HOW TO BECOME AN AI-FIRST INSURER: A TRANSFORMATION ROADMAP

GLOBAL ECONOMIC RISKS NAVIGATOR

Abstract

Recent breakthroughs in technology are heralding the next industrial revolution, i.e., the era of artificial intelligence or AI. For the insurance industry, generative AI (GenAI) has the potential to revolutionize operations by driving greater efficiency, growth, customer satisfaction, and product innovation. The time has come for insurance organizations to prioritize AI-first transformation across the enterprise to gain competitive advantage over nimble startups and sustain their business. This paper examines the opportunities presented by Gen AI to improve traditional insurance processes. It also provides a roadmap to help insurers become AI-first organizations by tapping into the transformative power of GenAI.

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Introduction

The emergence and growing maturity of artificial intelligence (AI) has spawned the next industrial revolution, bringing with it pervasive economic disruption. While some have compared AI's significance to the discovery of fire, it is clear that AI is poised to transform every industry and occupation.

Historically, the insurance industry has been risk-averse and governed by stringent regulations, making it a cautious player when it comes to investing in and adopting disruptive innovation. However, AI advancements present significant opportunities for insurers to improve customer experience, boost employee productivity, and develop new products and services.

More importantly, the scale of adoption must go beyond the few innovative insurers that are already piloting AI use cases to include all insurance carriers worldwide. This necessitates top-down involvement with board-level oversight of progress. A clear transformation roadmap can help insurance organizations build the right strategy, track progress, map AI investments to business outcomes, and measure value.

Evolution from AI to GenAI

Traditional AI, as it has been developed and deployed in recent years, predominantly focuses on machine learning (ML) where models are trained to predict future trends using past data. Firms in the insurance industry are already using ML algorithms to detect fraudulent claims and classify risks during underwriting. Innovative insurers providing roadside assistance have advanced this further by predicting vehicle breakdowns and deploying rescue teams to the precise location and time, thereby enhancing customer experience.

The arrival of generative AI (GenAI), underpinned by LLMs, presents new opportunities for all industries to harness AI. The initial wave of GenAI has been primarily focused on innovation in foundation models. Insurers have been experimenting with generative AI use cases involving text summarization, language translation, automated code conversion, and coding assistance. The next wave of innovation will involve applications built on these foundation models.

OpenAI has defined five levels of maturity in GenAI. Level 1 encompasses chatbots and conversational AI, Level 2 involves human-like reasoning, and Level 3 pertains to 'agentic AI' where autonomous agents powered by LLMs are used to achieve the desired goals. Level 4 is more focused on innovation and new ideas, invention that would revolutionize AI while Level 5 is Organizational or enterprise level, where AI can do various tasks for the entire organization performing various tasks. 2025 is set to be the year of agentic AI with new products being launched such as AgentForce by Salesforce and Copilot Wave 2 by Microsoft. Similar to how the transmission control protocol/internet protocol (TCP/IP) heralded the Internet revolution, a new Agentic revolution is on the horizon, characterized by communication protocols defined for agent-to-agent communication and inter-agent commerce.

The emergence of the agentic AI era will also transform cloud-based Software-as-a-Service (SaaS) offerings that typically provided usage-based or per-seat pricing models. In future, the industry will shift towards Service-as-a-Software models where pricing is determined by the service provided or the business outcome achieved. For example, a contact center service AI agent will be able to take customer calls, engage in interactions that mimic human conversation, and execute tasks on behalf of the customer. Pricing could be done on number of calls answered or tasks completed by the AI Agent.

Given the current maturity level of technology adoption in the insurance industry, it is imperative for insurers to evolve a phased roadmap that guides their transformation from legacy insurers to digital-first, then cloud-first, followed by AI-augmented, and, finally, to AI-first insurers.

Insurance – Functions, Challenges, and Possibilities

Insurance plays a vital role in the global economy. It serves as a safety net, enabling individuals and businesses to pursue their goals with confidence by mitigating risks. At its core, the insurance industry is responsible for assessing and managing various forms of risk.

Historically, interactions between policyholders and insurers were limited to specific transactions such as policy purchase, policy renewal, and filing claims after an incident. As consumers became accustomed to enhanced digital experiences in other sectors, they were soon demanding a similar level of engagement from their insurance providers. This shift towards the 'retail-ization' of insurance underscores the growing need for insurers to adapt to changing customer expectations.

