Regulatory Considerations for Enabling Open Finance in EMDEs

Incentives, Liability, and Performance Measurement

A condensed reference for regulators, translating the three-pillar framework into practical considerations.

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Introduction

This paper gathers, in one place, the regulatory considerations developed across the three pillars of Enabling Open Finance in Emerging Markets and Developing Economies (EMDEs). It is intended as a working reference for regulators, financial authorities, and policy teams who want the practical design considerations without the full analytical apparatus of the main report, Enabling Open Finance in EMDEs: Incentives, Liability, and Performance Measurement. The main report provides the underlying analytical framework, comparative country experience, supporting evidence, and detailed discussion of the trade-offs associated with different regulatory approaches. Readers interested in the rationale behind the recommendations presented here, as well as the empirical examples and source material on which they are based, are encouraged to consult the relevant chapters of the main report.

The considerations are drawn from an evidence base of nine EMDEs: Brazil, Egypt, Ghana, India, Indonesia, Nigeria, the Philippines, Saudi Arabia, and South Africa, complemented by selected references to implementation experience elsewhere. Given a small and diverse sample, these considerations are best read as illustrative tendencies and design considerations rather than universal conclusions, and should be adapted to each country's institutional and market context.

These considerations are also a starting point rather than a verdict. Considering different policy objectives and reform priorities, Open Finance may not be the right intervention for every economy at every stage, and policymakers should weigh it against their own objectives and market conditions.

The Three-Pillar Framework

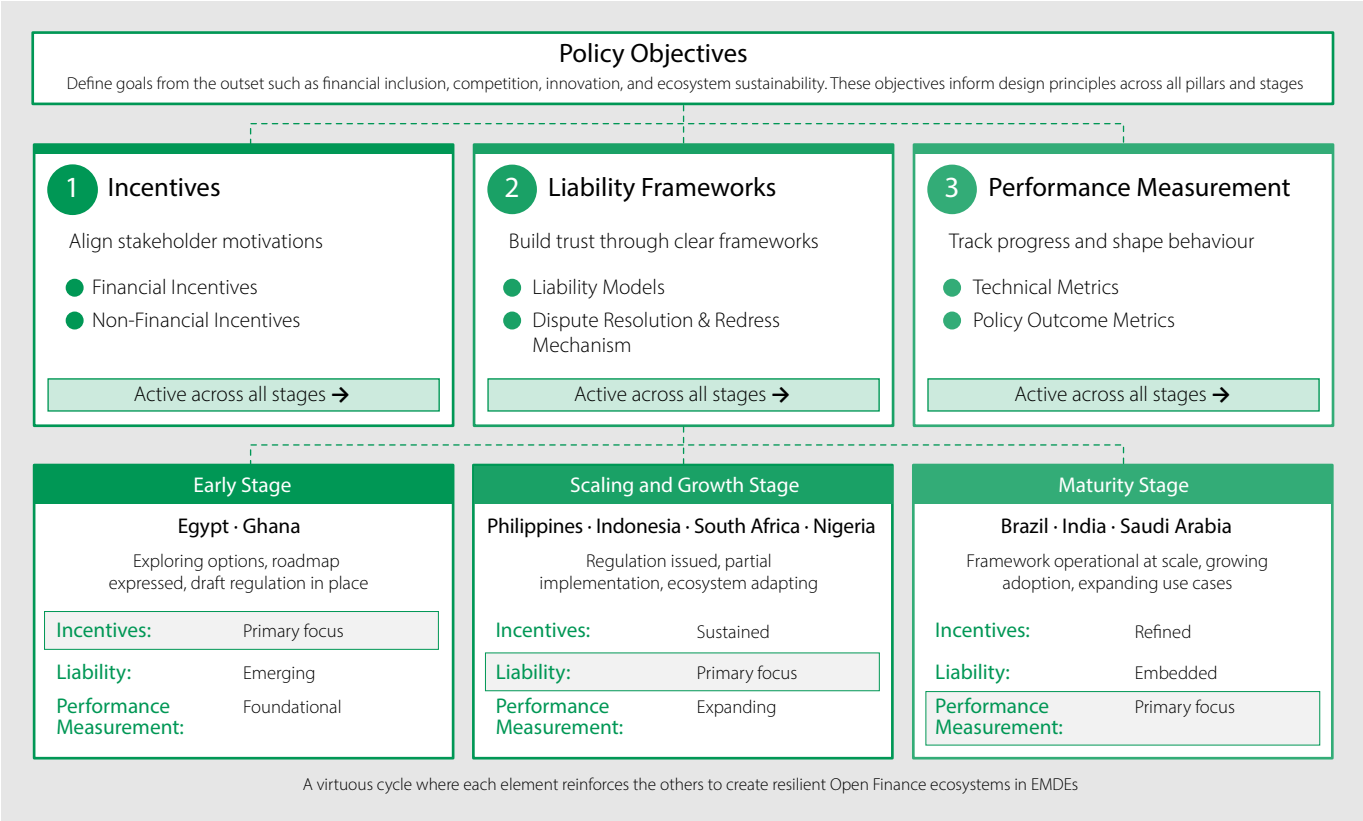
The main report organises the conditions that enable Open Finance ecosystems to take root and endure around three interconnected pillars.

1. **Incentives**: What can encourage data holders, data users, and customers to participate meaningfully in data sharing, beyond the floor set by any mandate?
2. **Liability**: How are accountability, consent, and redress are allocated across a multi-actor ecosystem that builds on existing legal architecture?
3. **Performance Measurement**: How can a regulator tell whether the resulting framework is delivering on the policy objectives that motivated it?

A key contribution of the report is setting out the interdependence of these pillars: a gap in one can be at least partially offset by another. Where internal dispute resolution timelines under the liability framework are slow or inconsistent, the regulator can draw on the performance measurement pillar to require publication of resolution-time data, as India has done through its Sahamati reporting. Public disclosure can create accountability pressure on participants to improve. In this way, a measurement intervention can compensate for a gap in the liability arrangements. This can allow regulators to sequence priorities and rebalance over time rather than resolve every question around incentives, liability and performance measurement at once, which is particularly relevant for authorities operating under institutional and resource constraints.

Four broad observations, grounded in the country analysis, run through the considerations that follow: mandates can set the floor for participation while incentives can raise the ceiling; liability frameworks tend to build on existing legal architecture rather than replace it; performance measurement must go beyond technical and adoption metrics to track policy objectives; and customers, too often the missing piece, belong at the centre of ecosystem design.

Figure 1: Three-Pillar Framework for Enabling Open Finance in EMDEs



Source: CCAF, Fii and BIS

Regulatory Considerations for Incentives in Open Finance

Incentives matter regardless of whether the model is regulation-led or market-driven. Whether an Open Finance ecosystem is built through mandate or market initiative, it may underperform if key actors do not perceive clear and sustainable value in participation. Where data holders comply only with the letter of the law, incumbents may provide the bare minimum, often resulting in brittle, low-latency APIs that may fail to support high-volume fintech traffic. Mandates may establish a baseline level of participation, but financial and non-financial incentives are often needed to foster deeper and more meaningful engagement.

