



TOP BUSINESS NEEDS OF PENSION FUNDS

An Institutional AI White Paper

AI GOVERNANCE FOR THE STEWARDS OF RETIREMENT SECURITY

EXECUTIVE SUMMARY

Pension funds enter 2026 in their strongest financial position in over a decade — yet facing a more complex strategic, operational, and governance environment than at any prior point. The world's 300 largest pension funds reached a record \$24.4 trillion in assets recently, and US corporate plans are averaging 105% funded ratios for the first time in 15 years. But improved funding does not mean reduced complexity. It creates new decisions — about de-risking, benefit enhancement, alternative allocation, and the governance of increasingly sophisticated AI-driven investment and operational systems.

This white paper identifies the five defining business needs shaping pension fund leadership agendas in 2026: funding stability and liability governance, investment strategy evolution, operational resilience and technology governance, beneficiary service and transparency, and the AI governance imperative that cuts across all four. For each need, we identify the strategic drivers, the operational challenges, the investment considerations, and the AI governance implications that pension fund boards and investment committees must now address.

The defining challenge of 2026 is not that pension funds lack AI capability. It is that the AI they are deploying is governed by the providers that build it — not the institutions that depend on it. That dependency is a governance failure that compounds with every new AI capability deployed without a sovereign governance framework behind it.

THE PENSION FUND LANDSCAPE IN 2026

<p>\$24.4T</p> <p>Global Pension Assets</p> <p><i>World's 300 largest funds, 2024</i></p>	<p>105%</p> <p>Average Funded Ratio</p> <p><i>US corporate plans, healthiest in 15 years</i></p>	<p>~80%</p> <p>Public Plan Funding</p> <p><i>US state & local plans, up from 75.5%</i></p>	<p>\$1.3T+</p> <p>Aggregate Unfunded Liabilities</p> <p><i>US public pension plans</i></p>
<p>28%</p> <p>Alternative Allocations</p> <p><i>Public pension allocations to private markets</i></p>	<p>9/20</p> <p>Top Funds Cite AI Risk</p> <p><i>Highlight technology as both opportunity and risk</i></p>	<p>10/20</p> <p>Enhancing AI Expertise</p> <p><i>Top 20 funds investing in AI capability</i></p>	<p>\$2.8T</p> <p>Private Debt AUM by 2028</p> <p><i>Projected from record 2023 fundraising</i></p>

NEED 1 — FUNDING STABILITY AND LIABILITY GOVERNANCE

Preserving gains, managing surpluses, and securing long-term benefit promises

The improvement in pension fund financial positions is the headline — but it creates as many governance challenges as it resolves. Plans that were underfunded for decades are now navigating surplus management, benefit enhancement decisions, and plan reopening conversations. Each of these decisions requires AI-assisted actuarial analysis, liability projection, and scenario modeling that must be governed to the same fiduciary standard as the decisions themselves.

Strategic Priorities

- **Preserving funding gains:** Pension sponsors are pivoting from achieving full funding to maintaining surpluses. IBM's recent pension plan reopening — using surplus assets to bolster employee retention — is an early indicator of a broader trend. This requires sophisticated liability modeling and de-risking analysis that increasingly depends on AI systems.
- **De-risking investment strategy:** With interest rates at decade highs, pensions are rebalancing toward liability-matching assets. US public pensions increased fixed-income allocations in 2025 to capitalize on 5%+ yields. AI-driven ALM systems are increasingly central to identifying optimal hedging strategies — and must be governed accordingly.
- **Benefit enhancement decisions:** In tight labor markets, corporations see richer pension benefits as a recruitment tool. Decisions about benefit improvements require actuarial AI systems whose outputs must be defensible to trustees, regulators, and beneficiaries.

Operational Challenges

- **Funded status volatility:** Even well-funded plans must vigilantly hedge interest-rate risk through LDI strategies to avoid future deficits. An inverted yield curve has complicated traditional liability-driven investing programs, forcing pension CIOs to adjust hedging and cash-flow strategies in real time — increasingly with AI assistance.
- **Governance and stakeholder scrutiny:** Improved finances bring heightened scrutiny. Regulators, plan sponsors, and beneficiaries are raising expectations on how pensions are managed. Pension boards must balance demands for higher benefits or lower contributions against fiduciary duties to keep plans sustainable — with AI governance frameworks that can demonstrate prudent expert standards.
- **Political and budgetary pressure:** In public systems, political dynamics can hinder needed contribution increases. AI systems informing funding policy recommendations must produce audit trails that withstand legislative scrutiny.

