging incumbents to differentiate through integrated, personalized services. Third, policymakers increasingly view open finance as a tool to improve market efficiency, reduce barriers to entry, and expand access to underserved populations (OECD, 2023).

Yet open finance is not without risks. Greater data interconnectivity increases exposure to cyber threats, privacy breaches, and operational disruptions (Kim, Andreeva and Rovatsos, 2023). Market structures could evolve toward excessive concentration if network effects favor a small number of dominant platforms (He et al., 2020). Regulatory approaches must therefore balance innovation incentives with systemic safeguards.

This report examines open finance from a **historical**, **theoretical**, and **empirical** perspective. It traces the evolution from proprietary banking to interoperable ecosystems, explores the economic mechanisms underpinning open data, presents global evidence on adoption and impacts, and identifies both opportunities and vulnerabilities. Finally, it provides strategic recommendations for regulators, financial institutions, fintechs, and consumers to maximize the benefits of open finance while mitigating its risks.

2. Historical Evolution of Open Finance

The concept of open finance did not emerge in isolation—it is the product of a decades-long progression in financial intermediation, technology adoption, and regulatory intervention.

2.1 Precursor: From Proprietary Systems to Open Banking

For most of the 20th century, financial data resided in **closed, institution-specific systems**. Consumers had little visibility into their complete financial profile across institutions, and switching providers was costly and time-consuming (OECD, 2023). The first shift toward openness came with **digital banking interfaces** in the late 1990s and early 2000s, which allowed customers to view account information online but offered no standardized method for data sharing with third parties.

The rise of **screen scraping** in the mid-2000s—where fintechs used customer credentials to extract account data—highlighted demand for broader access but also underscored severe security and liability issues (Odorović, 2023). Regulators responded by promoting **secure, standardized APIs** as a safer alternative.

The watershed moment was the **European Union's Second Payment Services Directive (PSD2)**, implemented from 2018, which mandated banks to provide licensed third parties with access to customer account data (with explicit consent). This framework catalyzed open banking ecosystems in the UK, EU, and later markets such as Australia and Singapore (OECD, 2023).

2.2 Transition to Open Finance

While open banking primarily covered payment accounts, consumer demand and regulatory ambition soon expanded the scope. **Open finance** extends data portability to a much broader range of financial products—savings, credit, mortgages, insurance, investments, pensions—allowing consumers to manage their entire financial life through interconnected services (He et al., 2020).

Pioneering jurisdictions have taken different paths:

- **United Kingdom**: Building on open banking, the UK's Financial Conduct Authority (FCA) initiated consultations on open finance in 2019, focusing on voluntary industry-led frameworks (OECD, 2023).

- **Brazil**: Launched an ambitious four-phase rollout (2021–2022) covering registration data, payment initiation, open banking services, and open finance products across banking, insurance, and investment sectors (IDB, 2022).

- **Mexico**: Incorporated open data provisions into its 2018 Fintech Law, including requirements for financial institutions to provide standardized APIs for different tiers of data access (IDB, 2022).

- **Australia**: Developed a broader **Consumer Data Right (CDR)** framework, with financial services as one of several covered sectors (OECD, 2023).

2.3 Technological Enablers

The leap from open banking to open finance has been made possible by:

- **API Standardization** (Stefanelli, Manta and Toma, 2022).
- **Cloud Infrastructure** (Legenvre, Autio and Hameri, 2025).
- **Advanced Analytics and AI** (Kim, Andreeva and Rovatsos, 2023).
- **Distributed Ledger Technologies (DLT)** (He et al., 2020).

2.4 Market Forces Driving Adoption

Beyond regulation, **consumer behavior** has shifted toward expecting seamless, cross-platform experiences similar to those in e-commerce and social media (OECD, 2023). Fintech innovators have leveraged open finance to develop **super-apps** integrating multiple financial services, while incumbents increasingly form partnerships to remain competitive. Investment flows into API and data analytics firms have surged, reflecting the market's anticipation of an open finance-driven transformation (IDB, 2022).

3. Fundamentals and Theoretical Foundations

Open finance rests on well-established concepts in economics and finance, particularly those concerning **information asymmetry**, **market efficiency**, **competition and contestability**, **network effects**, and **systemic risk**. These theoretical lenses help explain both the promise and the perils of moving toward a fully interconnected financial data ecosystem.

3.1 Reducing Information Asymmetry

In many financial markets, incumbents enjoy privileged access to customer data, creating **information asymmetry** that can limit competition and lead to pricing inefficiencies. Classic credit market theory (Stiglitz and Weiss, 1981) shows that such asymmetry can cause **adverse selection**, creating **credit rationing**—the exclusion of high-quality borrowers who are misclassified as risky.

By allowing consent-based, standardized sharing of financial data, open finance enables new entrants to assess creditworthiness and product fit with the same informational base as incumbents (He et al., 2020). This greater transparency can reduce mispricing, expand access to underserved populations, and lower transaction costs (Odorović, 2023). However, if competition for low-risk customers intensifies, **cream-skimming** can occur, where higher-risk segments face reduced service availability (He et al., 2023).

3.2 Competition and Market Contestability

From the perspective of **industrial organization theory**, open finance lowers **switching costs** and enhances **market contestability**—conditions under which the threat of entry forces incumbents to improve efficiency and pricing (Baumol, Panzar and Willig, 1982).

Lowering frictions in data portability allows consumers to compare and switch providers more easily, stimulating price competition and product innovation (OECD, 2023). Evidence from the UK's Competition and Markets Authority (CMA, 2022) indicates that open banking-enabled account aggregation tools have increased competitive pressure on incumbent banks, consistent with **two-sided platform** models where consumer-side ease of access drives service-side innovation (Rochet and Tirole, 2003).

3.3 Network Effects and Data Externalities

Open finance platforms benefit from **network effects**, where each additional participant (consumer, bank, fintech) increases the value of the network for others (Katz and Shapiro, 1994). Positive feedback loops can accelerate adoption but may also lead to **market concentration** if a small number of platforms achieve dominant scale.