Incentives should be calibrated to market structure rather than assumed to revolve around banks. Banks are not always the principal data holders. In many EMDE contexts, mobile network operators and their mobile money subsidiaries dominate payment activity and therefore control the transactional data that increasingly underpins credit decisioning and customer acquisition, as is the case in Kenya and Uganda. In such contexts, incumbent banks may perceive Open Finance more favourably than expected, not because competitive concerns disappear, but because access to mobile money data, often at lower cost than existing arrangements, can offer meaningful gains in credit risk assessment and customer reach. Regulators may, therefore, benefit from understanding the competitive environment and the distribution of dominant data holders within their ecosystem before designing incentives.

Explicit regulatory intervention in commercial models tends to generate evidence, while silence can produce opacity. Across the market-driven countries in the sample, commercial models are generally less specified in official frameworks, with several countries either remaining silent on pricing and compensation or leaving these matters largely to market participants. This may reflect a preference for flexibility during the earlier stages of development, but it can also create uncertainty and contribute to slower convergence towards interoperable and scalable practices. As an executive from a leading Egyptian bank observed, "In the absence of a mandate, every API call is a negotiation, which slows down the scaling of the entire ecosystem." Regulators seeking data on commercial arrangements may benefit from being at least somewhat explicit in their frameworks. Transparency requirements, defined free-access thresholds, or formal recognition of bilateral pricing structures can all generate at least some publicly available evidence on how commercial terms operate in practice.

Differing approaches need not be interpreted as indicators of ecosystem maturity or effectiveness. A market-driven commercial approach (where the regulator does not intervene) does not necessarily imply an underdeveloped commercial environment, nor does a regulation-led commercial approach guarantee well-governed pricing outcomes. Saudi Arabia operates one of the more technically advanced ecosystems in the sample, with an active pricing market despite the absence of formal regulatory commentary on commercial arrangements. Conversely, Brazil's regulation-led freemium model represents the most explicitly codified commercial structure in the sample, even though reimbursement mechanisms above the free threshold remain inactive in practice. Even within regulation-led environments, approaches to commercial design vary considerably and do not appear to follow directly from the broader governance structure. Commercial model design, therefore, appears to constitute a distinct policy decision from governance structure, one that regulators seem to be making, or deferring, independently.

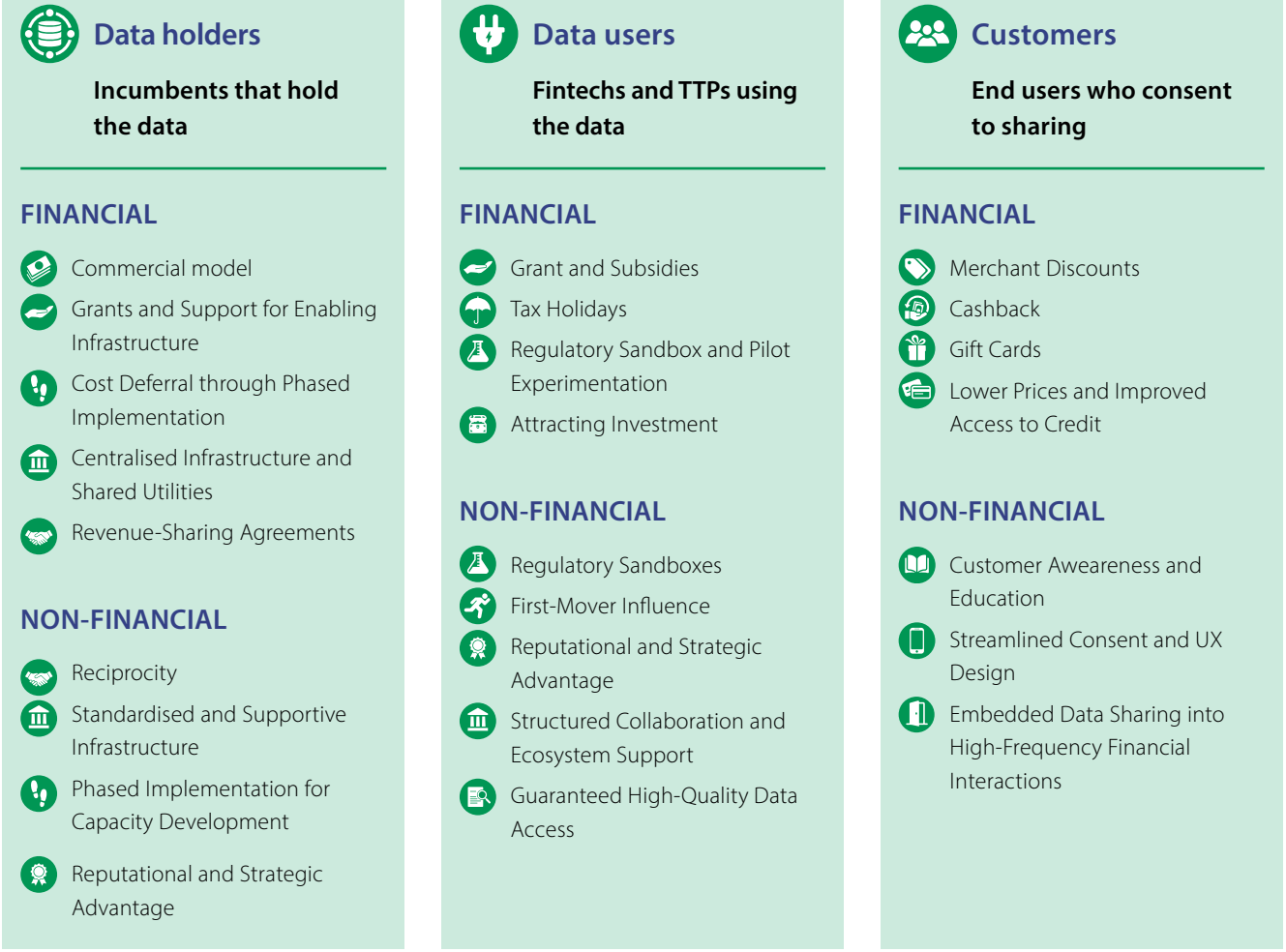
Commercial model design can benefit from flexibility and careful timing. Introducing pricing too early, particularly while alternative data access methods such as screen scraping remain available, can discourage data users from transitioning to Open Finance frameworks. During the scaling and growth stage, regulators may introduce requirements such as transparency, as in India, where agreed fees are published on the website, or specify that competition law is binding, as in the Philippines, where the central bank also engages in ongoing discussions with market participants to manage pricing outcomes without directly intervening in price-setting. Rather than introducing a full commercial model upfront, regulators could first build the underlying framework to signal future cost recovery and stable data-use rules without fixing prices too early. Brazil's case suggests that, even without immediate charging, an early formal framework can support predictability and ecosystem growth. Its main benefit lies in institutional certainty during scaling rather than monetisation. However, long delays between design and implementation may also create uncertainty about when pricing will actually begin. In mature stages, the case for allowing some degree of commercial charging may become more defensible. The competitive dynamics that made unrestricted pricing risky in the early stages may be partly addressed by years of data flows. However, models such as Saudi Arabia's, which do not prescribe charges, can still be defended, including approaches that allow customers to pay for value-added services built on their data.

