

HEXWARE

Scaling Agentic Operations with Insurance SLM: From Prototype to Production

Introduction

Every insurer has an AI story — a pilot that worked, a demo that landed. Very few have an AI system that runs inside the real business, on real data, through the real legacy core, accountable to a regulator. That gap is where most agentic AI in insurance initiatives quietly stall — not because the model was wrong, but because everything underneath it was unprepared. Hexaware’s five capabilities close this gap in one sequence: measure the process, refine the data into something a Small Language Model (SLM) can reason over, modernize the core so AI agents have somewhere to act, run the business through explainable underwriting and claims automation, and sustain the estate so none of it decays.

The Argument

An agent cannot own a decision on an unmeasured process, reason well on unrefined data, act at scale on a legacy core that hasn’t moved in a decade, or be trusted in production if it can’t be explained to a regulator — and none of it survives if the platform underneath keeps decaying unnoticed. Turning a prototype into production takes more than a working model; it takes the right foundations, built in the right sequence.

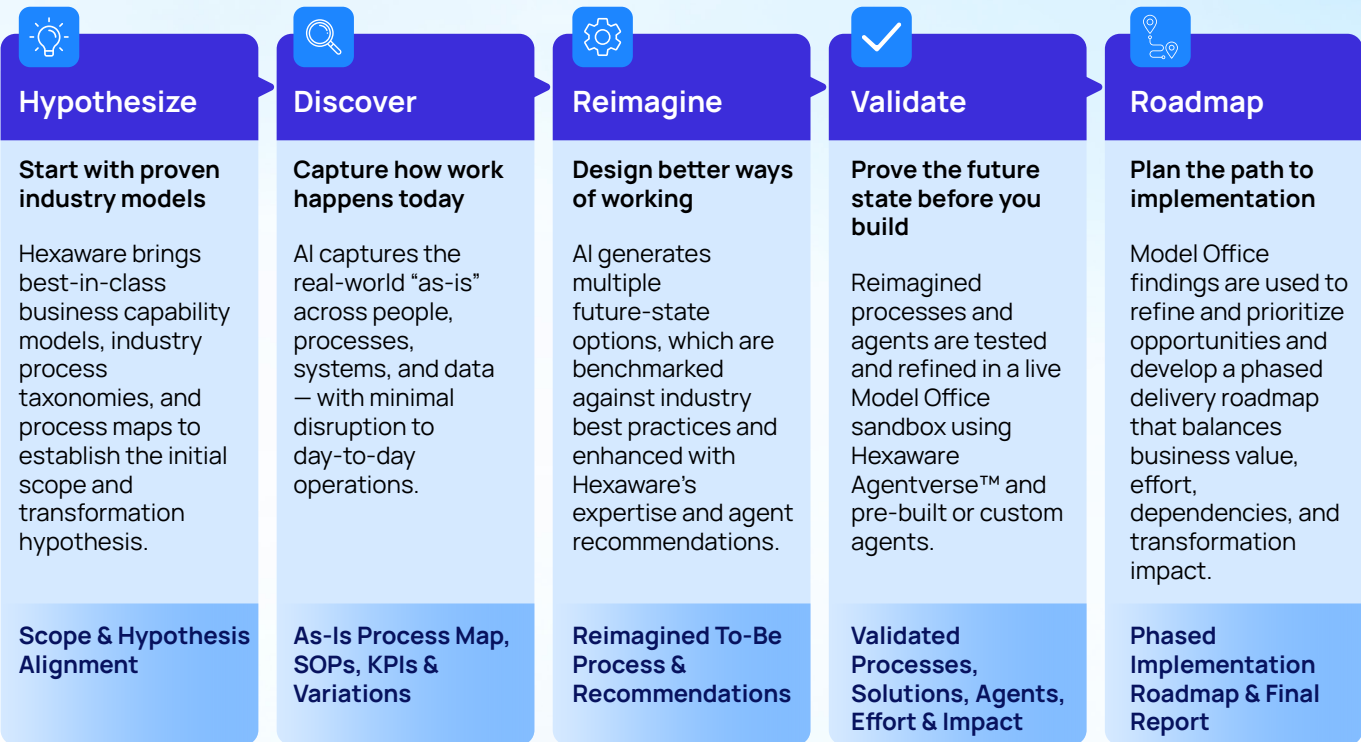
Five Capabilities. One Path to Production.