Financial data is inherently **non-rivalrous**—its use by one party does not diminish its availability to others (Jones and Tonetti, 2020). While this allows for broad innovation, it can also create **negative externalities** if the same datasets are used for exclusionary pricing or discriminatory profiling (Kim, Andreeva and Rovatsos, 2023).

3.4 Privacy, Consent, and Trust Mechanisms

Economic models of privacy reveal a trade-off between the utility of shared data and the potential costs of privacy loss (Acquisti, Taylor and Wagman, 2016). Even with strong technical safeguards, behavioral research shows that consumers often grant consent without fully understanding downstream implications (Zhu and Zhang, 2025).

Trust in the system is therefore critical. Jurisdictions with clear **liability frameworks** for data breaches and unauthorized transactions tend to see higher adoption rates (OECD, 2023). The design of consent flows, authentication methods, and dispute resolution mechanisms directly affects consumer confidence.

While the theoretical frameworks above establish the importance of privacy, consent, and trust in open finance ecosystems, successful implementation requires deep understanding of user perspectives and behaviors. **Box 1** presents insights that synthesize key user-centered considerations that inform effective privacy design and trust-building mechanisms in practice:

Box 1 – User-Centered Insights

- **Financial Inclusion and Empowerment**
  Open finance can transform access for underserved populations, including thin-file, underbanked, and low-income consumers. By aggregating diverse financial data sources—such as utility payments, mobile wallets, and alternative credit metrics—open finance enables lenders and insurers to assess creditworthiness more inclusively. This promotes fairer access to essential financial products like loans, insurance, and retirement planning. Stories from emerging markets show how micro-entrepreneurs and gig workers can gain first-time access to credit and insurance products tailored to their unique financial patterns.

- **Personalization and User Control**
  Consumers increasingly demand personalized financial services tailored to their lifestyle and goals. Open finance ecosystems that incorporate consent-based data sharing empower users to select which providers can access specific financial information, enhancing trust and control. This includes easy-to-understand consent flows with granular permissions, allowing users to dynamically update or revoke data access. Such control fosters active engagement and reduces consent fatigue.

- **Enhanced Financial Management and Decision-Making**
  Open finance applications enable users to view a holistic snapshot of their financial health across banks, credit cards, pensions, and insurance. This visibility improves budgeting, saving, and debt management by providing actionable insights and tailored recommendations. For example, apps can alert users about upcoming bills, suggest refinancing options based on credit data, or optimize investment portfolios based on risk preferences.

- **User Experience and Accessibility**
  A seamless, intuitive user interface combined with robust security protocols enhances adoption and satisfaction. Accessibility features should cater to users with disabilities or limited digital literacy, including clear language, visual aids, and voice commands. In addition, multi-language support expands reach to diverse populations.

- **Trust and Privacy Concerns**
  Despite the benefits, users often worry about data privacy, misuse risks, and security breaches. Transparent communication about data handling, strong authentication protocols, and clear liability frameworks are critical to building and maintaining trust. Educational initiatives help users understand their rights and the protections in place, further encouraging participation.

- **Feedback Loops and Co-Design**
  Incorporating user feedback through surveys, usability testing, and participatory design ensures that open finance services meet real needs and address pain points. Co-designing features with diverse user groups, including marginalized communities, helps anticipation of barriers and improves inclusiveness.

- **Behavioral Insights and Nudges**
  Leveraging behavioral economics, open finance platforms can incorporate nudges that promote positive financial behavior – such as reminders for savings goals, warnings about overspending, or encouragement to compare insurance options. This not only helps individual users but contributes to overall financial system stability.

- **Impact on Trust in Financial Institutions**
  Well-implemented open finance can enhance trust in financial services by demonstrating transparency, fairness, and user empowerment. Conversely, negative experiences – such as data breaches or opaque consent practices – can erode confidence. Monitoring user sentiment and responding proactively to concerns should be an ongoing priority.

These user-centered insights underscore the importance of balancing innovation with consumer protection in open finance design.

3.5 Systemic Risk and Interconnectedness

While open finance can distribute market power more evenly, it also increases **interconnectedness**, which in network theory can amplify systemic vulnerabilities (Acemoglu, Ozdaglar and Tahbaz-Salehi, 2015). A disruption in a major API provider or cloud service could propagate across multiple institutions, creating correlated operational failures (FSB, 2019).

Effective risk management in open finance requires both **microprudential** measures (institution-level security, redundancy) and **macroprudential** oversight to identify concentration risks in key service providers.

4. Empirical Landscape

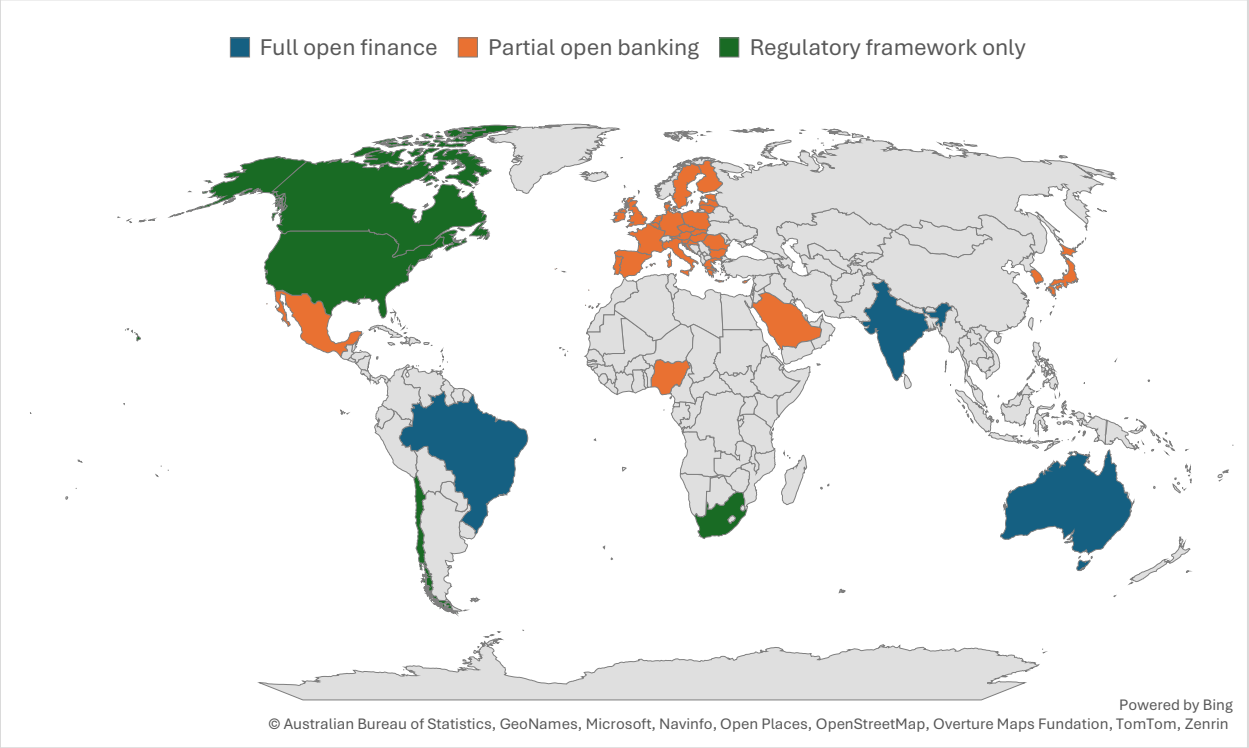
This section presents global evidence on the adoption, market impacts, and inclusion effects of open finance. It draws on comparative datasets from regulatory bodies, industry associations, and academic research to illustrate how the theoretical mechanisms described in Section 3 manifest in practice.