A commercial model is one tool among many, and choosing not to implement one can be a legitimate policy decision. Regulators that are not yet ready to operationalise a commercial model, or that face market hesitation, need not view this as a barrier to progress. Instead, participation can be supported through grants, tax relief, sandbox access, reciprocity provisions, reputational mechanisms, phased implementation, and effective government arrangements, which can be deployed individually or in combination. Strong regulatory leadership and the inclusion of commercially relevant data types can also serve as important levers.

Reciprocity can help rebalance participation incentives, but it works best when its limitations are understood. Cross-sample experience suggests reciprocity can be a powerful non-monetary incentive, particularly for data holders that might otherwise perceive Open Finance as a one-sided obligation. The underlying principle is straightforward: give something, get something, but its practical application can be uneven. Data reciprocity, in which a data holder shares data and receives data in return, is constrained by the fact that not all entities hold equally valuable data. Payment Initiation Service Providers, for example, typically do not hold data of comparable depth or quality to exchange with data holders. Reciprocal flows also require customer consent at each stage, meaning that reciprocity cannot be assumed to operate automatically as a balancing mechanism. A second variant is government reciprocity, where the state shares government-held datasets such as tax filings to encourage meaningful participation rather than mere compliance. This approach is already in use in India and Singapore and is being considered in countries such as New Zealand and Thailand. Overall, reciprocity can be useful but may not work as a standalone incentive. Beyond reciprocity, regulators can also consider incentives such as grants and support, as well as infrastructural measures such as centralised APIs that can help lower technical costs.

Phased implementation, sandbox access, and guaranteed data quality can reduce uncertainty for participants. Other incentives include phased implementation for data holders, regulatory sandboxes and pilot experimentation for data users, and guaranteed access to high-quality data, which regulators can specify more clearly in their frameworks. By defining who can access which datasets, under what conditions, and to what minimum quality standards, regulators can reduce uncertainty and signal that participation need not leave data users exposed to arbitrary restrictions or unusable data. A more pertinent question for EMDE regulators may be: what combination of incentives, in what sequence, and for which actors?

Figure 2: The Incentive Toolkit for Open Finance Ecosystems



Source: CCAF, Fii and BIS

Customers are the missing piece and should be placed at the centre of ecosystem design. Evidence suggests that they do not need to understand the underlying infrastructure or the technical aspects of Open Finance. Rather, they may need to experience clear convenience and tangible value from data sharing in their financial lives. Brazil's integration of Open Finance into everyday Pix (Brazil's instant payment system) journeys illustrates what is possible when customer activation is treated as a first-order design priority. Within the Pix ecosystem, users may be prompted to share financial data in exchange for instant credit offers directly within the payment journey, linking data sharing to immediate and tangible customer value. Adoption can follow more naturally when data sharing is embedded in moments of genuine customer need rather than presented as a standalone consent exercise. By contrast, in India, data sharing under the Account Aggregator framework remains more operationally fragmented and disconnected from everyday payment experiences, which may constrain broader adoption. EMDE regulators may, therefore, consider investing in customer awareness, streamlined consent and UX standards, FAQs and illustrations on the lead regulator's website, and mechanisms that make the value of participation more tangible, since it is ultimately the customer's decision to share data that allows the ecosystem to function.

Pillar 1: **Incentives**

1 No mandate: participation cannot be compelled

Where regulators cannot or choose not to mandate participation, incentives may play a greater role in encouraging data sharing. Consented access to government-held datasets, such as tax filings, could be offered in return, alongside financial incentives such as grants and non-financial measures such as regulatory sandbox access.

SEEN IN: India (Goods and Services Tax Network) · Singapore (SGFinDex) · Exploring: Thailand, New Zealand

2 Mandate exists, but participation remains limited

Where a mandate exists but participation remains limited, regulators could consider complementing it with additional incentives. Financial incentives, such as tax relief or cost deferrals through phased implementation, could be paired with non-financial measures, including data-quality standards, access guarantees, and reciprocity.

SEEN IN: Brazil (compulsory for largest banks; reciprocity for voluntary entrants)

3 Banks are not always the principal data holders

The local context should be assessed and the scope designed accordingly, rather than defaulting to banks. Where mobile-money operators are the primary holders of transaction data, regulators could consider including them within the framework. In such cases, banks may be more supportive of data sharing, as it can provide access to alternative data for credit assessment and customer acquisition that would otherwise be costly or difficult to obtain.

SEEN IN: Kenya · Uganda (mobile-network-operator and mobile-money led markets)

4 Not ready for a commercial model

Where regulators are not ready to codify, implement, or choose not to adopt a commercial model, participation could instead be supported through other financial incentives, such as grants, tax relief, centralised infrastructure, and shared utilities. Regulators could also encourage or signal support for revenue-sharing arrangements that emerge organically within the ecosystem.

SEEN IN: Saudi Arabia (scaled without charging, sustained by other levers)

5 Early stage, screen scraping still common

At an early stage, where screen scraping (accessing data via customer log-ins) remains common, regulators could consider avoiding the codification of a commercial model too soon. Introducing pricing prematurely could leave screen scraping as the cheaper option, weakening incentives for participants to migrate to the regulated framework.

SEEN IN: New Zealand (Initially contemplated charging for data access before adopting a no-fee position)

6 Scaling or growing ecosystem

Rather than adopting a fully codified commercial model, regulators could consider lighter-touch interventions, such as transparency requirements. For example, data holders and intermediaries could be required to publicly disclose agreed fees on their websites, improving transparency without directly intervening in bilateral pricing arrangements. They could also consider codifying a commercial model in the framework without immediately operationalising it, signalling the potential for future cost recovery as the ecosystem matures.

SEEN IN: India (fees published) · Philippines (competition law binding; pricing under dialogue)

ACROSS EVERY SITUATION

Customers are often the overlooked element. Adoption tends to follow when data sharing is embedded in moments of genuine need (for example, credit offers via Brazil's Pix instant-payment system) rather than presented as a standalone consent exercise. Investment in consent design, public awareness and tangible value is therefore likely to matter.

The scenarios are illustrative rather than sequential, reflecting tendencies observed across nine EMDEs. Regulators may identify the configuration that most closely reflects their market and weigh the considerations it raises, adapting them to local context.

Regulatory Considerations for Liability in Open Finance

Open Finance inherits the existing legal architecture rather than creating liability from scratch. It draws on overlapping financial, data protection, and consumer protection regimes, while introducing multi-actor and data-intensive features that these frameworks may not always address neatly. These features can create accountability gaps, consent-related challenges, and dispute resolution issues that do not fit neatly within established regimes. Clear and predictable liability frameworks can, therefore, act as a meaningful incentive in their own right, reinforcing trust and complementing other incentives across the ecosystem.