1 Zero Limit See It Before You Scale It

AI-led Process Reimagination for Underwriting and Claims

You can't put an AI agent in charge of a process you've never actually measured. Before underwriting automation or claims automation can scale, the process underneath has to be seen clearly — every variation, every bottleneck, every hidden cost. Zero Limit, Hexaware’s process intelligence and reimagination capability gives you that, ground truth, then proves the redesign before you spend a dollar building it.

A Proven 5-Step Path to a Validated Future State



The Impacts

100%
of your process captured silently — no interviews, no bias

5
structured steps from hypothesis to implementation roadmap

Proven
before you build, validated in a live Model Office

“ You can’t improve what you can’t measure. Zero Limit measures it all, silently, completely, and at full scale. ”

Why It Matters

An AI agent trained on an unmeasured process will simply automate the mess faster. Zero Limit is where scaling starts, with a process that has been seen, reimaged, and proven — so the underwriting automation and claims automation that follow actually work in production, not just in the demo.

2 Insurance Core Modernization Free the Core

Legacy Modernization Without the Rip-and-Replace Risk

Somewhere in your estate is a system that runs the business and that nobody wants to touch. You can't put an AI agent in charge of a process that lives inside code nobody can read. Hexaware's legacy modernization solution gives that core a way out: real insurance core modernization without a rip-and-replace risk profile.

Three Phases. One Composable Core.

1 Illuminate: Understand and Isolate the Beast

MF Monolith System(s) –
Code, Documentation

Insurance Legacy
Modernization Patterns

Reference Insurance
Business Architecture

Code Clustering & Domain Scoring Framework

- Cluster MF modules into 10-15 domains and code clusters
- Removing Utility components
- Score existing business features by ROI and change urgency

Code Comprehension Agents

- Extract business rules
- Extract existing functional and data flows
- Volumetrics scan in modules
- Code-level analysis
- Batch/Job & PROC analysis
- Implement observability
- Compute tech debt score
- Perform data modernization scan
- Dependency heatmaps

Target Model & Decision Tree

- Reuse/throw/reimagine
- Create target BCM
- Build vs buy decision for different insurance functions
- Quick wins for decouple
- Future state architecture
- BCM and feature backlog

- Existing Business Architecture and Business Capability Model
- Process Flow

- Knowledge Graph
- Business Rules
- Pseudo-Algorithm, Inputs/Outputs
- Code Snippets
- Dependencies
- Job Flow
- Embedded PROCs and Utility Modules

- Domain-centric Wave Plan
- Target Feature List

2 Decouple: Break it Smartly, Not Brutally

Generated -
Knowledge Graph

Blueprinting Agents

- API façade and wrapping
- Domain carving and event mesh
- Data replication and semantic layer
- Future process flows, architecture, security flows
- Code generation using AI tools
- Strangulate core; Incremental replacement, testing, and safety net

- 5 Layered Insurance
- Composable Architecture

- TDDs, Process Maps
- API Gateway
- Decoupled Microservices
- Event Bus
- Data Lake with Semantic schemas
- Modernized Business Functions

3 Re-Invent: Build the Digital Core

Generated -
Knowledge Graph

Blueprinting Agents + Hexaware Agentverse™

- Reimagine the core for latest features
- Move towards complete composable architecture
- Introduce an agentic AI orchestration layer to automate end-to-end flows
- Plan controlled cutover windows
- Establish SRE, runbooks, observability, and FinOps playbooks

- Decommissioned Core
- Reimagined Core and Non-core Systems

What You End Up With

10-15

business domains,
clustered and scored by ROI



5

architecture layers,
fully composable



1

agentic orchestration layer,
automating end-to-end flows



Why It Matters

AI agents can't own a case if the system underneath them can't move. Our legacy modernization platform turns a frozen legacy core into the runway an agentic operation needs to actually land on – the difference between a pilot that stays a pilot, and one that becomes how the business runs.

3

Explainable Agentic Operations

Run the Business, Powered by SLM

Agentic AI in Insurance: From Underwriting Automation to Explainable Claims

This is what production looks like. Not a copilot suggesting the next step, but an AI agent that owns the case end-to-end, with a full audit trail behind every decision it makes. This is agentic AI in insurance, running real operations at real volume.