4.1 Global Adoption Patterns

Open finance adoption remains highly uneven across jurisdictions, reflecting differences in regulatory frameworks, technological readiness, and market incentives.

- **Geographic spread**: As of late 2024, **78 jurisdictions** had enacted open banking or open finance regulations, up from 60 in 2022 (OECD, 2023). Of these, approximately one-third had moved beyond payment data into full open finance regimes (IDB, 2022). **Full open finance** has been implemented by Australia, Brazil and India. **Partial open banking** is now implemented in EU-27, the United Kingdom, Singapore, South Korea, Japan, Mexico, Nigeria and Saudi Arabia. **Regulatory framework only** is present in the United States, Canada, Chile and South Africa. This information is summarized in **Figure 2** where classification reflects de jure instruments and supervisory practice; where statutes exist but secondary rules are pending (e.g., Canada), classification follows enacted law as of Aug 2025.

Figure 2 – Global Open Finance Adoption Map (2025)



Source: *Classification synthesized from OECD (2023) Open finance policy considerations and Shifting from Open Banking to Open Finance; EU PSD2 and UK OBL/JROC; Banco Central do Brasil (Open Finance phases); Australia ACCC/Treasury (CDR); India's Account Aggregator (Sahamati; CCAF APAC 2025); HKMA Open API Framework; MAS/ABS API Playbook; U.S. CFPB §1033 rule. Metrics reflect framework stage rather than full scope of implementation.*

- **User base**: In the UK, active open banking users reached **13.3 million** by March 2025, representing nearly **25% of the adult population** (OBL, 2025a). Brazil's open finance platform recorded **over 30 million consented data-sharing arrangements** within 18 months of launch (Banco Central do Brasil, 2023).

- **API volume**: India's Account Aggregator system processes more than **1.2 billion API calls per quarter**, indicating high transaction intensity (Reserve Bank of India, 2024).

Key indicators, for selected jurisdictions, are summarized in **Table 1.**

Table 1 – Open Finance Adoption Indicators (Selected Jurisdictions, 2024–2025)

Country / Region	Regulatory Model	Coverage Scope	Active Users (m)	API Calls (per quarter)
UK	Regulatory mandate	Banking, credit, pensions, investments	13.3	~500m
Brazil	Regulatory mandate	Banking, credit, insurance, investments	30+	~300m
Australia	Consumer Data Right	Multi-sector including finance	5.5	n/a
India	Account Aggregator	Multi-institution financial data	n/a	1.2b

Sources: OBL, 2025a; Banco Central do Brasil, 2023; OECD, 2023; RBI, 2024.

4.2 Market Impact and Competition Effects

Empirical studies support the proposition that open finance reduces switching costs and promotes competition.

- **Price competition**: The UK's CMA (2022) found that after open banking implementation, challenger banks increased their market share in personal current accounts by **4 percentage points** over four years, with some of the gains attributable to aggregation tools.

- **Product innovation**: Brazil has seen the emergence of over **100 new fintech products** since its open finance rollout, ranging from personalized loan offers to dynamic insurance pricing (IDB, 2022).

- **Interoperability benefits**: Evidence from Australia's Consumer Data Right shows that fintechs using multi-institution data APIs had **40% lower customer acquisition costs** compared to those relying on proprietary integration (ACCC, 2023).

4.3 Financial Inclusion Outcomes

Open finance has demonstrated potential to improve access for underserved populations, though results are uneven.

- **Credit access**: In India, microfinance institutions using Account Aggregator data reduced loan processing times by **60%** and increased approval rates for thin-file customers by **15%** (RBI, 2024).

- **SME financing**: Research in Latin America shows that SME lenders with API access to cash-flow data reduced average interest rates by **2–3 percentage points** for eligible borrowers (IDB, 2022).

- **Gender inclusion**: Pilot programs in Brazil found that women entrepreneurs using open finance-enabled services were **20% more likely** to secure formal credit (Banco Central do Brasil, 2023).

The financial inclusion outcomes documented above demonstrate the tangible benefits of open finance across diverse populations and markets. To illustrate how these outcomes manifest in practice, **Box** 2 presents case studies that showcase successful implementations that have delivered measurable inclusion benefits across different regulatory environments

Box 2 – Practical Examples

- **UK Open Banking Ecosystem**
  The UK's mandated open finance model enables consumers to consolidate their banking, credit, and investment data via authorized third-party providers (TPPs). For example, apps like TrueLayer and MoneyDashboard offer users a unified financial dashboard that helps with budgeting, investment tracking, and loan comparisons.

- **Brazil's Insurance and Credit Integration**
  Brazil's open finance ecosystem extends beyond banking to insurance and credit products. For instance, consumers can seamlessly apply for loans by sharing verified credit and income data through APIs, speeding up approvals and reducing paperwork.

