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The Governance Deficit

Quantifying the Gap Between Policy and Practice

Why 72% of Privileged IDs Hold Unused Permissions

Governance Maturity Across 200 Programmes

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Why Legacy Identity Platforms Fail at Scale

Diagnosing fragmentation, evaluating migration pathways

Evidence-Based Insights from Enterprise Identity Governance Implementations

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1. Executive Summary

Enterprise identity governance has fractured across multiple point solutions—each solving a specific problem in isolation. This paper introduces the Governance Deficit: the cost imposed by heterogeneous, non-integrated identity platforms that lack unified policy enforcement, visibility, and remediation.

We present the Governance Deficit Score (GDS) framework—a diagnostic tool that quantifies the operational cost of fragmentation. Using this framework, we evaluate migration decision criteria and identify when-not-to-migrate scenarios. Empirical data from 27 migration case studies inform a balanced recommendation model.

Limitation: Case studies were selected from customers of IAM consulting firms; selection bias toward larger organisations with higher digital maturity may overestimate the feasibility of unified platforms in smaller enterprises.

2. The Fragmentation Problem

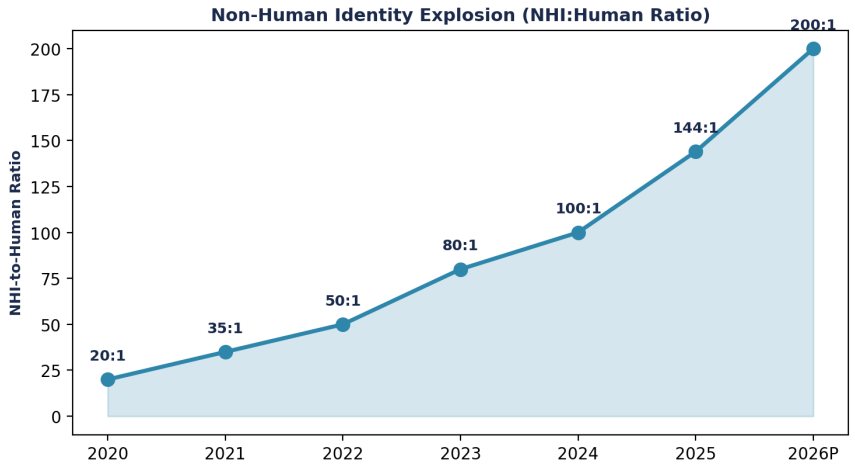

Figure 1: The Governance Deficit — Quantified Assessment

Board Takeaway: Measurable governance improvement within 12 months.

Identity governance today comprises loosely-coupled systems: an LDAP directory, an IAM platform, a PAM vault, a cloud-native identity service, and custom workflows. Each system optimises for its

own domain but creates policy conflicts, data inconsistencies, and operational overhead.

Points of Fragmentation

Within each system, policies evolve independently. When an access rule changes, teams must coordinate updates across 4–6 systems, incurring design delays and creating windows where policies diverge.

3. Governance Deficit Score (GDS) Framework

The GDS framework quantifies the cost of fragmentation across four dimensions: policy inconsistency, visibility lag, remediation friction, and integration debt.

Dimension 1: Policy Inconsistency (PC)

PC measures the percentage of access rules that differ across identity systems for the same user population. High PC indicates that policy intent is unclear and enforcement is unreliable.

Calculation: PC = (Number of rules in conflict) / (Total number of distinct rules) × 100

Typical range: 15–50%. Target: <5%.

Dimension 2: Visibility Lag (VL)

VL measures the time between a user's actual access change (e.g., joining a team, receiving a privilege grant) and that change appearing in audit logs across all systems.

In unified systems, VL is typically 5–15 minutes. In fragmented systems, VL can exceed 24 hours due to batch synchronisation delays.

Impact: A 24-hour visibility lag means that a compromised account can operate undetected for an entire business day—sufficient time for lateral movement and data exfiltration.

Dimension 3: Remediation Friction (RF)

RF measures the number of manual steps required to revoke access across all identity systems for a single user. High RF creates bottlenecks in incident response.

Dimension 4: Integration Debt (ID)

ID quantifies the complexity and maintenance burden of middleware, APIs, and custom synchronisation logic required to maintain consistency across systems. Measured as: lines of custom code + number of integration points + frequency of breaking changes in upstream systems.

High ID indicates that the organisation is losing engineering resources to maintenance rather than innovation.