Building Contextual Insurance Intelligence: Agentverse™ + Insurance SLM

The Four-Layer Stack

Users

Underwriters | Claims Handlers | Actuaries | Brokers/Agents | Customers

Layer 4: AI Operations

Agentverse™ | Agentic Execution

Orchestrates agentic workflows across KG + Ontology + SLM

Layer 3: Insurance Intelligence

Insurance SLM | Insurance Reasoning

Fine-tuned on insurance context
(Phi-3/Mistral 7B)

Layer 2: Knowledge Layer

Knowledge Graph | Connected Knowledge

Links data, logic and context. Enables richer, explainable and trusted AI

LAYER 1: Business Foundation

Insurance Ontology & Semantic Model | Shared insurance meaning

Formally defines every insurance concept, relationship, and rule in a shared vocabulary



Pre-built Insurance Agents (190+ Agents)

- Digital Underwriter
- Digital CSR
- Digital Claims Adjuster
- Risk Assessment Agent
- Churn Prediction Agent
- Claims Triage Agent

AI Command Center

- Deployment
- Monitoring
- Audit
- Escalation

Reads & Writes Enterprise Systems

- Policy Admin
- Claims System
- CRM
- Finance / SAP
- RI Platform
- Repairer Network
- Document Mgmt

Agent lifecycle management

Build → Test → Deploy → Monitor → Optimize

Glass Box Governance

Regulatory Compliant | Guardrails | AI governance | Safety | Auditability | Explainability

▲ Agents call the SLM for reasoning → SLM returns grounded, insurer-specific responses. Agents query KG directly via MCP tools for verified facts

- Policy, underwriting & coverage analysis
- Claims processing & adjudication
- Risk assessment & fraud detection
- Regulatory & compliance guidance
- Customer service & personalized advice

How KG + Ontology Provide Context to the SLM and Agents

Knowledge Graph gives FACTS

- Exact policy terms for this specific policy (not a generic template)
- This insured's full history — prior claims, disputes, reserves
- Real-time RI treaty status — remaining capacity per layer
- Fraud network — who this party is connected to across the book

Ontology gives MEANING & RULES

- Formal definitions — SLM and agents speak the same vocabulary as KG
- Inferred facts — OWL Reasoner derives NOT_COVERED without human
- Constraint rules — D&O MUST have RetroDate; policy MUST have coverage section
- Relationship chains — claim → coverage → exclusion → determination (automatic)

Together — eliminate hallucination

- SLM + KG: retrieves exact clause via RAG → always correct on facts
- Agent + KG: traverses real graph → deterministic, auditable answer

Domain-specific confidence scoring

Model governance & audit

Low-confidence checks

Real-time enterprise context

▲ KG provides the trusted insurance data. Ontology validates structure & meaning, rules enforcement required.

FACT STORE

All policies, coverages, limits, exclusions

Traversable relationship types

All parties: syndicates, brokers, insureds

Historical underwriting decisions & outcomes

All claims: FNOL → reserve → settlement

Fraud networks: multi-hop party linkages

Full RI treaty structure & recoveries

Guardrails

SHACL validation rejects any insert that violates ontology rules
· Data quality checks before KG population
· PII masked in non-production environments
· Full provenance — every fact traces to source

▲ Ontology defines KG schema. OWL Reasoner infers facts and pushes them into KG. SHACL validates every insert



Classes: What they are

- Party
- Insurance Contract
- Claim



Relationships: How they connect

- Underwrites
- Covers



Axiom & guardrails:

- D&O MUST have Retroactive Date
- Reasoner infers NOT_COVERED automatically
- No data can be inserted that violates a constraint

Source Systems

Policy Administration | Claims | Underwriting | Risk Fraud

Customer Management | Reporting | Compliance

Outcomes That Matter

30-40%

Increase in underwriter productivity



25-35%

Faster claims cycle time



30-50%

Faster deployment with pre-built agents



Works with the systems you already run — Guidewire, Duck Creek, Salesforce — and is fully LLM-agnostic.