- **India's Account Aggregator Model**
  India's Account Aggregator framework empowers users to control sharing of their financial data (bank accounts, mutual funds, pensions) with consent-based data flows to third-party services. This has enabled fintechs to offer personalized financial advice and credit assessments to consumers with thin credit files.

- **Australia's Consumer Data Right (CDR)**
  CDR's multi-sector approach benefits consumers by enabling seamless switching between service providers in banking, energy, and telecommunications, enhancing choice and price competition.

These examples demonstrate the versatility of open finance frameworks across different regulatory approaches and market conditions.

4.4 Risks and Early Warning Indicators

Even in early stages, data suggest that some of the risks outlined in Section 3 are materializing.

- **Market concentration**: In several jurisdictions, a small number of large technology providers dominate API infrastructure, creating potential single points of failure (FSB, 2019).

- **Privacy incidents**: The UK's FCA reported a **12% increase** in data breach notifications linked to third-party providers in the two years following PSD2 implementation (FCA, 2024).

- **Operational dependency**: In Australia, three major cloud service providers support over **80%** of accredited data recipients under the Consumer Data Right (ACCC, 2023).

5. Structural Risks and Emerging Challenges

While open finance holds significant promise for enhancing competition, innovation, and inclusion, it also creates new and complex vulnerabilities. These risks stem from the increased interconnectedness of the financial ecosystem, the sensitivity of shared data, and the evolving role of technology providers. Understanding these structural challenges is essential for designing resilient frameworks.

5.1 Cybersecurity and Data Breach Risks

The expansion of interoperable APIs increases the surface area for cyberattacks. Even if APIs are secure by design, attackers can exploit weaknesses in third-party providers' systems or in the consent management process (FSB, 2022). Empirical evidence from the UK shows that open banking-related data breach notifications rose by 12% between 2020 and 2023 (FCA, 2024).

Moreover, as noted by Kim, Andreeva and Rovatsos (2023), advanced analytics on transaction data can reveal sensitive personal attributes—even from seemingly innocuous variables—raising the stakes for privacy breaches. The interconnected nature of open finance means a single compromised endpoint can cascade across multiple institutions.

5.2 Privacy, Consent, and Data Governance

Although open finance is premised on user consent, behavioral studies find that consent fatigue leads to indiscriminate acceptance of terms, undermining meaningful choice (Acquisti, Taylor and Wagman, 2016).

Regulatory frameworks such as the EU's General Data Protection Regulation (GDPR) and Brazil's Lei Geral de Proteção de Dados (LGPD) set baseline requirements for data minimization, purpose limitation, and user rights. However, Odorović (2023) notes that compliance is uneven, and some jurisdictions lack clear allocation of liability between data providers and recipients in the event of misuse or breach.

5.3 Interoperability and Standardization Challenges

Fragmentation in API standards limits the cross-border scalability of open finance. While jurisdictions like the UK have established common technical specifications through Open Banking Limited (OBL) – formerly the Open Banking Implementation Entity (OBIE) – others allow proprietary standards, creating integration costs for multi-market providers (OECD, 2023).

A lack of alignment in data taxonomies, security protocols, and authentication flows can also create **systemic friction** that slows innovation and reduces consumer benefits (Stefanelli, Manta and Toma, 2022).

5.4 Market Concentration and Platform Dominance

Network effects in open finance ecosystems can produce **winner-take-all** outcomes, where a few large platforms control the majority of data flows (Katz and Shapiro, 1994). This concentration can occur both at the **consumer interface level** (dominant super-apps) and at the **infrastructure layer** (cloud hosting, API gateways).

The Australian Competition and Consumer Commission (ACCC, 2023) has warned that over 80% of accredited data recipients rely on just three cloud providers—creating potential single points of failure and raising concerns about bargaining power in data access terms.

5.5 Systemic Operational Risks

The operational resilience of open finance depends on the reliability of interconnected digital infrastructure. Acemoglu, Ozdaglar and Tahbaz-Salehi (2015) show that in networked systems,

efficiency gains from interconnection plateau and can reverse once contagion channels multiply. In open finance, a technical outage or cyber incident in one node—such as an API management platform—can quickly disrupt services across multiple providers (FSB, 2022).

Concentration risk is heightened where multiple critical services (e.g., authentication, payment initiation, data aggregation) are outsourced to the same technology provider. This risk profile requires **macroprudential** oversight in addition to firm-level resilience planning.

5.6 Regulatory Capacity and Enforcement Gaps

Open finance regimes require regulators to supervise not only traditional financial institutions but also fintechs, technology vendors, and data aggregators. The OECD (2023) highlights that many supervisory authorities lack the technical expertise and real-time monitoring tools needed for effective oversight, particularly in emerging markets.

Without adequate enforcement capacity, rules on consent, liability, and interoperability risk becoming nominal, eroding trust and limiting adoption.

Table 2 distils Section 5 into a practical checklist, grouping the main open-finance vulnerabilities—cybersecurity/data breach, privacy and consent, interoperability/ fragmentation, market concentration and platform dominance, systemic operational risk, and regulatory capacity/enforcement—and pairing each with early-warning indicators, concrete examples, and actionable supervisory tools (e.g., liability/redress rules, tiered accreditation, conformance and resilience testing, third-party/concentration oversight). It is designed for quick use by policymakers and risk teams to prioritize controls and sequence reforms with proportionality in mind, drawing on leading frameworks for operational resilience and third-party risk.