It may be useful to distinguish between risks that are genuinely novel to Open Finance and those that represent intensified versions of existing risks in financial services. Multi-party data-sharing arrangements involving Third-Party Providers (TPPs) are among the most novel features of Open Finance and may require new rules and supporting infrastructure, given their potential to fragment responsibility across institutions with different regulatory statuses. By contrast, heightened risks such as security breaches and consent complexity may be addressed through the adaptation and extension of existing frameworks, including stronger consent requirements, clearer data protection obligations, and improved enforcement capacity.

The key question is often not whether rules exist, but which framework applies and which authority has jurisdiction. Open Finance breaches can span data, transaction, and operational domains that do not fit neatly within a single regulator's remit. Where the interactions between financial, data protection, and consumer protection frameworks are not clearly defined, governance gaps can emerge, particularly in EMDEs where data protection frameworks are newer, and the division of responsibility may not yet be settled. This points to the potential value of establishing cross-authority coordination mechanisms from the outset, rather than relying on a single dedicated regulator.

Tracing fault across interconnected systems can be difficult, and the tools commonly used each have limitations. Two approaches are common. The first is infrastructure-based, where audit trails, API logs, and incident reporting can attribute responsibility, though these tools are absent or incomplete in several of the EMDEs surveyed. The second is contractual, where indemnities and liability clauses allocate risk between data holders and data users. In practice, this can shift risk to smaller participants due to low bargaining power, which may discourage participation.

Regulators may find it useful to understand the four broad liability models when designing their approach. Single-party liability assigns responsibility ex-ante to a specific participant, often defaulting to incumbent banks, prioritising clarity and timely redress. Multiple-party liability distributes responsibility ex-ante across several actors, providing clarity on exposure but potentially introducing moral hazard. Fault-based liability assigns responsibility ex-post based on negligence, avoiding the penalisation of compliant actors but depending heavily on audit trails, digital signatures, and other evidentiary infrastructure. Hybrid liability combines elements of the above, reflecting the heterogeneous risk landscape of Open Finance.

Table 1: Comparative Overview of Liability Models and Incentive Implications in Open Finance

Liability Model	Definition	Strengths	Weaknesses	Implications for Incentives	Liability Model
Single-Party Liability	Responsibility assigned ex-ante to one specific participant, typically the data holder, with limited ability to transfer liability.	• Clear accountability • Enables timely consumer redress • Easy to enforce within regulatory perimeter	• May over-burden data holders • Misaligns incentives in multi-actor failures • May discourage API openness	Drives security investment but may reduce willingness to share data broadly	India Saudi Arabia Indonesia*
Multiple-Party Liability	Responsibility distributed ex-ante among several actors, proportionally to role or through shared responsibility arrangements.	• Reflects multi-actor reality • Pre-defined roles reduce uncertainty • Reduces individual burden	• Risk of moral hazard • Complex to administer • May deter participation if exposure feels unpredictable	Shared responsibility encourages participation but risks free-riding behaviour	Brazil
Fault-Based Liability	Responsibility arises ex-post only when negligence or breach of duty is established through dispute resolution mechanisms.	• Avoids penalising compliant actors • Aligns responsibility with actual behaviour • Flexible across incident types	• Investigation-intensive • Requires robust audit infrastructure • Can delay consumer redress	Encourages responsible behaviour but increases enforcement costs and redress timelines	Nigeria* Philippines*
Hybrid Liability	Combines single-party, multiple-party, and fault-based elements, assigning different liability rules to different risk types.	• Most flexible approach • Aligns incentives across actors • Reflects heterogeneous risk landscape	• Most complex to define • Requires clearly defined roles • Risk of gaps between liability categories	Balances incentives across actors but requires strong governance and dispute resolution infrastructure	Ghana*

Source: CCAF, Fii and BIS. *Egypt is not classified under any model as its framework remains at an early stage of development and the national data protection law is not binding on financial entities. Ghana has been classified based on proposed frameworks not yet in force. Nigeria's framework has been published but is not yet live. Philippines' classification reflects existing market practices rather than a formally enacted regulatory framework. South Africa has not yet taken a formal position in policy or recommendation papers. Indonesia's framework (SNAP) currently covers payment APIs only.

Fault-based models tend to depend on digital infrastructure that may not yet be available in all EMDEs. Fault-based regimes rely on the ability to attribute responsibility ex-post through evidence of conduct, which is more likely to be operationally tractable in countries with advanced digital systems and mature regulatory institutions. Where digital infrastructure is weaker, broadband penetration is limited, or digital divides are persistent, the effective operation of such mechanisms can be constrained. The relationship between governance approach and liability design is also not uniform, suggesting that liability choices may reflect broader policy preferences regarding customer certainty, operational feasibility, and the balance between accountability and innovation.

There can be a meaningful gap between liability as written and liability in practice. In India and Brazil, industry participants commonly described liability as being apportioned by functional role, suggesting a fault-based approach in practice. However, the underlying regulatory instruments diverge. India's non-transferable, domain-specific obligations produce a framework closer to a single-party model, while Brazil distributes obligations across multiple participants simultaneously, resembling a multiple-party model. Nigeria offers a further illustration at the level of market practice, where pre-regulatory arrangements have tended to concentrate operational liability on incumbent banks, producing outcomes resembling a single-party model.

The choice between ex-ante and ex-post approaches can depend on institutional capacity and policy priorities. There is no universally superior model, as the choice may depend on enforcement resources and priorities within a given country. Where customer redress is the primary objective, ex-ante mechanisms may be more effective in preventing harm. Where the focus is on encouraging participation and innovation, ex-post fault-based approaches may be more suitable, though they tend to be effective only where investigation and enforcement mechanisms are sufficiently resourced and capable of timely resolution.

Existing legal architecture may be necessary but not sufficient for effective accountability. The implementation gap observed across the sampled markets reflects the extent to which liability depends on conditions outside the existing legal architecture, including enforcement capacity, technical infrastructure, and the distribution of regulatory oversight. Supporting conditions may, therefore, also be required, including accreditation standards, audit infrastructure, dispute resolution capacity, technical guardrails, cross-regulatory governance arrangements, and mechanisms to ensure that all ecosystem participants have a working understanding of the rules that apply to them.

Consent can be understood as a regulatory tool in its own right. In Open Finance, consent becomes multi-layered, as a customer's authorisation to a TPP may extend across aggregators, analytics providers, and downstream service providers, each raising questions about authorisation, accountability, and revocability. Design dimensions include timing, purpose specificity, data granularity, and the validity period of consent, which itself involves a trade-off between minimising friction and protecting customer interests. Mechanisms that can support meaningful consent include dashboards that improve customer visibility and control, and governance-oriented approaches such as the consent manager model introduced under India's Digital Personal Data Protection (DPDP) Act. Accreditation mechanisms and data minimisation requirements may also be used to limit unnecessary data access. The practical effectiveness of consent in complex Open Finance ecosystems remains an area worth further research and policy attention.

Dispute resolution mechanisms tend to be built on top of existing systems rather than designed from scratch. Regulators have generally added requirements to existing dispute resolution systems. Ghana, for example, has proposed a three-layer model escalating from OpenDX to the central bank, while Nigeria's central bank has proposed retaining the existing architecture but tightening the timeline to 48 hours, compared to the current two-week limit applied in traditional banking contexts. This variation in procedural specificity can shape both customer willingness to engage with data sharing and institutional perceptions of risk. Effective and predictable redress can function as a substitute incentive, offering reassurance that harms will be addressed when failures occur.