Why It Matters

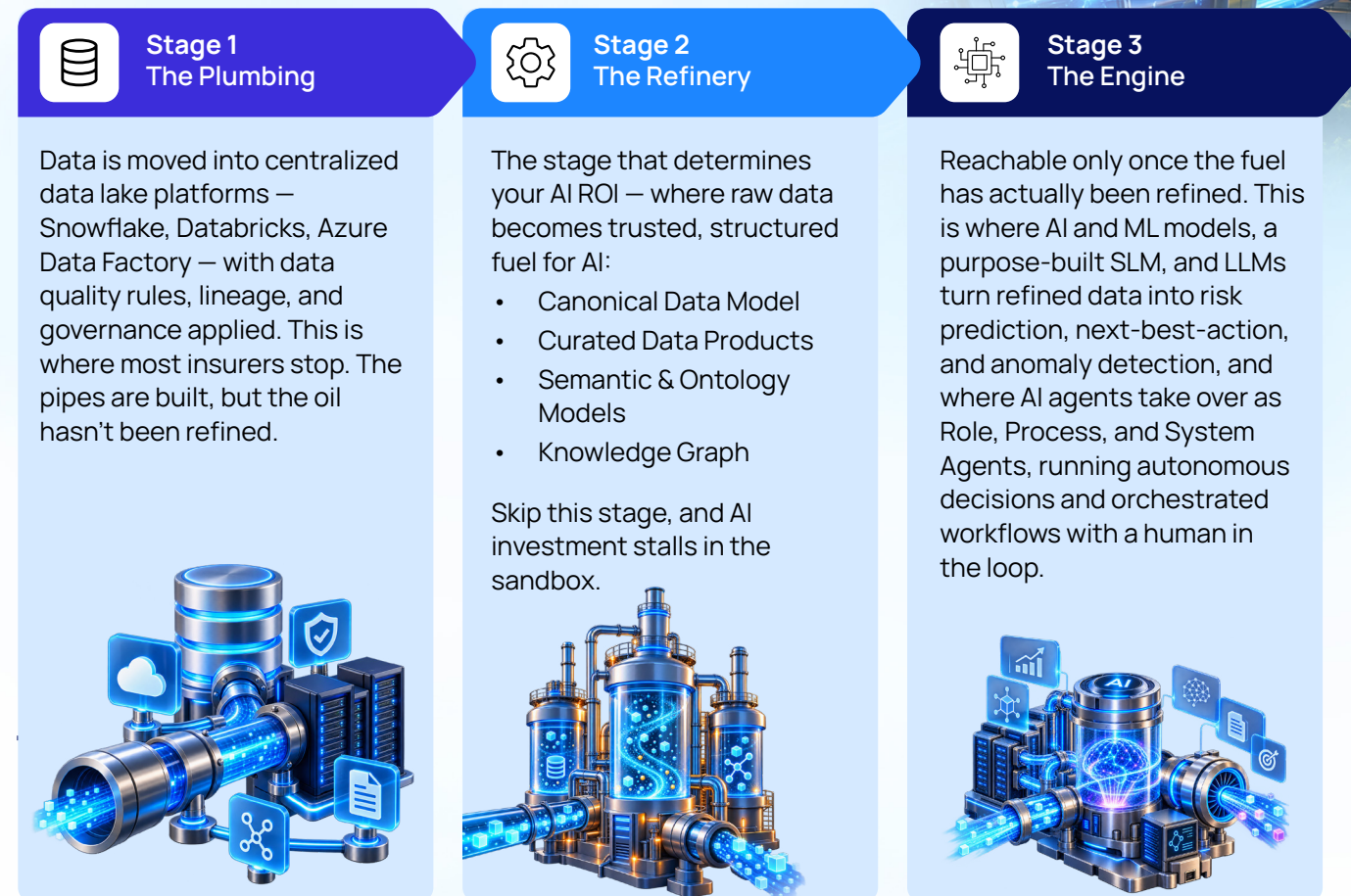
This is the moment scaling agentic AI in insurance, from prototype to production, delivers on its promise. Not a general-purpose model bolted onto insurance workflows, but an SLM, domain-specific for accuracy and frontier-backed for reasoning, running underwriting automation and claims operations at scale, with every decision explainable. Not a demo. A workforce, running on a brain built for the job.

4 Contextual Data Intelligence Refine the Fuel

From Dark Data to Contextual Intelligence

Most insurers centralize their data and call it done. But centralized isn't the same as ready. Somewhere between raw data and real intelligence sits a refinery, and skipping this layer is one of the biggest barriers to moving AI in insurance operations from the sandbox to production.