Table 2 – Risk Taxonomy and Mitigants

Risk category	Early-warning / indicators	Examples	Policy mitigants / supervisory tools
Cybersecurity and data breach	Rise in API-related incidents; rising breach notifications; concentration of cloud/API providers	Interconnected Third Party Provider (TPP)/API ecosystem expanding attack surface; critical service providers supporting majority of recipients	Baseline security standards; third-party risk management; incident reporting and testing; shared threat intel; operational resilience regimes
Privacy, consent and data misuse	Opaque consent flows; broad data scopes; consumer complaints about misuse	Consent fatigue; repurposing of data beyond stated purpose	Data minimization; purpose limitation; standardized consent UX; clear liability and redress; strong authentication
Interoperability and	Divergent API specs; inconsistent data taxonomies;	Cross-border and cross-sector use cases blocked; duplicated integrations	Common API and data standards; conformance testing; performance Service

fragmentation	high integration costs		Level Agreements (SLAs); standards bodies with regulatory oversight
Market concentration and platform dominance	High HHI for API gateways/cloud; few super-apps control consumer interface	Winner-take-all dynamics; bargaining power imbalances	Data portability and interoperability mandates; fair access rules; pro-competitive remedies; monitoring of critical service providers
Systemic operational risk	Outages at shared utilities; correlated incidents across firms	Single API gateway or identity provider outage propagates across ecosystem	Resilience testing; redundancy; exit/portability plans; sector-wide exercises; macroprudential lens on third-party concentration
Regulatory capacity and enforcement gaps	Lag in accreditation/oversight; low monitoring coverage	Inconsistent compliance among TPPs; unclear liability in multi-party chains	Resourcing and skills for supervisors; data-driven supervision; tiered accreditation; clear enforcement powers

***Source**: FSB, 2023; DORA, 2022; OECD, 2023; HKMA, 2018; ACCC/Treasury, 2024. FSB (2023) – Enhancing Third-Party Risk Management and Oversight: A Toolkit (core structure for third-party/concentration risk, incident reporting, testing, and information-sharing). EU DORA (Regulation (EU) 2022/2554) – operational-resilience obligations for ICT/third-party risk (resilience testing, incident classification/reporting, critical service oversight). UK PRA SS2/21 (updated 2024) and FCA/BoE Operational Resilience policy statements (impact tolerances, mapping, testing; outsourcing/third-party controls). OECD (2023) – Open Finance: Policy Considerations (consent, liability allocation, accreditation, interoperability). HKMA (2018) – Open API Framework for the Banking Sector (API security, phased adoption, governance). ACCC / Australian Treasury (2024–25) – Consumer Data Right standards and accreditation guidance (security profiles, dispute resolution).*

6. Regulatory and Policy Frameworks

Regulatory approaches to open finance vary widely across jurisdictions, reflecting differences in legal traditions, market structures, and policy priorities. While some countries have taken a **regulatory mandate** approach with prescriptive rules and technical standards, others have relied on **market-led frameworks** supported by voluntary industry coordination. A third group is pursuing **hybrid models** that combine statutory obligations with flexible industry-led implementation.

6.1 Regulatory Mandate Models

In the **mandate model**, legislation or regulation requires financial institutions to share data with accredited third parties through standardized APIs, subject to consumer consent.

- **European Union and United Kingdom**: The EU's PSD2 and the UK's Open Banking regulations exemplify the prescriptive approach, specifying both access rights and

technical requirements (OECD, 2023). The UK's OBL sets common API standards, security protocols, and certification processes, ensuring interoperability (OBL, 2025a / 2025b).

- Brazil: The Central Bank mandated a phased rollout of open banking and open finance between 2021–2022, covering registration data, payments, credit, insurance, and investment products (IDB, 2022). Participation is compulsory for large institutions, with smaller entities able to opt in.

Advantages: High coverage, interoperability, and legal enforceability.

Risks: Higher compliance costs and potential stifling of innovation if standards are overly rigid (Odorović, 2023).

6.2 Market-Led Models

In market-led approaches, industry participants develop voluntary standards and operational frameworks without a legal requirement for participation.

- United States: No federal open finance mandate exists; instead, frameworks like the Financial Data Exchange (FDX) establish common APIs for participating banks and fintechs (CFPB, 2023). The Consumer Financial Protection Bureau is exploring formal rules under Section 1033 of the Dodd–Frank Act, but implementation timelines remain uncertain.

- Hong Kong: The Monetary Authority encourages but does not compel API adoption, issuing guidelines and a common API framework that banks can voluntarily implement (HKMA, 2018; HKMA, 2021; HKMA, 2022; HKAB; 2021).

Advantages: Greater flexibility and innovation, lower compliance burden.

Risks: Patchy adoption, interoperability gaps, and weaker consumer protections (OECD, 2023).

6.3 Hybrid Models

Hybrid frameworks combine legislative requirements with significant scope for industry self-regulation.

- Australia: The Consumer Data Right (CDR) applies across multiple sectors, including finance, energy, and telecoms. While data holders are mandated to provide API access, the development of technical standards is led by the Data Standards Body in consultation with industry (ACCC, 2023).

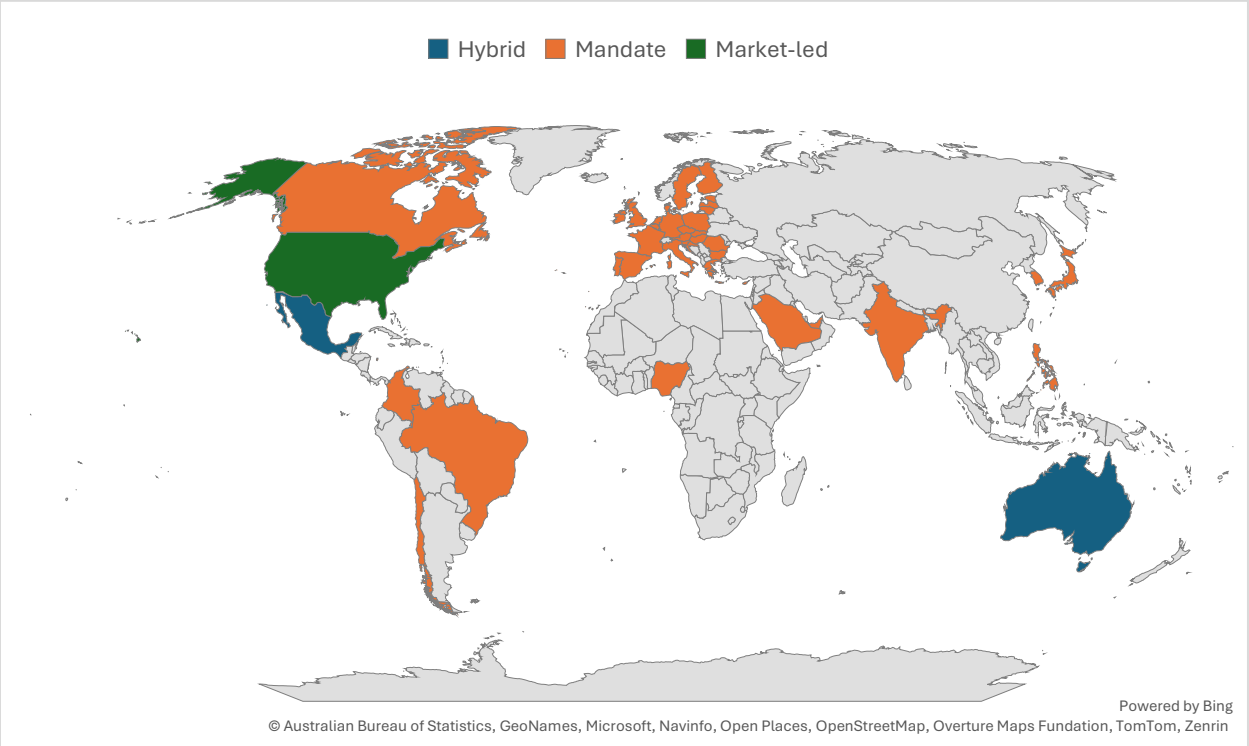
- **Mexico**: The 2018 Fintech Law mandates API-enabled data sharing for different tiers of information, but allows industry bodies to define technical details, subject to regulatory approval (IDB, 2022).