Three practical design questions can help regulators structure their approach. First, whether Open Finance-specific liability clauses are needed. The evidence suggests that they generally are, though their scope can be targeted to address Open Finance-specific accountability gaps rather than replace existing law. Second, whether supplementary infrastructure is required. This may depend on what already exists, as audit trails and incident reporting can often be extended from existing financial regulation, while in their absence, such tools may need to be built as a prerequisite. Third, whether formal cross-authority coordination is needed. The answer is generally likely to be yes, with even a memorandum of understanding and defined escalation pathways being preferable to operating in silos.

Pillar 2: **Liability**

1 Customer redress is the priority

Regulators could consider an ex-ante model, in which liability is set in advance. Single-party liability assigns it to one designated actor, often the incumbent bank. This offers clarity and timely redress, but may not reflect a fair allocation of responsibility across participants. Multiple-party liability, which distributes responsibility across two or more actors in the data-sharing chain according to each party's role or degree of fault, allocates more equitably but can invite moral hazard.

SEEN IN: India (closer to single-party in instruments) · Brazil (multiple-party)

2 Participation and innovation are the priority

Regulators could consider a fault-based (ex-post) liability regime, under which responsibility is determined after the event, once an investigation has established fault. Such a regime spares compliant actors but is workable only where investigative and enforcement capacity is well-resourced, and dispute resolution is timely.

SEEN IN: UAE, Australia

3 Weak digital infrastructure or audit trails

Regulators could avoid fault-based regimes at this stage, since the ex-post attribution of fault relies on logs, digital signatures and audit trails that may not yet be in place. A single-party model, or the prior development of the requisite evidentiary infrastructure, may be preferable.

NOTE: Several sampled EMDEs lack complete audit-trail infrastructure

4 Multiple regulators share the remit

Where the mandates of authorities such as financial, data-protection, and consumer authorities overlap, regulators could establish cross-authority coordination from the outset. Even a memorandum of understanding (MoU) setting out clear escalation pathways may be preferable to operating in institutional silos.

NOTE: Common where data-protection regimes are newer and remits unsettled

5 Establishing a dispute-resolution route

Where such mechanisms do not adequately address Open-Finance-specific risks, regulators could draw on a range of options, for instance, tightening internal timelines, introducing an additional escalation tier, monitoring escalation rates or maintaining grievance dashboards.

SEEN IN: Ghana (tiered escalation to the central bank) · Nigeria (48-hour resolution timeline)

6 Consent is fragmenting across many parties

Regulators could position consent as a regulatory instrument rather than a procedural formality, deploying mechanisms such as consent dashboards, consent managers, participant accreditation and data minimisation requirements to ensure that each authorization remains visible to the customer, auditable, and readily revocable.

SEEN IN: India (consent-manager model under data-protection law)

THREE QUESTIONS TO STRUCTURE THE APPROACH

(1) *Are Open Finance-specific liability clauses needed?*
(2) *Is supplementary infrastructure, such as audit trails and incident reporting, required?*
(3) *Is formal cross-authority coordination needed?*

The scenarios are illustrative rather than sequential, reflecting tendencies observed across nine EMDEs. Regulators may identify the configuration that most closely reflects their market and weigh the considerations it raises, adapting them to local context.

Regulatory Considerations for Performance Measurement in Open Finance

Designing measurement frameworks for Open Finance is analytically demanding and warrants a similar level of rigour to that applied in more established regulatory domains. As a data-sharing infrastructure capable of supporting diverse use cases across multiple financial markets, the effects of Open Finance are often indirect, distributed across multiple actors, and highly context-specific. Measurement also depends on data generated by multiple parties within the ecosystem, including banks, financial institutions, TPPs, and intermediaries, many of whom may be reluctant to disclose commercially sensitive metrics publicly. Isolating its impact from broader market developments, therefore, requires moving beyond technical and compliance-based metrics.

What constitutes "success" in Open Finance can vary across stakeholders, and performance measurement design choices should reflect this. Interviews conducted for the report revealed that regulatory bodies, data holders, incumbents, data users, intermediaries, and customer representatives frequently prioritise different, and sometimes competing, dimensions of success. Policy outcomes such as data protection and financial inclusion were discussed primarily by regulators, while ecosystem outcomes such as commercial viability showed the highest degree of overlap across data holders, TPPs, and intermediaries. Customer outcomes appeared to be less consistently reflected in the metrics currently tracked. This diversity is not a measurement problem to be resolved by a single shared metric, but a reflection of the multidimensional nature of Open Finance. Metrics should, therefore, be anchored to the policy objectives the framework was designed to achieve while remaining meaningful to the full range of ecosystem participants.

Five design principles can help regulators build credible performance measurement frameworks, drawing on established regulatory impact assessment practices. Attribution asks whether the metric can reasonably isolate the effects of the Open Finance intervention from broader market dynamics, which often calls for pre- and post-intervention baselines or comparator groups. Validity asks whether the indicator genuinely measures what it purports to capture and is robust against manipulation, which may benefit from standardised definitions and independently auditable data. Outcome orientation asks whether the metric captures meaningful outcomes for customers, firms, and markets rather than merely operational activity or compliance. Proportionality asks whether the measurement burden is proportionate to the policy value of the indicator, recognising that excessive reporting can deter smaller participants. Granularity asks whether the framework captures distributional variation and unintended effects across segments such as gender, income, geography, and Micro, Small and Medium Enterprise (MSME) participation.

Technical metrics are useful but may provide an incomplete picture of ecosystem performance, particularly when used in isolation. Technical indicators are often the earliest available signal that infrastructure is live and stable, and interviews conducted for the report identified API availability and uptime, and transaction volume, as the most frequently cited. However, headline volume metrics can be misleading without contextual normalisation, and API call counts have been described by some interviewees as low-level operational metrics. Assessed against the five design principles, technical metrics tend to satisfy proportionality by construction, since they are generated as a by-product of the infrastructure, but most fall short on attribution and outcome orientation. As ecosystems scale, regulators may benefit from triangulating technical indicators with outcome-based measures such as active usage rates, customer benefit, and service quality to extract richer insight from the same underlying data.