Three Stages. One Decision Point.



The Return, Layer by Layer

Investment	Return
Canonical insurance data model	20–30% reduction in rework & reconciliation
Semantic & ontology models and Knowledge Graph	25–35% faster insight and decision-making
Small Language Model	20–40% improvement in prediction accuracy



Why It Matters

An AI Intelligence is only as sharp as the data beneath it. This is where "prototype to production" becomes literal – refined data is the fuel that lets a small, purpose-built model perform like it knows your business, because it does.

5 Zerovity™ Sustain the Estate

Driving Toward the Zero Friction Enterprise™

Every enterprise carries friction – in its data, its security posture, its governance, its operations. Zero Friction Enterprise™ drives that friction toward zero, with agentic AI extending the pursuit across a growing set of focus areas, founded on infinite trust spanning data readiness, security, governance, and observability. Zerovity™, Hexaware's AI delivery layer, provides the single governed command center across the estate – turning that pursuit of zero friction into six concrete, measurable outcomes.

What It Delivers



Why It Matters

An SLM in production still runs on infrastructure that ages. Zerovity™ is what keeps the entire agentic estate – the modernized core, the 190+ agent library, the explainable decisions – governed and production-grade, permanently.

Case Studies

Proof in Production

Real transformation. Measurable outcomes.
Across the insurance value chain.

Broking Transformation

Client
A large-scale broking operation, high transaction volume

Challenge
Manual intervention and slow approvals across broking processes

Solution
Process redesign to cut manual touchpoints and accelerate approvals



Benefits

- 30% ↓ manual touchpoints
- 3X faster approval process
- \$300M+ savings over 3 years

Claims Document Intelligence

Client
A UK-based insurer

Challenge
Manual, document-heavy claims processes across FNOL, FROI, and payments

Solution
AI-powered claims processing and intelligent document processing



Benefits

- Faster access to critical claims information extended into tax transformation and identity

AI-powered Faster Claims

Client
A medical claims processing operation

Challenge
Hundreds of pages of medical documentation slowing claims review

Solution
Generative AI and multi-agent collaboration for summarization and extraction



Benefits

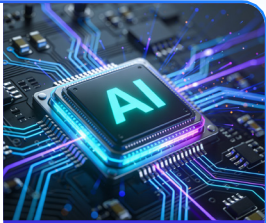
- Less manual review
- Faster access to the information that matters

AI Adoption

Client
A carrier embedding AI into customer-facing journeys

Challenge
Manual, slower customer decisioning and engagement

Solution
Generative and agentic AI embedded into journeys, including AI-powered Scan & Drive



Benefits

- 25% faster decision-making
- 15% growth in customer engagement

IT Operations Transformation

Client
An insurer's IT operations function

Challenge
High support costs and call volumes limiting operational efficiency

Solution
Infrastructure and application support transformation



Benefits

- £3M annual savings
- 40% ↓ call volume

Core Platform Implementation

Client
An insurer running a legacy core platform

Challenge
Rising technology debt slowing releases and innovation

Solution
Application development and optimization, with targeted training and change enablement



Benefits

- 40% ↓ technology debt
- 60% ↓ batch runtime

Ready to Scale Agentic Operations with Insurance SLM?

From prototype to production. From complexity to scale.

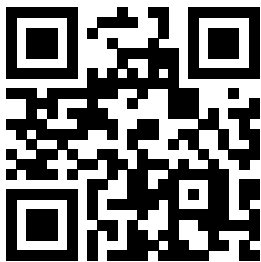
Connect with our insurance transformation experts to explore how Hexaware can help you build, deploy, and sustain production-grade agentic AI across your insurance operations.



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marketing@hexaware.com

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About Hexaware

Hexaware is a global technology and business process services company. Every day, Hexawarians wake up with a singular purpose: to create smiles through great people and technology. With this purpose gaining momentum, we are well on our way to realizing our vision of being the most loved digital transformation partner in the world. We also seek to protect the planet and build a better tomorrow for our customers, employees, partners, investors, and the communities in which we operate.

With offices across the world, we empower enterprises to realize digital transformation at scale and speed by partnering with them to build, transform, run, and optimize their technology and business processes.

Learn more about Hexaware at <https://www.hexaware.com>.