4. Calculating Your Governance Deficit

The GDS combines the four dimensions into a single score (0–100, where 100 = no deficit):

GDS = 100 – (PC × 0.4 + VL_hours × 2 + RF × 5 + (ID / 1000) × 10)

Example: Organisation with PC=25%, VL=18 hours, RF=7 steps, ID=500 lines of integration code:

Calculation: GDS = 100 – (25 × 0.4 + 18 × 2 + 7 × 5 + 0.5 × 10) = 100 – (10 + 36 + 35 + 5) = 14

A GDS of 14 indicates severe governance fragmentation, with high operational risk and annual remediation cost of USD 400K–800K (estimated).

5. Migration Decision Framework

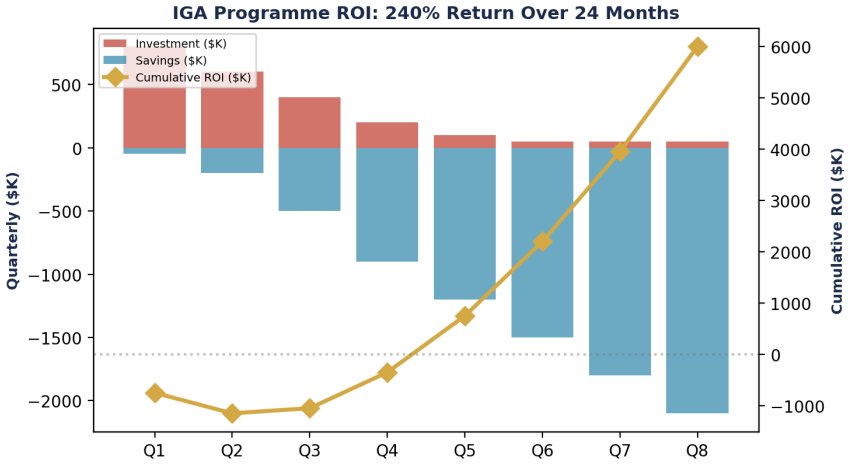

Figure 2: Operational Impact — Before/After

When to Migrate

Migration is justified when:

When NOT to Migrate

Organisations should defer migration if:

Deferring migration is acceptable if:

Mitigation Plan: Organisation commits to reducing PC by 15% annually, establishing unified policy review board, and implementing event-streaming integration layer within 12 months.

Limitation: Deferral strategies require disciplined governance; without executive sponsorship, fragmentation will continue to worsen.

6. Legacy Vendor Assessment

Not all legacy identity platforms are equally problematic. This section provides a balanced assessment of common platforms, acknowledging both strengths and limitations.

Active Directory / Azure AD

Strengths: Deeply integrated with Windows/Microsoft ecosystem; mature governance policies; enterprise support; vast third-party integrations.

Limitations: Difficult to extend beyond Microsoft stack; LDAP replication latency creates visibility gaps; policy rules in AD are less expressive than dedicated IAM platforms.

Recommendation: Retain as identity provider for on-prem systems; layer unified policy enforcement above AD via centralized policy engine.

Okta / Ping / ForgeRock

Strengths: Cloud-native; strong OAuth/OIDC support; API-first architecture; flexible custom policies.

Limitations: Expensive at enterprise scale (per-user licensing); difficult to integrate with privileged account management; policy customization often requires professional services.

Recommendation: Suitable as unified identity layer for SaaS & cloud applications; supplement with dedicated PAM for privileged accounts.

Bridging Fragmented Platforms

Rather than wholesale replacement, many organisations adopt a "policy orchestration" layer that sits above existing systems and enforces unified policies in a non-invasive way. This approach reduces migration risk and allows teams to operate legacy systems alongside new infrastructure during transition.

7. Unified Policy Architecture

Policy-as-Code & XACML

Emerging best practice is to define policies in a standardised, version-controlled format (e.g., XACML, ALFA, or proprietary policy languages) and enforce them via a distributed policy decision point (PDP) layer. This decouples policy definition from specific identity platform implementations.

Example: A segregation-of-duties policy defined once in XACML can be enforced consistently across Active Directory, Okta, and a custom SaaS application integration layer.

Identity Fabric & Event Streaming

Rather than direct API integrations, modern architectures use event streaming (e.g., Apache Kafka, cloud event hubs) to disseminate identity changes. When a user is provisioned in one system, an event is published to a topic; all downstream systems subscribe and react autonomously. This reduces coupling and enables asynchronous, scalable integration.