The AI governance implication: AI systems contributing to funded status projections, liability calculations, and benefit enhancement analyses carry the same actuarial accountability as the human actuary certifying those calculations. AI-assisted actuarial work that cannot produce a complete, auditable decision trail creates regulatory and legal exposure that traditional actuarial calculations do not.

NEED 2 — INVESTMENT STRATEGY EVOLUTION

Navigating a new rate regime while expanding into private markets and AI-driven portfolio intelligence

The investment playbook for 2025 to 2026 centers on balancing risk and return in a rate environment that has fundamentally changed the economics of liability-matching. Higher bond yields present the opportunity to earn safer returns. Private markets continue to attract allocations for illiquidity premia. And AI is being deployed across research, portfolio construction, risk management, and manager monitoring at an accelerating pace — without corresponding acceleration in AI governance frameworks.

Investment Considerations

- **Fixed income and liability matching:** Many US plans shortened duration and locked in yields in 2025. However, pensions must also contend with persistent inflation risk eroding real returns. AI-driven ALM systems that dynamically model duration matching and cash flow alignment are increasingly central to this function.
- **Private markets selectivity:** Nearly 28% of US public pension assets are in illiquid alternatives — private equity, private credit, infrastructure, and real assets — that require fair-value estimates. AI systems assisting in private markets due diligence, capital call management, and valuation must be governed with the same rigor as public markets AI. Prequin projects the private debt market to nearly double to \$2.8 trillion AUM by 2028, intensifying the governance requirement.
- **Total portfolio frameworks:** A number of top funds have adopted total portfolio frameworks to better align assets with long-term objectives. AI systems contributing to total portfolio optimization — across public and private assets simultaneously — must produce explainable, auditable outputs for investment committee review.
- **ESG and climate allocation:** Large pensions — particularly in Europe and Canada — have adopted net-zero emissions targets and are reallocating capital toward the energy transition. AI-assisted ESG analysis and impact measurement must be technically governed to produce the audit trails that regulatory and stakeholder disclosure obligations require.

The AI governance implication: ten of the top 20 pension funds reported enhancing their AI and technology expertise for portfolio management. Nine of the top 20 highlight AI as both an opportunity and a risk demanding robust controls. The funds that have enhanced AI capability without building corresponding governance frameworks are accumulating the second type of risk while pursuing the first.

NEED 3 — OPERATIONAL RESILIENCE AND TECHNOLOGY GOVERNANCE

Building the real-time operational intelligence and governance infrastructure that complex portfolios demand

The operational complexity of managing modern pension portfolios — with significant alternative asset exposure, multiple external managers, complex derivatives overlays, and real-time liability monitoring — has outpaced the operational infrastructure most pension organizations have built. Technology investment is accelerating in response. But technology investment without governance investment creates operational risk of a different order.

Operational Priorities

- **Real-time risk monitoring:** Pension CIOs are investing in systems for real-time risk monitoring and asset-liability modeling. AI systems driving this monitoring must be governed to produce continuous, auditable compliance records — not periodic snapshots.
- **Private markets operational burden:** Overseeing allocations to private markets requires specialized expertise in manager selection, valuation, and liquidity management. Many pension organizations are bolstering in-house investment teams or outsourcing to OCIO providers. AI systems supporting private markets oversight carry data governance obligations that standard commercial terms do not address.
- **Technology integration complexity:** Funds are investing in systems for real-time risk monitoring and asset-liability modeling. Integrating AI tools across investment, risk, compliance, and operational functions creates governance complexity that grows with each additional AI deployment.

The Governance Gap

The operational risk that most pension technology program have not yet addressed is the gap between AI deployment and AI governance. AI systems are being deployed across investment research, risk monitoring, compliance, and beneficiary services — on external infrastructure, under standard commercial terms, with interaction logs held in vendor systems rather than institution-controlled audit trails.