Table 2: Upgrading Technical Metrics using the Design Principles

Traditional Technical Metric	Key Limitation	Upgraded Metric	Data Requirements	Principles Addressed
API Latency (Response Time)	Measures average speed against thresholds but does not reveal whether delays disproportionately affect smaller TPPs or high-impact customer journeys.	**Journey-weighted Latency**, disaggregated by use case and participant type. Disaggregation by participant type can show whether higher latency is due to technical challenges or barriers to participation.	Requires disaggregated API logs by use case and participant type. May require upgrades to existing API infrastructure and standardised reporting templates agreed across the ecosystem	**Outcome Orientation**: ties latency to actual journey completion. **Granularity**: surfaces uneven incidence across participants and use cases. **Attribution (partial)**: isolates participant-type effects from background noise.
Participant Onboarding Count	Counts entities that have completed technical onboarding but does not distinguish actively operating participants from dormant registrations.	**Active Participation by Use Case**: share of registered participants generating live services within a defined period.	Requires participant registries that distinguish active from dormant status, and a standardised definition of what constitutes a live service agreed by the regulator	**Outcome Orientation**: measures live participation, not registration. **Validity**: regulator-defined live-service threshold reduces gaming. **Granularity**: disaggregates by use case and segment.
System Availability (Uptime %)	Aggregate uptime masks short but critical outages during peak periods and does not reveal uneven impact across participants.	**Use-case Critical Availability**: uptime during peak or high-impact periods, disaggregated by participant type and reported publicly.	Requires time-stamped uptime logs disaggregated by participant, with peak period definitions agreed across the ecosystem.	**Outcome Orientation**: prioritises moments that matter to customers. **Granularity**: distinguishes participant-level exposure to outages. **Validity**: peak-period definitions reduce reporting discretion.
Consent Volumes	Raw consent counts do not reveal whether consents are informed, whether users understand what they have authorised, or whether consent revocation is accessible.	**Effective Consent Rate**: ratio of consents granted to data-sharing journeys completed, combined with revocation ease score (eg, steps required to revoke).	Requires linking system logs to track journey completion rates and revocation steps. Revocation ease score can be derived from technical audit of the consent flow like number of steps, screens, and time required to revoke.	**Outcome Orientation**: captures meaningful consent, not volume. **Validity**: revocation ease score is independently auditable. **Granularity**: disaggregates by journey type and outcome.

Source: CCAF, Fii and BIS. The upgraded metrics strengthen outcome orientation by prioritising measurable effects over procedural activity; however, this comes at the cost of proportionality, as the additional disaggregation, tracking, and audit requirements increase data collection and reporting burdens relative to the original indicators.

Mapping technical metrics across the data-sharing lifecycle can help regulators choose the indicators that best fit their policy objectives. Data sharing follows a broadly common sequence, from consent initiation and verification through API data request and delivery to consent revocation or expiry, and each stage generates its own measurable indicators. Metrics at the consent and authorisation stages can offer insight into user trust and the clarity of consent frameworks, midstream indicators can assess operational reliability, and downstream indicators can reveal whether technical performance translates into usable outcomes. Not every metric at every stage needs to be tracked by every regulator. Consistent with the proportionality principle, regulators may prioritise indicators most directly connected to their stated policy objectives, and frameworks can be designed to evolve as ecosystems expand towards broader smart data or cross-sector data-sharing regimes.

Policy outcome metrics can help assess whether Open Finance is advancing the public objectives that motivated its introduction. Policy outcome metrics are typically outcome-oriented, assessing impact on market structure, user welfare, and distributional equity rather than system performance, and they often require data from sources beyond the API layer, including credit bureaus, household surveys, complaint registries, and market conduct data. A system that is fast, reliable, and widely used may still be falling short if it primarily benefits already-served customers, leaves incumbent pricing unchanged, or generates products that deepen debt rather than build financial resilience. Across competition, innovation, consumer protection, and financial inclusion, the most commonly tracked indicators often capture intermediate outcomes such as participant counts, new use cases, complaints, and accounts onboarded, but seldom isolate the effects of Open Finance or reach the ultimate policy objectives without an explicit comparator design embedded from the outset.

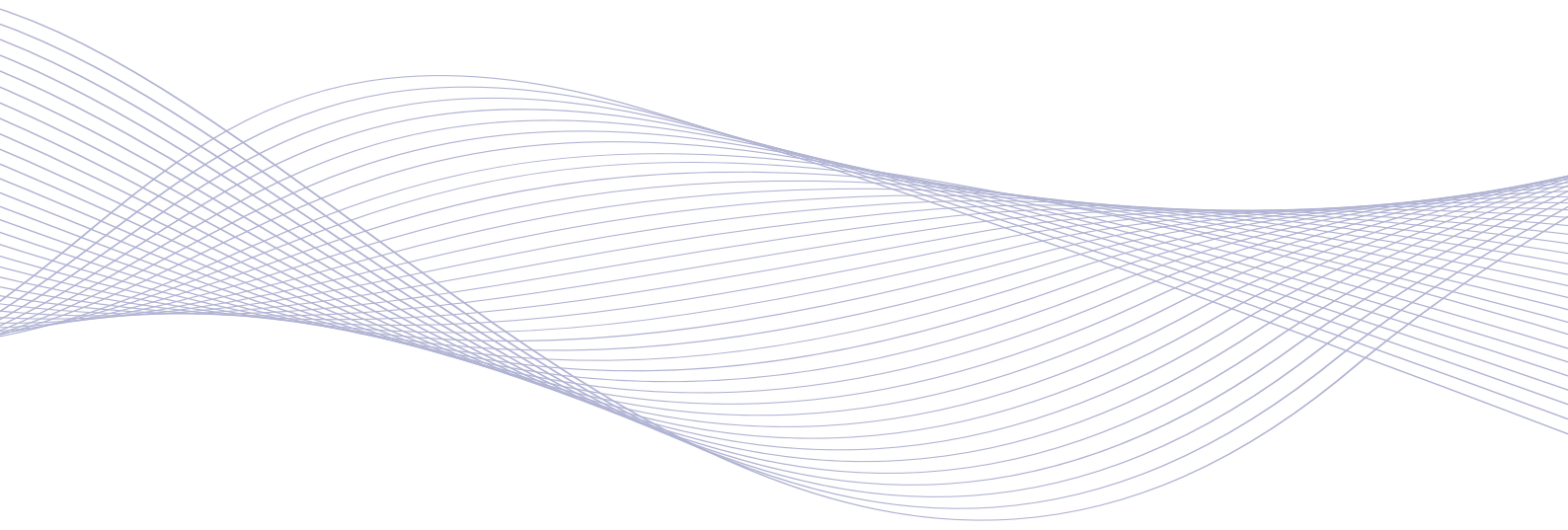
In principle, policy outcome metrics should play a central role in Open Finance monitoring frameworks from the outset, even though many intended outcomes may only become observable once ecosystems reach sufficient scale and maturity. The key implication is not that countries must already possess mature outcome datasets, but that they may benefit from establishing early the conceptual, institutional, and data foundations necessary to support future impact assessment. Although it can be challenging to isolate the specific contribution of Open Finance from other market and regulatory developments, a range of methods of analysis (such as qualitative and quantitative descriptive, difference-in-differences designs, and regression analysis) can help isolate its contribution to measure competition, inclusion, innovation, and customer outcomes. During early implementation stages, technical metrics may also serve as proxy indicators for broader policy objectives. For example, the number of successful data-sharing consents may provide an indication of user engagement, while the number of active TPPs may offer an early signal of market participation and competitive activity. However, these proxies should not be treated as substitutes for dedicated policy outcome metrics designed to assess whether Open Finance is delivering its intended outcomes.