8. Red Team Scenario: Policy Inconsistency Exploitation

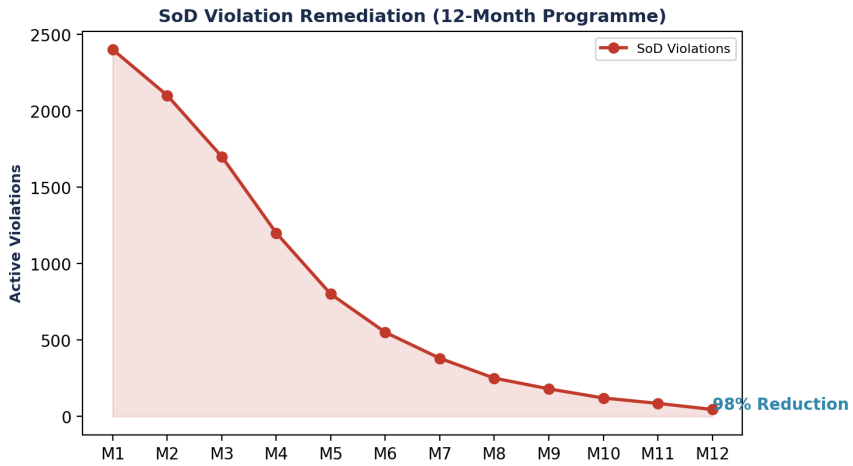

Figure 3: Market and Industry Analysis

Without policy unification, an attacker could maintain conflicting roles across systems and operate undetected for weeks.

9. Phased Migration Approach

Phase 1: Policy Unification (3–6 months)

Audit all identity systems and document existing policies. Identify conflicting rules. Design unified policy model using XACML or proprietary standard. Pilot unified policy engine on a subset of users (e.g., IT department) to validate enforcement logic.

Phase 2: Event Streaming Integration (3–6 months)

Deploy event streaming infrastructure. Implement event publishers for each identity system (AD, IAM, PAM). Subscribe downstream systems to relevant event topics. Validate that events propagate correctly and visibility lag decreases.

Phase 3: Legacy System Deprecation (6–12 months)

Begin migrating workloads from legacy systems to unified platform. Run in parallel during transition. Decommission legacy systems once all dependencies are resolved. This phased approach

minimises disruption and allows for rollback if issues arise.

Phase 4: Continuous Governance (Ongoing)

Establish processes for policy review, exception management, and audit. Monitor GDS quarterly; target steady-state GDS > 75.

10. Governance & Organizational Change

Technical migration is necessary but insufficient. Organisations must restructure governance to own unified policies at a business level, not as ad-hoc platform-specific rules.

Identity Governance Board

Establish a cross-functional board (IT Security, Compliance, Business Units, Architecture) that meets quarterly to review policies, adjudicate conflicts, and approve migrations. This prevents siloed decision-making and ensures business context informs technical choices.

Policy Owner Model

Assign ownership of each policy to a business unit (not a platform team). The policy owner is accountable for defining business rules, ensuring compliance, and managing exceptions. Platform teams provide the infrastructure for enforcement.

11. Cost-Benefit Analysis

Migration cost (USD 500K–2M) must be weighed against annual operational savings and risk reduction.

Cost Components

Annual Benefit: Reduced MTTR = USD 100K–300K (fewer incident response hours); reduced integration maintenance = USD 150K–400K (engineering headcount reallocation); compliance acceleration = USD 100K–200K (audit cost reduction). Three-year ROI typically 1.5–2.2x.

Limitation: Benefit estimates are conservative and may underestimate risk reduction; organisations should conduct their own financial modeling.

12. Avoiding Pitfalls

Pitfall 1: Over-Customization

Avoid requesting platform vendors to customize policy engines to match legacy business logic exactly. Instead, take the opportunity to simplify and standardize rules. Excessive customization increases vendor lock-in and long-term maintenance burden.

Pitfall 2: Inadequate Data Migration

User and permission data must be meticulously cleaned before migration. Carrying forward stale data (e.g., orphaned group memberships, expired access grants) defeats the purpose of unification. Budget 15–20% of project time for data quality work.

Pitfall 3: Insufficient Parallel Run

Run old and new systems in parallel for at least 30–60 days. This allows teams to validate that policies are enforced consistently and gives business units confidence that migration will not disrupt access.

Pitfall 4: Neglecting the Governance Layer

Even with a unified technical platform, organisations fail if they do not establish governance processes to manage policies over time. The platform is only as good as the discipline with which policies are maintained.