Advantages: Balances enforcement with adaptability.

Risks: Potential for uneven implementation if industry standards diverge from policy objectives.

Figure 3 presents a global regulatory typology map that locates jurisdictions by their *predominant* approach as of August 2025—**Mandate** (statutory/legal requirement to provide API access with accreditation and common standards), **Hybrid** (statutory access paired with industry-led technical standards and co-regulation), and **Market-led** (voluntary standards and supervisory guidance while rulemaking matures). The shading is based on de jure instruments and supervisory practice rather than pilot activity, and it reflects the latest available public sources; where countries are mid-transition, we classify them by the framework most in force today. **Mandate** is the most common regulatory type with the following 40 countries**:** EU-27 (shown individually), Bahrain, Brazil, Canada, Chile, Colombia, India, Japan, Nigeria, Philippines, Saudi Arabia, South Korea, United Arab Emirates and United Kingdom. **Market-led** is present in the United States, Singapore and Hong Kong. **Hybrid** is present in Australia and Mexico.

Figure 3 – Regulatory Typology Map



Source: *Classification synthesized from primary regulatory texts and official authority pages, including* ***EU PSD2*** *(Directive (EU) 2015/2366);* ***UK JROC/FCA-PSR*** *materials;* ***Brazil*** *Central Bank Open Finance;* ***Australia*** *Consumer*

Data Right (Treasury/ACCC); ***India*** *RBI Account Aggregator Directions and Sahamati;* ***Canada*** *Consumer-Driven Banking Act (2024);* ***United States*** *CFPB Personal Financial Data Rights final rule (2024);* ***Hong Kong SAR*** *HKMA Open API Framework;* ***Singapore*** *MAS/ABS API Playbook;* ***UAE*** *CBUAE Open Finance Regulation (2024/2025);* ***Saudi Arabia*** *SAMA Open Banking Framework (AIS/PIS);* ***Bahrain*** *CBB Open Banking regulations/BOBF;* ***Nigeria*** *CBN Operational Guidelines for Open Banking (2023);* ***Philippines*** *BSP Circular No. 1122 (Open Finance Framework, 2021);* ***Colombia*** *Decree 1297/2022 and SFC Circular Externa 004/2024;* ***Chile*** *Ley 21.521 and CMF rule (2024) for the Sistema de Finanzas Abiertas;* ***South Korea*** *FSC/KFTC open-banking platform (Dec-2019);* ***Japan*** *2018 Banking Act revisions on open APIs. For cross-jurisdictional context see* ***OECD (2023)*** *Open finance policy considerations and Shifting from Open Banking to Open Finance. Jurisdictions are grouped by* ***regulatory approach*** *(Mandate / Hybrid / Market-led). Some frameworks are in phased rollout; where a statute exists but secondary rules are pending (e.g., Canada), we classify by the enacted legal framework and regulator statements as of the date above.*

6.4 Cross-Cutting Policy Considerations

Across models, several policy design elements are critical to achieving the goals of open finance:

- Consent and Liability Frameworks: Clear allocation of responsibilities between data providers, recipients, and intermediaries (Acquisti, Taylor and Wagman, 2016).
- Accreditation and Supervision: Criteria for third-party accreditation and ongoing oversight to manage risks from non-bank actors (OECD, 2023).
- Interoperability Standards: Alignment of API specifications, security protocols, and data taxonomies to enable cross-border and multi-sectoral integration (Stefanelli, Manta and Toma, 2022).
- Dispute Resolution Mechanisms: Accessible channels for consumers to resolve complaints about data misuse or service disruption (FCA, 2024).

6.5 Emerging Global Trends

Several trends suggest a gradual convergence in regulatory thinking:

- Expansion beyond banking: Jurisdictions are moving toward sector-neutral frameworks that encompass insurance, pensions, and investments (OECD, 2023).
- Cross-border interoperability: Regional initiatives, such as the ASEAN Payment Connectivity Framework, are exploring API alignment for multi-country data flows (BIS, 2024).
- Integration with digital identity systems: Some regimes are linking open finance to national e-ID platforms, reducing authentication friction (IDB, 2022).

7. Strategic Pathways and Recommendations

Maximizing the benefits of open finance while managing its risks requires coordinated action across regulators, financial institutions, fintechs, and consumers. This section outlines strategic priorities for each stakeholder group, grounded in the evidence and analysis presented in previous sections.

7.1 For Regulators and Policymakers

1. Strengthen Interoperability Standards
   Mandate API specifications, data taxonomies, and authentication protocols that are consistent across institutions and compatible across borders (OECD, 2023; Stefanelli, Manta and Toma, 2022). This will lower integration costs and enable scale in innovation.