The industry has evolved significantly since the first insurance policy was written centuries ago. The arrival of digital technologies such as mobile devices, the Internet of Things (IoT), cloud computing, and AI has opened up new possibilities for the sector. These advancements have enabled insurers to reimagine risk protection and customer experience. Features like self-service portals, direct-to-customer offerings, straight-through processing, and mobile apps have become table stakes, with most insurers now providing these capabilities to their customers.

The insurance industry is also inherently data-intensive. Before launching a new product, actuaries conduct extensive financial modeling to determine the appropriate coverage, premiums, and reserves. However, despite being data-rich, the industry currently utilizes lower ratio of its available data. This underutilization presents a significant opportunity for insurers to harness emerging technologies such as AI to improve their operations and offerings. By adopting the AI-first construct, insurers can reimagine every function within the insurance value chain, from product development and marketing to service and operational support.

How to Become an AI-first Insurer

The roadmap to becoming AI-first insurers begins with building an AI center of excellence and ends with fostering a culture of innovation. These two aspects are critical to ensure a successful start to AI journeys and a sustainable future for AI-first transformation.

A. Establish an AI CoE

Considering the transformative potential of AI for businesses, insurers must first create a specialized organizational unit such as a center of excellence (CoE) to effectively develop AI capabilities. Backed by strong leadership commitment, an AI CoE can serve as a strategic differentiator for insurers, enabling them to refresh product offerings, elevate customer experience, and unlock operational efficiencies. Establishing an AI CoE requires a top-down approach and significant financial investment.
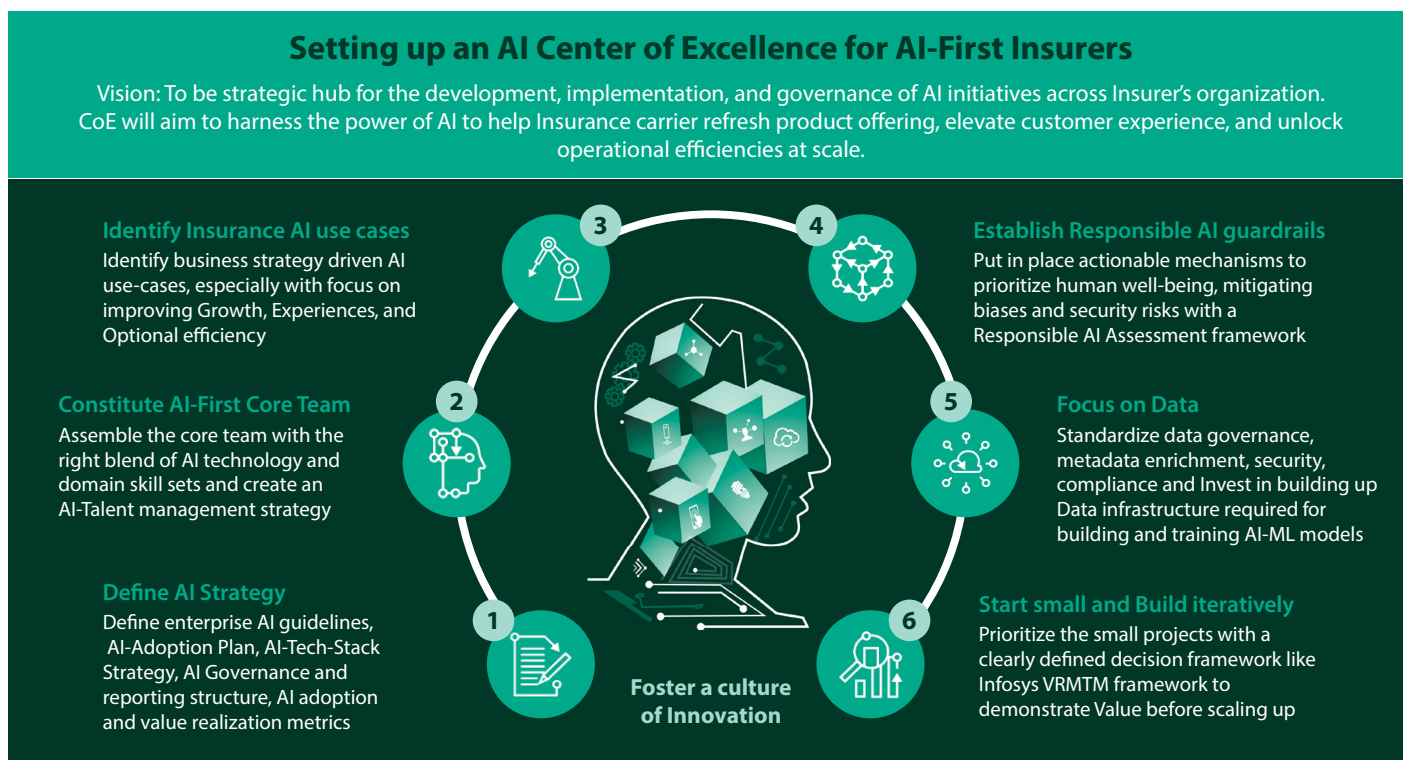