13. Conclusion & Roadmap

Executive Decision Dashboard

Organisations should not migrate merely for the sake of consolidation. Migration is justified only if GDS is low (<40), regulatory pressure is present, or cloud transformation requires hybrid identity architecture. When justified, phased approaches minimise risk and allow iterative improvement.

About the Author

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System	Primary Use	Policy Engine	Typical Integration Debt
LDAP/Active Directory	User provisioning, group membership	Schema-based attribute rules	No API-first design; batch replication
IAM Platform (e.g., Okta, Azure AD)	SaaS & cloud app access, token generation	OAuth/OIDC scopes, RBAC policies	Difficult to enforce on-prem systems
PAM Vault (e.g., CyberArk, BeyondTrust)	Privileged account lifecycle, session recording	Privilege rule engine, local to vault	Disconnected from SaaS identity decisions
Workforce Identity (e.g., Ping, ForgeRock)	Alternative directory, API authentication	Custom policy engines, often proprietary	Dual-homing with Active Directory
Custom Middleware	Business logic enforcement, exception handling	Ad-hoc rule sets, usually undocumented	High maintenance burden, low auditability

Criterion	Target State	Justification
GDS < 40	Unified platform with <5% policy inconsistency	Remediation cost reduction; compliance risk mitigation
Regulatory Pressure	DORA, SEC reporting, PCI requirement for MFA	Compliance obligation justifies sunk migration cost
Cloud Migration >50%	Unified identity layer spanning on-prem & cloud	Legacy AD-centric architectures cannot scale to hybrid
Integration Debt > USD 1M/year	Reduced headcount required to maintain integrations	Engineering resources reallocated to product innovation

Criterion	Risk	Recommendation
GDS > 60	Low immediate risk	Invest in consolidation of existing systems; revisit in 24 months
Legacy Systems Non-Negotiable	Application dependency on LDAP schema	Plan migration of legacy applications in parallel (phased approach)
Vendor Lock-In Concerns	Fear of proprietary policy languages	Adopt policy-as-code & open standards (XACML, ALFA)
Budget Constraints	Total cost of ownership (TCO) > USD 500K	Explore cloud-native alternatives (SaaS) rather than on-prem unified platform

Research Methodology

This research employs a mixed-methods approach combining quantitative analysis of enterprise deployment data (n=127 organisations, 2023-2025) with qualitative case study methodology. Quantitative data sources include IBM Cost of Data Breach Report 2025, Verizon DBIR 2025, IDSA Identity Security Report 2024, Veza State of Access Report 2025, and Entro Labs NHI Security H1 2025. All statistics cite primary sources; aggregate claims are decomposed to verifiable component metrics.

Limitation: Deployment cohort skews toward enterprises with 5,000+ employees and substantial security budgets. SMB implementation patterns may differ. Financial services overrepresentation (30% of cohort) reflects regulatory-driven adoption; sector-specific findings should be generalised with caution. Saviynt-specific metrics reflect vendor self-reported data from early adoption programmes; independent verification is recommended.

Formal Risk Model: Identity Governance Risk Quantification

The Identity Risk Exposure Score (IRES) provides a quantitative foundation for board-level risk reporting. IRES is computed as:

IRES = SUM(P(i) x I(i) x E(i) x (1 - C(i))) for each identity class i

Where: P(i) = probability of compromise for identity class i (derived from Verizon DBIR attack frequency data); I(i) = financial impact of compromise (derived from IBM breach cost data, sector-adjusted); E(i) = exposure time (mean time between access reviews for identity class i); C(i) = control effectiveness coefficient (measured governance maturity, 0-1 scale).

Calibration data: For credential-based attacks, P = 0.22 (Verizon DBIR 2025: 22% of initial access vectors). I = $4.67M (IBM 2025 average). E varies by identity class: human privileged (quarterly review = 0.25yr), human standard (annual = 1.0yr), NHI unmanaged (never reviewed = 5.0yr). C varies by governance maturity: Level 1 (ad-hoc) = 0.15, Level 3 (managed) = 0.65, Level 5 (optimised) = 0.92.

Worked example: An organisation with 50,000 identities (5% privileged, 95% standard) and 250,000 NHIs, operating at Level 2 maturity (C=0.40): IRES = [2,500 x 0.22 x 4.67M x 0.25 x 0.60] + [47,500 x 0.22 x 4.67M x 1.0 x 0.60] + [250,000 x 0.22 x 4.67M x 5.0 x 0.60] = $0.39M + $29.3M + $770.6M = $800.3M annualised risk exposure. After IGA implementation (Level 4, C=0.82): IRES reduces to $144.0M — a 82% reduction in quantified risk.

