

AI IN INSURANCE: A GLIMPSE INTO THE FUTURE

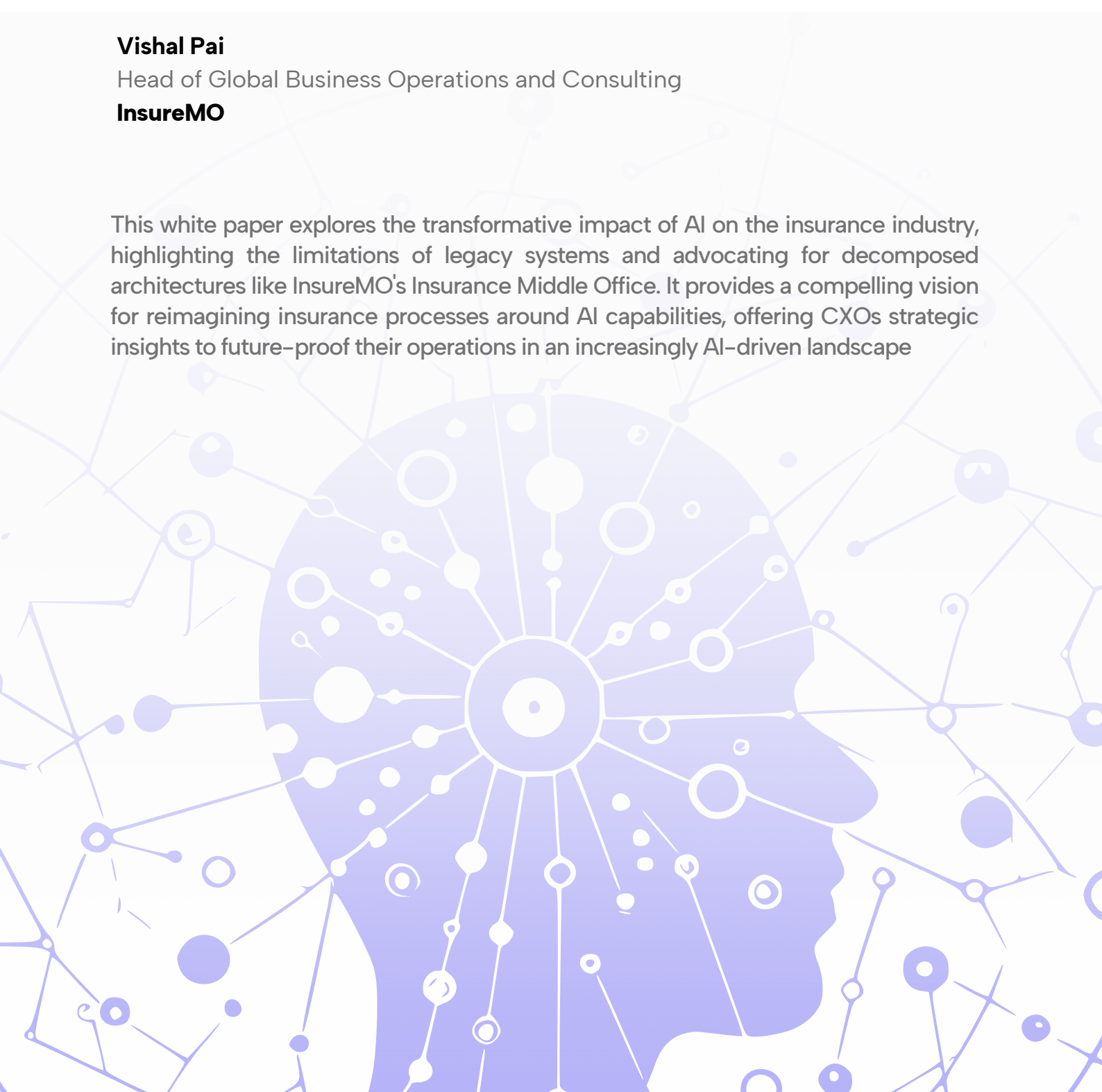
Transforming Insurance Technology: Rethinking Legacy Systems for an AI-Driven Future

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This white paper explores the transformative impact of AI on the insurance industry, highlighting the limitations of legacy systems and advocating for decomposed architectures like InsureMO's Insurance Middle Office. It provides a compelling vision for reimagining insurance processes around AI capabilities, offering CXOs strategic insights to future-proof their operations in an increasingly AI-driven landscape



Executive Summary

The insurance industry is at a critical inflection point. With advancements in large language models (LLMs) and Agentic AI, intelligent solutions are getting more industrialized and mainstream. This has the potential to rapidly transform how the Insurance business operates. However, this transformation also exposes the limitations of monolithic legacy systems—rigid, tightly coupled architectures that are increasingly misaligned with the demands of an AI-driven future. Hence, this shift forces insurance companies to reconsider their technology investments, particularly regarding core systems, which may no longer be aligned with future needs.