Competition metrics may benefit from capturing both market structure and incumbent behaviour, since each can move independently of the other. Headcounts of participants or new entrants can mask qualitative shifts in market composition, and an Active Diversity Ratio that measures the share of API volume generated by non-bank actors can offer a more meaningful signal. Incumbent pricing responses are also relevant, as evidence from Brazil suggests that even a relatively small non-bank market share can trigger a price response from incumbents. Central bank credit registries already maintained in countries such as Brazil, India, and Nigeria contain the loan-level information needed to detect such responses. Indicators such as the share of transactions originated by non-banks and multi-homing behaviour can further help distinguish passive data access from active market disruption.

Financial inclusion measurement can benefit from indicators that distinguish genuine access expansion from deeper engagement with already-served customers. Aggregate adoption metrics cannot reliably distinguish between inclusion and intensification. A new-to-credit ratio, capturing the share of Open Finance-enabled credit reaching borrowers with no prior formal credit history, can offer a more meaningful signal than total disbursement volume alone, and tracking the product mix over time can reveal whether secured and productive-sector lending is scaling. MSME digital penetration, rural API availability, and response times disaggregated by geography, and sex-disaggregated data on participation, approval, and usage patterns can together help ensure that Open Finance narrows rather than widens existing gaps.

Consumer protection and empowerment measurement can extend beyond infrastructure health to capture whether consent is meaningful, revocable, and supported by credible redress. A structured grievance-monitoring framework that tracks where in the consent journey complaints arise, as illustrated by India's Sahamati grievance dashboard, can help regulators target supervisory attention. Such dashboards need not be public to be useful, as their value lies in visibility rather than disclosure. Consent journey indicators such as abandonment rates by stage, as used in Australia's Consumer Data Right framework, can highlight where consumers systematically disengage, while the click-to-consent ratio can flag friction or, conversely, over-simplified flows that may undermine informed consent. Revocation friction and revocation latency can further help assess whether user autonomy is genuinely supported once consent is withdrawn.

Whether to publish metrics can be approached through a proportional, tiered framework rather than a binary choice. Interview perspectives are notably divided, with some stakeholders arguing that public reporting fosters trust, accountability, and market development, and others emphasising risks of misinterpretation, commercial sensitivity, and metric gaming, particularly in early-stage ecosystems. Under such an approach, regulators could publish high-level, system-wide indicators—such as adoption numbers, API uptime, complaints resolution timelines, and switching metrics—while keeping commercially sensitive and micro-level data private. The scope for public disclosure could then expand as ecosystems mature.



Pillar 3: **Performance Measurement**

1 Is the infrastructure working?

Regulators can assess the functionality and stability of the infrastructure through technical indicators such as API uptime, transaction volumes, successful consent requests, and the number of active participants. When disaggregated by characteristics such as geography or gender, these metrics can also provide insight into whether adoption and access are being achieved across different consumer segments.

NOTE: Most ecosystems begin here; normalise headline volumes for context

2 Is it being adopted and used?

Technical metrics can demonstrate that the infrastructure is functioning as intended, but they do not, on their own, indicate whether broader policy objectives are being achieved or whether consumers are benefiting. Regulators should therefore identify and incorporate policy outcome metrics alongside technical indicators. These metrics will vary according to the objectives of the framework. Establishing clarity on the desired outcomes from the outset is important, even if impact assessment occurs later, as the necessary data must be collected from the beginning to enable robust evaluation over time.

NOTE: Most relevant once the infrastructure is stable and a few years of data exist

3 Is competition increasing?

Regulators should look beyond participant numbers when assessing market development. Indicators such as the share of API transaction volume generated by non-incumbent participants can provide insight into whether activity is becoming more broadly distributed across the ecosystem. Similarly, changes in incumbent pricing or lending rates may offer evidence of emerging competitive pressures and increased market contestability.

SEEN IN: Brazil (fintech competition tracked a cumulative fall in incumbent lending rates)

4 Is it driving innovation?

Regulators could assess whether the framework is generating genuinely new value in the market. Relevant indicators may include the proportion of new products addressing previously underserved segments or use cases that were not previously commercially viable, the time taken for new products to reach market, and the share of sandbox participants that successfully progress to live deployment.

SEEN IN: Saudi Arabia (SAMA sandbox: 50 firms processed, 15 graduated, ~30% conversion)

5 Is it widening financial inclusion?

Regulators should distinguish between expanded access for previously excluded groups and increased usage among already served consumers. Relevant indicators may include the share of borrowers accessing formal credit for the first time, uptake among MSMEs and rural populations, and participation rates disaggregated by gender and other relevant demographic characteristics.

SEEN IN: India (Sahamati data shows a significant share of FY25 disbursements reached new-to-credit or thin-file borrowers)

6 Are consumers protected and empowered?

Regulators could evaluate whether the framework is delivering meaningful consumer protection and empowerment. Indicators may include the composition of complaints across different stages of the consent journey, rates of consent abandonment, evidence that consent is obtained without undue influence or manipulation, and the accessibility of mechanisms for reviewing, managing, and revoking data-sharing permissions.

SEEN IN: India (Account Aggregator grievance dashboard) · Australia (Consumer Data Right abandonment by stage)

7 Should the metrics be published?

Regulators could carefully consider the scope and timing of public disclosure. In the early stages of implementation, low headline figures may risk discouraging participation or undermining confidence in the framework. As the ecosystem matures, greater transparency may become appropriate. A tiered approach could therefore be adopted, whereby system-level indicators are published while commercially sensitive metrics remain confidential.

NOTE: Brazil's dual-dashboard approach (framing Open Finance against four explicit policy goals while keeping a separate technical dashboard)

The scenarios are illustrative rather than sequential, reflecting tendencies observed across nine EMDEs. Regulators may identify the configuration that most closely reflects their market and weigh the considerations it raises, adapting them to local context.