When a pension regulator, a plan sponsor, or a trustee board asks whether the AI contributing to investment decisions meets the prudent expert standard — the answer that most pension funds can currently give is incomplete. The logs that would demonstrate compliance are not in systems the fund controls.

The AI governance implication: pension funds investing in AI for real-time risk monitoring and portfolio management must invest equally in the governance infrastructure that makes that AI demonstrably compliant. Technology investment without governance investment creates examination exposure that grows with every new AI capability deployed.

NEED 4 — BENEFICIARY SERVICE AND TRANSPARENCY

Delivering the accountability to beneficiaries and stakeholders that improved financial positions demand

Improved pension fund financial positions have raised rather than reduced the expectations of beneficiaries, regulators, and oversight bodies. The trustee board that could point to funding challenges as the explanation for limited benefit enhancements now faces a different accountability conversation — one in which AI systems contributing to benefit calculations, investment decisions, and plan administration must be explainable, auditable, and demonstrably aligned with beneficiary interests.

Stakeholder Expectations

- **Beneficiary transparency:** Beneficiaries and their representatives expect transparency about how investment decisions affecting their retirement security are made — including the role of AI. Pension funds that cannot explain how AI contributed to investment decisions are increasingly vulnerable to beneficiary challenge.
- **Regulatory scrutiny:** Regulators are raising expectations on how pensions are managed. The move from periodic examination to continuous oversight is creating documentation requirements that AI systems must satisfy in real time — not through retrospective log reconstruction.
- **Board accountability:** Trustee boards carry personal fiduciary liability for investment decisions. As AI contributes more to those decisions, the board must be able to demonstrate that AI governance meets the prudent expert standard. Most boards cannot currently make that demonstration.
- **ESG and sustainability reporting:** Stakeholder calls to invest responsibly and report on ESG outcomes are intensifying. AI systems generating ESG assessments, impact measurements, and sustainability reports must produce outputs with the same audit trail integrity as financial reports.

The AI governance implication: beneficiary accountability is the ultimate governance obligation of every pension fund trustee. AI systems that contribute to investment decisions affecting beneficiary retirement security must be governed to a standard that the trustee board can demonstrate — not merely assert. The governance framework must produce evidence, not promises.

NEED 5 — THE AI GOVERNANCE IMPERATIVE

The cross-cutting governance challenge that determines whether the other four needs are met securely

The four business needs identified above share a common thread: each is increasingly addressed through AI systems that most pension funds do not govern to the standard their fiduciary obligations require. Funded status modeling. Investment portfolio construction. Risk monitoring. Beneficiary service. Each function is being enhanced by AI. Each AI system is operating, to varying degrees, outside institutional governance frameworks built for human decision-making.

The AI governance imperative is not a fifth business need alongside the other four. It is the governance infrastructure that determines whether the other four are met securely, defensibly, and in compliance with the fiduciary standard that pension fund trustees carry as a personal obligation.

The Structural Governance Gap

The gap is structural — not the result of negligence, but of an industry that moved to AI adoption before governance frameworks existed. AI systems are deployed on external infrastructure, under standard commercial terms, with interaction logs held in vendor systems. The pension fund that completes its annual investment committee review using AI-assisted portfolio analysis has almost certainly used AI whose interaction logs — recording what data was processed, what model was used, what governance policy it operated under — are not in systems the fund controls.

Governance Dimension	Current State — Most Pension Funds	Required State — Prudent Expert Standard
AI interaction logs	Held in vendor systems — not producible on regulatory demand from fund-controlled systems	Institution-controlled — complete logs producible within hours for trustee board and regulatory examination
Model governance	Black box — model version, inputs, and decision provenance not tracked in fund systems	Full provenance — model version, data inputs, governance policy, and output traceable from fund-controlled audit trail
Agent governance	Invisible — autonomous AI actions affecting investment and operations not logged in fund systems	Fully auditable — every agent action logged in real time to fund-controlled systems accessible to trustees and regulators
Data residency	Contractually promised — provider attests to residency; no independent technical enforcement	Technically enforced — data residency enforced at infrastructure layer; cryptographic proof producible on demand
Board reporting	Periodic attestation — trustees told AI governance is in place at quarterly review	Continuous evidence — board receives structured AI governance report showing compliance posture in real time

What Sovereign AI Governance Means for Pension Funds

A pension fund that has achieved sovereign AI governance can do five things that most funds currently cannot.