The article explores how AI-driven transformations will enhance these Insurance processes by providing more efficient, consistent, and automated operations, signalling the decline of traditional SaaS and monolithic applications. It further critiques current monolithic core systems, which have evolved into complex, tightly coupled solutions that limit flexibility and scalability needed for AI-driven innovation. For insurance CXOs, the article emphasizes the importance of shifting focus from improving existing human-driven processes to reimagining them with AI capabilities. Replacing monolithic core systems with similar ones could delay progress, and IT investments should focus on enabling real-time information access and supporting multiple AI agents via open APIs.

Finally, the article advocates for a decomposed system architecture, such as that offered by InsureMO, which supports Agentic AI and other systems. This architecture provides flexibility, scalability, and real-time data access, positioning insurance businesses to adapt to evolving technologies and future-proof their operations. By reimagining processes around AI capabilities, insurers can position themselves to thrive in a rapidly evolving landscape.

Industrialization of AI is sounding the knell for Business Systems as we know it

In a recent interview, the CEO of Microsoft sparked a debate across the tech industry by predicting that AI advancements will soon lead to the "death" of SaaS as we know it today. This insight has prompted CXOs across various sectors to reconsider their business models, operating strategies, and IT approaches to prepare for this rapidly approaching future. AI use cases that once required months for training, testing and perfecting, are now reaching production-grade levels in just weeks; thanks to innovations like LLMs and the advent of Agentic AI.

As AI becomes more industrialized, it marks a critical inflection point for the entire industry. By 2025, 87% of insurance companies are expected to have adopted AI in some form, up from 65% in 2021. (Source: [CoinLaw, 2024](#)) For insurance companies, particularly those investing heavily in new core systems, it raises the crucial question of whether these investments align with future needs.

Imagine a future where every stakeholder in the insurance ecosystem—customers, agents, policy administrators, and claims adjusters—operates like Tony Stark with their own JARVIS-like multi-agent AI assistant. These multi-agent AI systems can understand natural language inputs (text or speech), analyse internal and external data sources, provide actionable insights, make recommendations, and even autonomously complete tasks. While this seemed like science fiction in the 2008 Iron Man movie, it no longer feels distant.

The industrialization of AI brings profound implications for the insurance industry:

Sales:

AI agents could aid or replace human agents in selling insurance, providing a more efficient, consistent, and humane experience.

Underwriting:

Underwriting will become more informed and efficient. Also, automated for most parts.

Servicing and Claims:

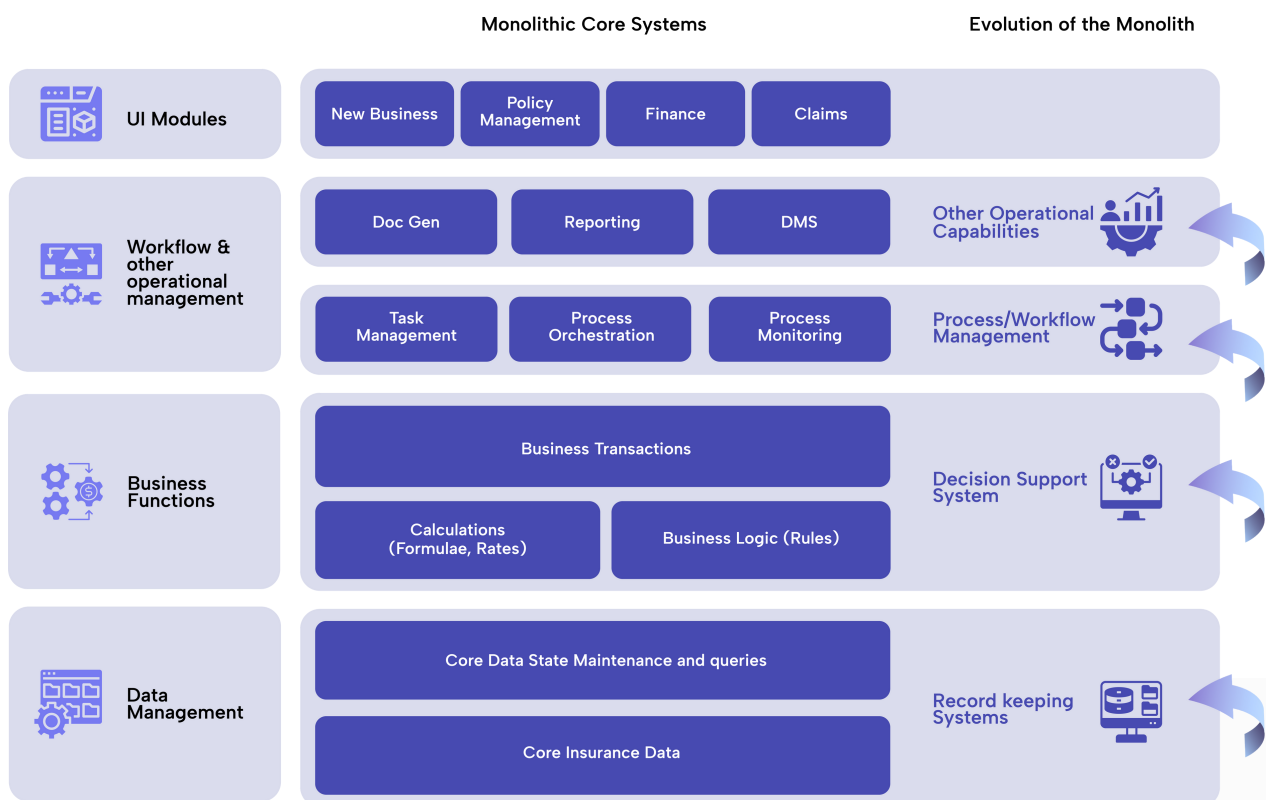
AI-driven systems could streamline servicing and claims, ensuring compliance and payment within a single customer interaction.

These advancements signal the decline of traditional SaaS models and monolithic applications, which are ill-equipped to support such dynamic capabilities.

Time for CXOs to reassess their modernization strategies

For decades, insurers have relied on monolithic core systems—comprehensive platforms designed to handle everything from policy administration to claims processing. These systems evolved into complex systems with tightly coupled layers of data, rules engines, workflows, and analytics. While they served their purpose in an era dominated by human-driven processes, they are now ill-suited for the demands of an AI-first world. A recent global survey revealed that outdated technology infrastructure is the primary obstacle to innovation within the insurance industry, with 45% of companies acknowledging it as a major impediment. (Source: [Insurance Business Magazine](#))

Illustration 1: Evolution of monolithic core systems with capabilities being piled up over the decades



Key Challenges with Monolithic Systems

Human-Centric Processing:

- Monolithic systems are designed around human-led workflows, making it challenging to adapt to AI-driven task distribution.
- User interfaces and business processes are tightly integrated, reducing flexibility for AI-driven innovations.

Limited Externalization Capabilities:

- Data and business logic are closely intertwined within the system, hindering seamless integration with open architectures required by modern AI solutions.
- Even traditional service-oriented architecture (SOA) approaches provide limited externalization options, often constrained by the human-centric workflows they support.

Costly Scalability:

- Supporting AI applications demands atomic functions and high-volume API calls—capabilities that monolithic systems struggle to provide cost-effectively.
- Insurance companies that implement modular systems often experience a 35–40% reduction in cost-to-serve due to improved processes and reduced reliance on legacy systems. (Source: [Decerto, 2024](#))
- Scaling monolithic systems for high transaction volumes can be prohibitively expensive, especially when compared to cloud-native alternatives.

Hence, to thrive in an AI-driven future, insurers must adopt strategies that go beyond like-for-like improvements or replacements.

Modernization Strategies for CXOs

Reimagining Processes with AI:

- Shift from optimizing human-driven workflows to redesigning them with AI at the core.
- Example: Automate claims processing end-to-end using LLMs for document analysis and predictive decision-making.