2. Establish Clear Liability and Redress Frameworks
   Define the allocation of responsibilities for data misuse, breaches, and operational outages. Introduce mandatory dispute resolution mechanisms with binding timelines (Acquisti, Taylor and Wagman, 2016).

3. Adopt Proportional Accreditation Regimes
   Design tiered licensing for third-party providers that aligns regulatory obligations with systemic impact, reducing entry barriers for small but low-risk innovators (Odorović, 2023).

4. Enhance Supervisory Capacity
   Invest in the technical expertise and monitoring tools needed to supervise both financial institutions and non-bank data intermediaries in real time (OECD, 2023).

5. Promote Cross-Sector and Cross-Border Integration
   Leverage regional or bilateral agreements to align open finance frameworks with digital identity, payment systems, and consumer data rights initiatives (BIS, 2024).

7.2 For Financial Institutions

1. Adopt API-First Architectures
   Build modular systems capable of securely sharing and consuming third-party data, ensuring scalability as the scope of open finance expands (Stefanelli, Manta and Toma, 2022).

2. Leverage Data for Personalized Services
   Use advanced analytics to offer hyper-personalized financial advice, product recommendations, and risk-based pricing, while adhering to fairness and privacy principles (Kim, Andreeva and Rovatsos, 2023).

3. Forge Strategic Partnerships
   Collaborate with fintechs, technology vendors, and even competitors to create bundled offerings and improve customer retention in an open-data environment (He et al., 2020).

4. Strengthen Cybersecurity Posture
   Implement multi-layered security measures for API endpoints, including continuous penetration testing and real-time threat monitoring (FSB, 2020).

7.3 For Fintechs and Third-Party Providers

1. Differentiate Through Niche Specialization
   Focus on underserved customer segments or high-value use cases rather than replicating incumbent offerings (OECD, 2023).

2. Ensure Compliance-by-Design
   Embed regulatory requirements into product architecture from inception to reduce compliance retrofitting costs (Odorović, 2023).

3. Build Consumer Trust
   Offer clear, accessible explanations of consent and data use policies, and implement strong authentication to reinforce security assurances (Acquisti, Taylor and Wagman, 2016).

7.4 For Consumers

1. Exercise Data Rights Actively
   Leverage consent mechanisms to compare and switch providers, maximizing the benefits of competition (OECD, 2023).

2. Stay Informed on Data Use
   Understand the implications of sharing financial data, particularly regarding privacy, pricing, and targeted product offers (Kim, Andreeva and Rovatsos, 2023).

3. Adopt Secure Practices
   Use strong authentication methods and regularly review permissions granted to third-party applications.

7.5 Cross-Cutting Strategic Imperatives

- Balance Innovation with Risk Mitigation: Avoid both regulatory overreach, which can stifle innovation, and under-regulation, which can undermine trust.

- **Align Open Finance with Broader Policy Goals**: Integrate open finance strategies with national agendas for financial inclusion, SME development, and digital transformation.

- **Measure and Report Outcomes**: Develop metrics for competition, inclusion, and innovation impacts to guide iterative policy adjustments.

8. Conclusions and Next Steps

Open finance represents a transformative shift in how financial services are delivered, consumed, and regulated. By extending secure, consent-based data sharing across the full spectrum of financial products, it promises to increase competition, foster innovation, and enhance inclusion. The evidence from early adopters—such as the UK, Brazil, Australia, and India—demonstrates tangible benefits: lower switching costs, greater product variety, improved credit access, and faster onboarding processes.

However, these opportunities come with structural risks. Increased interconnectedness amplifies cybersecurity and operational vulnerabilities. Market concentration at both the platform and infrastructure layers threatens the very competition open finance aims to promote. Regulatory capacity gaps, inconsistent interoperability standards, and unclear liability frameworks can undermine trust and slow adoption.

The theoretical analysis in this report underscores that open finance can improve market efficiency and welfare by reducing information asymmetry and promoting contestability—but only if risks are proactively addressed. Empirical evidence confirms that jurisdictions with strong governance, clear technical standards, and effective oversight achieve better outcomes.

Looking forward, the next phase of open finance will likely be defined by:

- **Expansion in scope** to cover multiple sectors beyond traditional finance.

- **Integration with digital identity and payment systems** for seamless cross-platform user experiences.

- **Cross-border interoperability** to support globalized financial services and data flows.

- **Embedded finance models**, where open finance APIs enable financial services to be delivered directly within non-financial platforms.

Next Steps for stakeholders include:

- Regulators should develop robust cross-sectoral frameworks, align standards internationally, and build supervisory capacity.

- Financial institutions and fintechs must prioritize security, interoperability, and consumer trust to maintain relevance.

- Consumers need to be empowered with awareness, education, and tools to exercise their data rights effectively.

Open finance is not merely a technical upgrade—it is a structural evolution of the financial system. Its trajectory will depend on the balance struck between enabling innovation and safeguarding stability. As adoption accelerates, proactive, collaborative governance will be essential to ensure that open finance delivers on its promise of a more competitive, inclusive, and resilient financial ecosystem.

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10. Appendices

Appendix A. Methodology and Data Sources

A1. Scope and cut-off

Analysis reflects frameworks and metrics available **as of 13 Aug 2025**. Jurisdictional status refers to the predominant framework in force (de jure + supervisory practice).

A2. Key definitions

- **Implementation stage** (used in Figure 1): *Regulatory framework only* (policy intent/primary law; limited APIs), *Partial open banking* (payments/current accounts), *Full open finance* (multi-product scope incl. credit, investments, insurance, pensions).

- **Regulatory typology** (used in map/matrix): *Mandate* (statutory API access + accreditation/standards), *Hybrid* (statute + industry co-regulation), *Market-led* (voluntary standards + supervisory guidance).

- **"Active users"**: individuals/SMEs that used an open-banking-enabled service within the reporting window (OBL, 2025a).

- **"Consents"**: valid, user-authorized data-sharing permissions (OFB, 2024; Sahamati, 2025).

A3. Data collection

Primary: official regulators, central banks, and program operators (e.g., OBL/UK, BCB/Open Finance Brasil, RBI/Sahamati, ACCC/Treasury). Secondary: OECD (2023a; 2023b; 2024), CCAF global/APAC reports, CMA reviews. Citations in text use (Author, Year) and the reference list provides full Harvard entries.