- Demonstrate to the trustee board — with technical evidence, not provider attestation — that every AI system contributing to investment decisions is governed to the prudent expert standard.
- Produce a complete audit trail of any AI-assisted investment decision from 18 months ago within 24 hours — from fund-controlled systems — for regulatory examination or trustee review.
- Show that no external provider has technical access to sensitive pension fund investment intelligence during AI processing — through HYOK encryption and confidential computing.
- Demonstrate that every autonomous AI agent operating in the fund's investment and operational workflows is logged, governed, and auditable to trustees and regulators in real time.

- Continue operating if a primary AI provider restricts access — because sovereign infrastructure includes the technical and contractual independence that makes any single provider's decisions irrelevant to fund operations.

The prudent expert standard does not have a technology exception. A trustee who cannot demonstrate that the AI contributing to investment decisions is governed to the standard that standard requires is not satisfying their fiduciary obligation — regardless of how sophisticated the AI is or how strong the investment performance has been.

INSTITUTIONAL AI — SOVEREIGN AI GOVERNANCE FOR PENSION FUNDS

Institutional AI provides the sovereign AI governance architecture that reconnects pension fund fiduciary authority with the AI systems that serve it. The Institutional AI Stack™ connects the five AI ecosystems — Power, Computing, Data Centers, Models, and Agentic Applications — under one governed structure built around the fund's specific regulatory obligations and governance standards. OLTAIX™ governs every layer in real time — enforcing what AI is permitted to do, logging every action in fund-controlled systems, and producing the board-ready evidence packages that demonstrate governance to trustees and regulators.

The result is Sovereign AI™ — the condition in which every AI system contributing to pension fund decisions is owned, governed, and under institutional command. Not promised in a contract. Technically enforced.

The AI Sovereignty Assessment for Pension Funds

The AI Sovereignty Assessment applies five governance control dimensions — Jurisdictional, Logical, Technical, Operational, and Contractual — independently to each of five AI infrastructure layers: Power, Compute, Data Centers, Models, and Agentic Applications. The result is a 5x5 matrix of 25 specific, answerable governance questions. Each cell is scored 1 (Reactive) to 4 (Sovereign).

The assessment tells the pension fund's investment committee and trustee board exactly where their AI governance stands today — which cells are at Level 1 and represent the highest examination and fiduciary risk, how the fund compares to peer institutions, and which strategy — Rent, Rent + Govern, Compose, or Build — the fund's obligations, AI dependency, and financial capacity require.

Score	Strategy	What it means for the fund
0–40	RENT	AI is supplementary. Managed cloud with standard governance. Immediate priority: negotiate enhanced contractual terms with all AI providers.
41–80	RENT + GOVERN	AI is important. Enhanced contractual controls and BYOK encryption required. Models and Agents columns must be contractual priority.
81–120	COMPOSE	AI is strategic. Hybrid sovereign architecture needed. Sovereign infrastructure for investment AI and beneficiary data processing.
121–160	BUILD	AI is existential. Full sovereign infrastructure required. Complete five-pillar control framework across every ecosystem.

The AI Sovereignty Assessment is complimentary for qualifying pension funds.
 Score your governance. Benchmark against peers. No obligation.
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SOURCES

The industry data and analysis in this white paper draws on the following sources, dated 2023 to 2025.

- BlackRock — 2024 Corporate Pensions Themes and Global Insurance Report 2024
- Invesco — Global Sovereign Asset Management Study 2023
- Mercer — 2025 Large Asset Owner Barometer, April 2025
- Preqin — Investor Outlook Data on Private Markets, 2024
- Thinking Ahead Institute — Global Pension Assets Study 2024
- NACUBO-Commonfund — Study of Endowments 2024, released February 2025
- RBC Wealth Management — North America Family Office Report 2024

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