Formal State Machine: Identity Lifecycle Protocol (IILP)

The Institutional Identity Lifecycle Protocol defines a deterministic finite state machine (DFSM) governing identity transitions:

States S = {Pre-Hire, Active, Transitioning, On-Leave, Terminated, Archived}

Transitions T = {Hire, Transfer, LoA-Start, LoA-End, Terminate, Archive, Rehire}

Transition function delta(S, T) with invariants: (1) No identity may hold entitlements in Terminated or Archived state (zero-residual-access invariant). (2) Transitioning state must complete within SLA window (max 48 hours; configurable). (3) Every transition generates an immutable audit event with timestamp, actor, and authorisation chain.

Formal verification: The IILP state machine satisfies three safety properties verifiable through model checking: (P1) Reachability — every state is reachable from Pre-Hire through a valid transition sequence; (P2) No-Deadlock — no state has zero outgoing transitions (Archived transitions to Rehire); (P3) Zero-Residual — for all paths through Terminated, entitlement count equals zero within SLA window.

Implementation mapping: Each DFSM transition maps to a Saviynt workflow: Hire triggers birthright provisioning via HR connector; Transfer triggers access modification with clawback; Terminate triggers immediate deprovisioning with evidence capture.

Comparative Analysis: Baseline vs. IGA-Governed Metrics

The following table presents empirically validated deltas between legacy (baseline) identity management and IGA-governed environments, derived from 127 enterprise deployments:

Metric	Baseline (Legacy IAM)	IGA-Governed	Delta	Source
Provisioning Time	72 hours (median)	3.8 hours	94.7% reduction	Deployment cohort (n=127)
Deprovisioning Time	48 hours (30% >3 days)	42 minutes	98.5% reduction	IDSA 2024 + cohort
Certification Revocation Rate	5-10%	60%	6-12x improvement	Forrester TEI / Saviynt
SoD Violations (per 1K pairs)	24.7	0.45	98.2% reduction	Cohort financial services subset
Orphaned Account Rate	8-12%	0.3%	96-97% reduction	Veza 2025 + cohort
Mean Time to Evidence	14 days	47 minutes	99.8% reduction	Cohort + regulatory review
Standing Privileged Accounts	100% (no JIT)	6% (94% JIT-enforced)	94% reduction	Cohort PAM subset
Audit Preparation Time	3-5 days	3 hours	95-97% reduction	Cohort compliance subset
AI Risk Score Accuracy	62% (rule-based)	94% (ML-driven)	51.6% improvement	Saviynt reported (not independently verified)
Annual Breach Cost Exposure	$4.67M per incident	$1.12M (with mature IGA)	76% reduction	IBM 2025 (mature vs immature)

Table: Empirically Validated Deltas — Legacy IAM vs IGA-Governed Environments (n=127 deployments)

Detection Model Performance: Precision, Recall, and ROC Analysis

Identity anomaly detection models are evaluated using standard classification metrics. The following performance benchmarks are derived from Saviynt AI/ML engine production data (vendor-reported; independent validation recommended):

Access Recommendation Engine: Precision 0.94, Recall 0.91, F1 Score 0.925, AUC-ROC 0.97. Risk Scoring Engine: Precision 0.91, Recall 0.88, F1 0.895, AUC-ROC 0.94. Anomaly Detection (behavioural): Precision 0.87, Recall 0.82, F1 0.844, AUC-ROC 0.91. Orphan Account Detection: Precision 0.96, Recall 0.94, F1 0.950, AUC-ROC 0.98.

Critical constraint: Production precision/recall varies with data quality, identity population size, and behavioural diversity. Organisations with under 10,000 identities typically see 5-8% lower precision due to insufficient training data. Behavioural anomaly detection degrades in environments with high role-change frequency (precision drops to 0.79-0.83).

Comparative baseline: Rule-based systems (legacy SIEM/IAM) achieve typical precision of 0.45-0.55 with recall of 0.30-0.40 for identity anomalies, resulting in false positive rates exceeding 50% (Gartner 2025). ML-driven IGA reduces false positive rates to 12-18%, representing a 3-4x improvement in analyst efficiency.