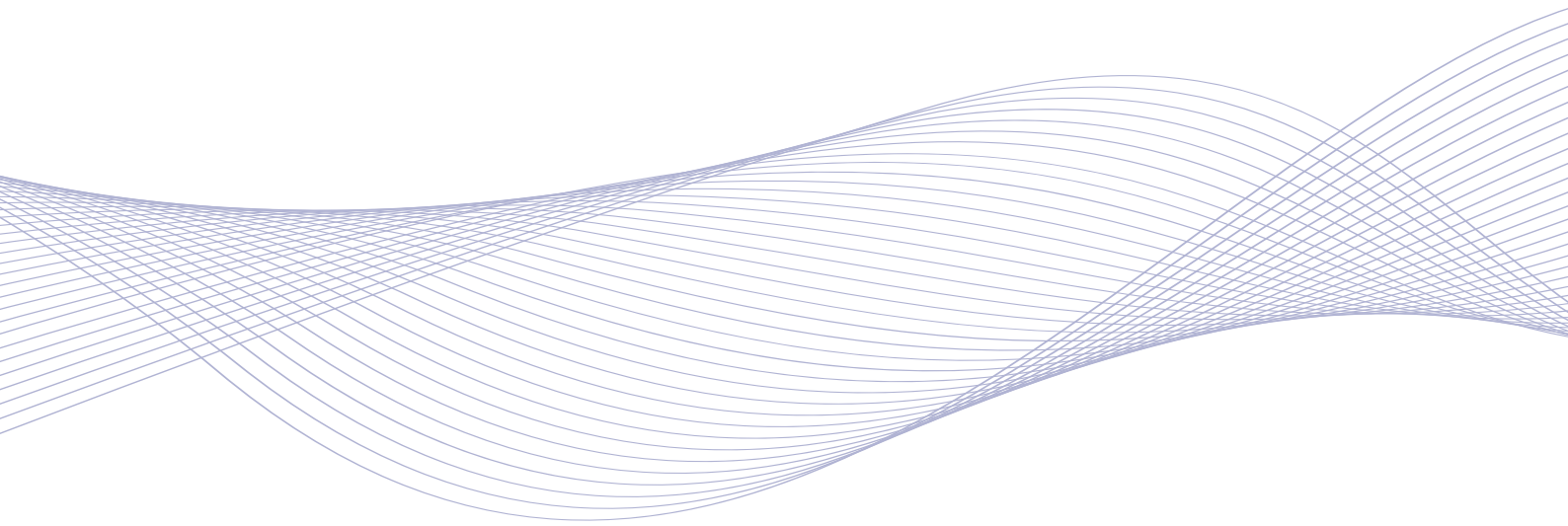
Three-Pillar Interaction

Taken together, the three pillars are best understood not as a set of independent requirements, but as a system of interconnected choices. Incentive structures shape liability design, liability arrangements in turn influence incentives, and performance metrics respond to both. The report's synthesis draws out how this plays out in practice.

On incentives, mandates alone are unlikely to deliver meaningful participation, and a commercial model, while useful, is one tool among many rather than a prerequisite for progress. Governance structure and commercial model design appear to be largely independent decisions. Reciprocity can help rebalance incentives where its limitations are understood. Incentive design should reflect local market structure rather than default to bank-centric assumptions, and customers function as the activating layer on which the rest depends.

On liability, Open Finance does not create accountability from scratch but builds on existing financial, data protection, and consumer protection regimes, while introducing genuinely novel multi-party features. No single liability model emerges as universally superior; single-party, multiple-party, fault-based, and hybrid approaches each offer different trade-offs that may depend on institutional capacity, digital infrastructure, and policy priorities. Because Open Finance often spans multiple regulatory remits, effective cross-regulatory coordination is essential.

On performance measurement, what counts as success varies across stakeholders, and customer outcomes appear less consistently tracked than ecosystem or policy outcomes. Five design principles (attribution, validity, outcome orientation, proportionality, and granularity) can anchor credible frameworks. Technical metrics offer the earliest signal but are incomplete on their own, and policy outcome metrics covering competition, innovation, consumer protection, and financial inclusion offer more meaningful insight where they move beyond aggregate counts.



Illustrative Scenario: Designing an Open Finance Framework

A mid-sized EMDE has a concentrated banking sector, a fast-growing set of fintechs and payment providers, and high mobile penetration but uneven account usage. Its central bank decides to move on Open Finance and convenes a small team to design the approach.

The team starts not with instruments but with objectives. It asks what it wants Open Finance to achieve and sets these out plainly: stronger competition in a concentrated market, room for innovation among smaller providers, and broader, more active account usage, all within its existing consumer protection commitments. It also asks, at this early stage, how it would know whether any of this is working, sketching the kinds of outcomes it would want to see and the signals it would watch for. These are provisional, and the team expects to refine them, but fixing the destination first gives the later design choices a clear target.

With those objectives in view, the team turns to incentives. It concludes early that a mandate on the largest banks would secure data availability on paper but is unlikely, on its own, to produce active participation or compelling use cases. Rather than reach immediately for a prescribed commercial model, it treats pricing as a separate question to settle later, and focuses first on who needs to be drawn in. Because the market is bank-concentrated but the most promising use cases sit with smaller providers, the team resists a purely bank-centric design and builds in reciprocity so that data users that also hold data enter the system as contributors. Throughout, it keeps customer demand in view as the layer that activates the rest: without a reason for customers to share, the architecture stays idle.

That incentive design then shapes the liability question. Because the model deliberately pulls in participants of differing size and sophistication, the team recognises that a single-party model concentrating responsibility on data holders would deter exactly the smaller players it wants to attract. At the same time, taking stock of its own enforcement capacity and the still-maturing state of its audit-trail and digital-signature infrastructure, it judges that a fault-based regime, which depends on reliable ex-post attribution of fault, would not yet operate dependably. It therefore settles on a multi-party approach that distributes responsibility across actors in advance, sitting on top of existing data protection and consumer protection law, as a better fit for its priorities than either concentrating liability on data holders or importing a fault-based model wholesale from a more mature jurisdiction. Because responsibility now runs across banking, payments, and data protection remits, it establishes a standing coordination mechanism with the relevant authorities rather than assuming its own mandate covers the whole chain.

It then returns to the measurement question it raised at the outset, deepening the early sketch into concrete metrics designed to test whether the earlier choices are working rather than to count activity for its own sake. It tracks technical metrics such as API availability as an early signal, but pairs them from the outset with customer-outcome measures, which it knows tend to be neglected, and with policy-outcome measures tied back to its original objectives across competition, innovation, consumer protection, and inclusion. When early data shows high API uptime but thin customer take-up, the team reads this as a signal that its incentive design, not its infrastructure, needs revisiting, and returns to the reciprocity and customer-demand questions. Set against the competition and account-usage goals it began with, the early picture is mixed, and it is that comparison, rather than the raw activity counts, that tells the team where to rebalance next. Worked this way, the three pillars form a feedback loop rather than a sequence, and the loop closes where it started, on the framework's underlying purpose.

Reflection Exercise for Regulators

Whether you are designing a new framework or reviewing an existing one, use the questions below to test whether the choices made across the three pillars are internally consistent and aligned with your policy objectives. Work through the pillars in sequence, then revisit them in reverse order to identify dependencies, trade-offs, and potential points of adjustment.

- **Incentives**: What is your market structure, and who most needs to be drawn in? Would a mandate alone produce participation, or does the activating layer of consumer demand need separate attention? Where might reciprocity help?
- **Liability**: Given the participants your incentive design is trying to attract, which model would support that aim and which would undermine it? What does your institutional capacity realistically allow?
- **Performance Measurement**: Which metrics would tell you whether the choices above are working, not just that activity is occurring? Are customer outcomes as well covered as ecosystem and policy outcomes?
- **Feedback Loop**: If a metric in Pillar 3 disappoints, which earlier choice does it point back to? Trace at least one such link.

Finally, ask whether the answers above would lead you to make the same design choices today. If not, what would you change, and why?

Closing Note

The decision to adopt Open Finance is not straightforward, and policymakers in EMDEs may wish to assess carefully whether implementation aligns with national priorities and capacity. For those who proceed, this reference is deliberately condensed, and the main report provides the depth, analysis, typologies, and evidence behind it. Where a takeaway raises a question relevant to a specific country, readers are encouraged to refer to the corresponding chapter of the report for additional insights. The evolving landscape, including the rise of agentic AI systems capable of initiating transactions on a customer's behalf, suggests that these design choices will warrant periodic reassessment rather than one-off resolution.

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