Avoiding Monolithic Replacements:

- Replacing one monolithic system with another is a costly endeavor that does not future-proof operations.
- Invest in modular architectures that support agile upgrades and integration with emerging technologies.

Enabling Real-Time Access and Flexibility:

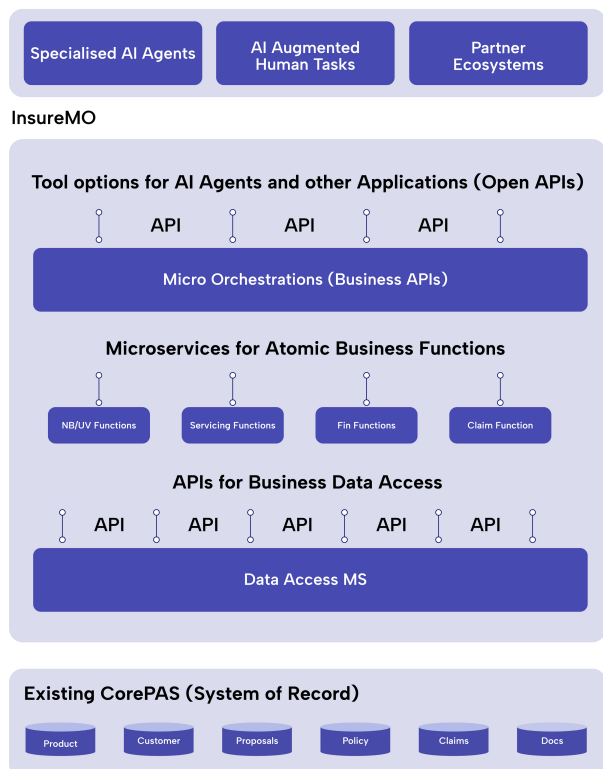
- Prioritize IT investments that facilitate real-time data sharing across multiple agents or front-end interfaces.
- Open APIs enable seamless integration with advanced tools and technologies

The Case for Decomposed System Architectures

A decomposed system architecture—like one offered with InsureMO's Insurance Middle Office—addresses the limitations of monolithic systems while enabling insurers to harness the full potential of Agentic AI.

Illustration 2: Conceptual representation of a decomposed system architecture with InsureMO Middle office

Fragmented User Experiences



Let us understand what do we mean and get as benefits from a decomposed system architecture.

Key features of Decomposed Architectures

Flexible User Interface support for fragmented User Experiences:

Business processes will be carried out across fragmented user experiences assisted by AI Agents and limited human involvement for simplified tasks that need human decision making. This architecture enables fragmented user experiences by decoupling business processes from a single user interface module, allowing diverse user interactions.

Evolving Processes supported by Atomic Tools:

As new AI capabilities evolve, the business processes will also have to adapt to these. This requires the Core business functions should be broken down for easier orchestration, while ensuring that regulatory requirements, business rules, and calculations remain well-defined. This architecture offers a wide array of options is available for AI agents and other interfaces, including:

- Composite and atomic business APIs
- Stateless and stateful API functions

Data at fingertips and Actionable Insights:

Data is made readily available for quick analysis to support decision-making and predictive capabilities with data access APIs.

Core Systems as the System of Record

Existing SaaS and monolithic systems act as the system of record, reducing the need for costly and risky data migrations or downstream integrations during core modernization efforts.

Limitless API Calling Support*

Built on a cloud-native, microservices architecture, InsureMO offers the scalability** required for Agentic AI applications, supporting limitless API calls.

**AI-driven applications require systems capable of handling up to 10x more API calls compared to traditional workflows. (Source: Forrester Research, 2024)*

***Cloud-native architectures supporting microservices have been shown to reduce infrastructure costs by up to 30% while improving scalability for high-volume transactions. (Source: IDC, 2023)*

Future-Proof Your Operations

The future of insurance lies in reimagining processes with AI at the core—not simply upgrading legacy systems. By adopting a decomposed architecture like InsureMO's Insurance Middle Office, insurers can:

- Deliver seamless experiences across fragmented user interfaces.
- Adapt quickly to evolving business needs and regulatory requirements.
- Unlock new revenue streams through innovative product offerings.

The time to act is now. Don't let legacy systems hold you back—embrace the future with InsureMO's flexible architecture and be ready for what's next.



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