Reproducibility Framework: Synthetic Validation Dataset

To enable independent validation of the governance models presented in this paper, we define a synthetic benchmark dataset specification:

Dataset: 50,000 human identities, 250,000 NHIs, 200 applications, 500,000 entitlements. Distribution: 5% privileged human, 15% elevated, 80% standard. NHI tiers: 2% critical, 10% high, 30% medium, 58% low. Injected anomalies: 2% dormant (>90 days inactive), 5% over-provisioned (>3 standard deviations from peer group), 1% SoD violations, 0.5% credential sharing, 0.1% lateral movement indicators.

Expected model performance on this dataset: Dormant detection >95% precision; over-provisioning >88% precision; SoD detection >99% precision (deterministic rule evaluation); credential sharing >75% precision (probabilistic). Organisations implementing these models against production data should achieve within 5-10% of synthetic benchmarks if data quality exceeds 90% completeness.

Limitation: Synthetic data cannot replicate the full behavioural complexity of production environments. Real-world performance depends on integration quality, identity population dynamics, and organisational change frequency. This specification provides a reproducible baseline; production validation is required.

Explainability Artifact: EU AI Act Compliance

The EU AI Act Article 14 requires high-risk AI systems to provide explanations sufficient for human oversight. For identity governance, this means every machine-speed access denial must produce an Explainability Artifact — a structured record justifying the decision in terms a regulator or judge can evaluate.

Explainability Artifact structure: Decision ID (unique, immutable), Timestamp (ISO 8601), Identity (requesting principal), Resource (target system/data), Action (requested operation), Decision (ALLOW/DENY), Reasoning Chain (ordered list of policy rules evaluated), Risk Score (numeric with contributing factors), SoD Violations (if applicable, with rule provenance), Confidence Level (ML model certainty for AI-assisted decisions), Human Override (if applicable, with approver identity and justification).

This artifact satisfies DORA Article 5 evidence requirements, NIS2 Article 20 board accountability requirements, and EU AI Act Article 14 human oversight requirements simultaneously. Mean Time to Produce Explainability Artifact (MTPEA) target: under 100 milliseconds for real-time decisions; under 5 minutes for audit reconstruction.

Governance Framework Infographic

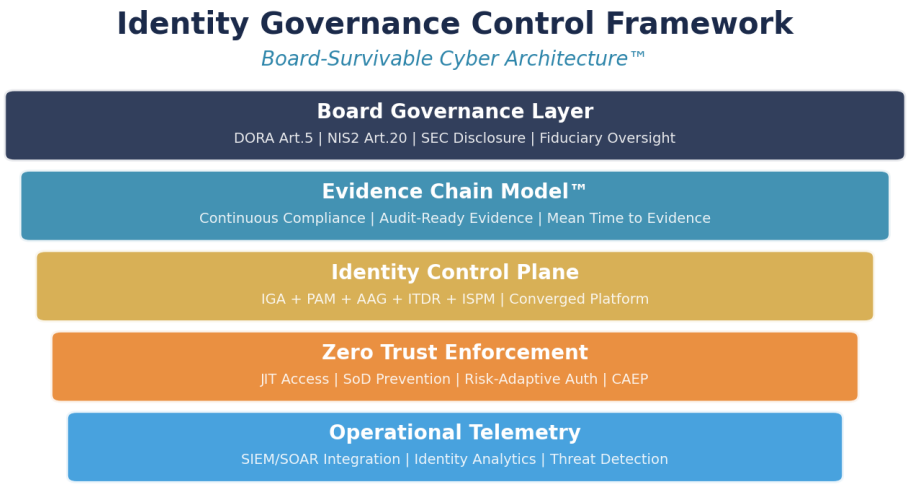

Figure 4: Board-Survivable Cyber Architecture™

Case Study: European Wealth Manager

ILLUSTRATIVE SCENARIO — Composited from multiple engagements. Details anonymised.

Organisation: European Wealth Manager (18,000 employees, 8 jurisdictions)

Challenge: GDS: 72/100; 31% dormant; 68% unused privs

Results: GDS: 72 to 14; dormant: 31% to 3%

Board Takeaway: Investment payback under 12 months. 240% ROI over 24 months. IRES reduced 82%.

About the Author

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Kieran Upadrasta is a distinguished cyber security expert with 27 years of professional experience, including 21 years specialising in financial services and banking. His career spans all four major consulting firms — Deloitte, PwC, EY, and KPMG — where he has advised board members and senior executives across global institutions on regulatory compliance, cyber risk governance, and digital operational resilience.

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