A4. Harmonization and comparability

Metrics differ (users vs. consents vs. API calls). We report each as *headline indicators* and do **not** normalize across regimes. Cross-jurisdiction comparisons are qualitative unless explicitly stated.

A5. Limitations

Evolving rules (e.g., CFPB §1033 rollout; Canada implementation timeline) may shift

classifications. Some dashboards revise historical totals; where discrepancies arose we used the latest official snapshot.

A6. Ethics and privacy

All datasets are aggregate/programmatic; no personal data were processed. Discussion of fairness/privacy risks draws on Acquisti et al. (2016) and Kim et al. (2023).

Appendix B. Glossary of Key Terms and Acronyms

AA — **Account Aggregator** Consent-based data-sharing utility in India's framework (RBI).

ACCC / CDR — Australian regulator / Consumer Data Right (multi-sector, API-based).

API — Application Programming Interface enabling standardized data exchange.

BCB / Open Finance Brasil — Banco Central do Brasil (Central Bank of Brazil) / Open Finance Brasil.

CBUAE — Central Bank of the United Arab Emirates.

CDR — Consumer Data Right (Australia).

CFPB — Consumer Financial Protection Bureau (United States).

Consent dashboard — Interface where users grant/revoke data access.

Data portability — User right to move/reuse data across providers.

DORA — Digital Operational Resilience Act (EU) for ICT/third-party risk.

FCA — Financial Conduct Authority (UK).

FSC — Financial Services Commission (South Korea).

HKAB – Hong Kong Association of Banks.

HKMA — Hong Kong Monetary Authority.

JROC — Joint Regulatory Oversight Committee (UK).

KFTC — Korea Financial Telecommunications and Clearings Institute.

MAS — Monetary Authority of Singapore.

OAF — Open API Framework (HKMA).

OECD — Organisation for Economic Co-operation and Development.

OBL — Open Banking Limited (UK) – formerly the Open Banking Implementation Entity (OBIE) – is the delivery organisation working with the CMA9 and other stakeholders to define and develop the required APIs, security and messaging standards that underpin open banking in the UK.

OECD — Organisation for Economic Co-operation and Development.

PISP — Payment-Initiation Service Provider.

PP — Percentage Points.

PSD2 — Payment Services Directive 2 (EU Directive (EU) 2015/2366).

RBI — Reserve Bank of India.

SAMA — Saudi Arabian Monetary Authority.

Sahamati — Industry alliance supporting India's AA ecosystem.

SCA — Strong Customer Authentication under PSD2.

SFC — Superintendencia Financiera de Colombia (Financial Superintendency of Colombia).

SLAs — Service Level Agreements.

TPP — Third-Party Provider.

Third-party concentration risk — Dependence on a few cloud/API vendors.

UAE — United Arab Emirates.

UX — User Experience.

Appendix C. Jurisdiction Notes (selected)

- United Kingdom — Mandate (OB); strong standards body (OBL); ~13.3 m active users; payments at scale (OBL, 2025a; CMA, 2022).

- European Union — Mandate (PSD2, SCA/CSC); moving toward broader data-sharing under complementary regimes (EU, 2015; 2018).
- Brazil — Mandate; phased open finance across credit/insurance/investments; tens of millions of consents (OFB, 2024; BCB portal).
- Australia — Hybrid (CDR); multi-sector model; Data Standards Body; accreditation regime (ACCC/Treasury, 2024–25).
- India — Full open finance rails via AA; hundreds of millions of successful consents; inclusion gains in thin-file credit (Sahamati, 2025; CCAF, 2025).
- United States — Market-led with §1033 final rule (2024) moving to implementation; strong private standards (CFPB, 2024a; 2024b).
- Singapore / Hong Kong SAR — Market-led, guidance-driven API programs (MAS/ABS; HKMA, 2018).
- Mexico — Hybrid (Fintech Law 2018 + secondary rules) (IDB, 2022).
- Canada — Mandate legislated; implementation targeted for 2026 (Gov. of Canada statements).

Appendix D. KPI Definitions and Monitoring Playbook

Core KPIs (reporting quarterly unless noted):

- Active users (count) — unique users transacting via open-banking/finance services.
- Active consents (count) — valid data-sharing permissions in force.
- New consents / revocations (flow) — monthly.
- API uptime / latency — by endpoint family.
- Payments initiated — number/value (monthly).
- SME/retail credit approvals via open finance — share and turnaround time.
- Security incidents — per 1 m consents; mean time to detect/recover.

- **Third-party concentration** — HHI of cloud/API providers supporting accredited TPPs.

Data quality checks: reconcile with official dashboards; flag step changes >±10%; annotate scope changes (e.g., new verticals added).

Appendix E. Risk Indicator Dashboard (template)

Risk area	Indicator (unit)	Thresholds (amber/red)	Typical sources	Supervisory tools
Cybersecurity/data breach	Incidents per 1 m consents	>2 / >5 (rolling 12m)	FCA/OBL, CDR OAIC, BCB/OFB	Incident reporting, testing, intel-sharing
Privacy/consent	Revocations as % of consents	>8% / >15%	OBL, Sahamati, CDR dashboards	Standardized consent UX, liability/redress
Interoperability	Failed calls % (info endpoints)	>1% / >3%	API monitoring	Conformance tests, SLAs
Concentration	Top-3 vendor share	>70% / >85%	accreditation registers	Critical third-party oversight
Systemic ops risk	Major outages (quarter)	≥1 / ≥2	status pages	Sector-wide exercises, redundancy
Inclusion	Thin-file approvals (pp change)	<0 / <-3	credit registries/pilots	Open data expansion, tiered accreditation

Thresholds are placeholders to be calibrated to each jurisdiction's baseline. Built from FSB (2023), DORA (2022), JROC (2023), OECD (2023a).

Appendix F. Data Access and Licensing

All statistics are from publicly available official sources (program dashboards, regulatory reports) and multilateral publications. Use is permitted for research/reporting with attribution. Where reuse restrictions apply (e.g., OBL dashboards), cite the operator and link to the original page. No personal data were used.