Setting up an AI Center of Excellence for AI-First Insurers

Vision: To be strategic hub for the development, implementation, and governance of AI initiatives across Insurer's organization. CoE will aim to harness the power of AI to help Insurance carrier refresh product offering, elevate customer experience, and unlock operational efficiencies at scale.

3 Identify Insurance AI use cases
Identify business strategy driven AI use-cases, especially with focus on improving Growth, Experiences, and Optional efficiency

4 Establish Responsible AI guardrails
Put in place actionable mechanisms to prioritize human well-being, mitigating biases and security risks with a Responsible AI Assessment framework

2 Constitute AI-First Core Team
Assemble the core team with the right blend of AI technology and domain skill sets and create an AI-Talent management strategy

5 Focus on Data
Standardize data governance, metadata enrichment, security, compliance and Invest in building up Data infrastructure required for building and training AI-ML models

1 Define AI Strategy
Define enterprise AI guidelines, AI-Adoption Plan, AI-Tech-Stack Strategy, AI Governance and reporting structure, AI adoption and value realization metrics

6 Start small and Build iteratively
Prioritize the small projects with a clearly defined decision framework like Infosys VRMTM framework to demonstrate Value before scaling up

Foster a culture of Innovation

Figure 1 – Steps for AI-first insurers to set up an AI CoE

When building their AI CoE, insurers can consider the following phased approach to ensure maximum returns on their investments and faster value realization.

1. Define the AI strategy

The first step in establishing an AI CoE is to develop an AI strategy. This strategy should align with the insurer's overarching business objectives and include specific and measurable goals. Essential inputs for crafting the AI strategy must include key challenges and business goals for the insurer.

2. Create an AI-first core team

The success of an AI CoE hinges on assembling a team with the appropriate skillsets. Forming a core cross-functional team with the following roles will be crucial to ensure the effectiveness of the AI CoE:

- AI CoE lead • AI architect • Insurance SME • Data scientist • AI engineer • Responsible AI (RAI) officer

3. Identify business-driven insurance AI use cases

AI use cases in the insurance industry are not confined to a few business functions. Rather, they extend across the entire insurance value chain. AI has the potential to accelerate growth by helping insurers create new product categories for emerging risks, elevate customer experience through personalized offerings and connected ecosystems, and unlock operational efficiencies that will expedite underwriting and claims adjudication. Here is a closer look at some top insurance AI use cases:

- **Build new products to accelerate growth** – Insurance carriers have traditionally lagged behind other industry segments in terms of product innovation. AI provides a unique opportunity for insurers to create new products and reach previously underserved customer segments. With AI, risks that were earlier considered uninsurable can now be assessed and priced accurately. Some examples of insurance offerings made more feasible through AI-based risk assessments include traditional life insurance products with wellness components, cyber insurance, parametric insurance, and bespoke risk solutions.

- **Create personalized offerings to elevate the customer experience** – AI can help insurers create personalized offerings based on customer profiles, preferences, past behaviors, and purchases. It can give insurers deeper insights into customers, enhancing their ability to cross-sell and up-sell effectively. Further, AI-powered experience management can help insurers revolutionize marketing by making it more sentient apart from delivering a delightful and seamless end-to-end experience for customers.

- **Expedite underwriting and claims adjudication to become more efficient** – Core insurance processes such as new business underwriting and claims involve significant manual intervention. Typically, an underwriter assistant spends more time on non-core activities. These include internal follow-ups for missing information/ documents, manual extraction of data from evidence and documents shared, referring to third-party websites to gather insights, looking up underwriting guidelines, and reviewing prior underwriting cases to identify best practices for risk assessment. AI has the potential to address such process inefficiencies across the insurance value chain and help insurers accelerate the realization of business value.
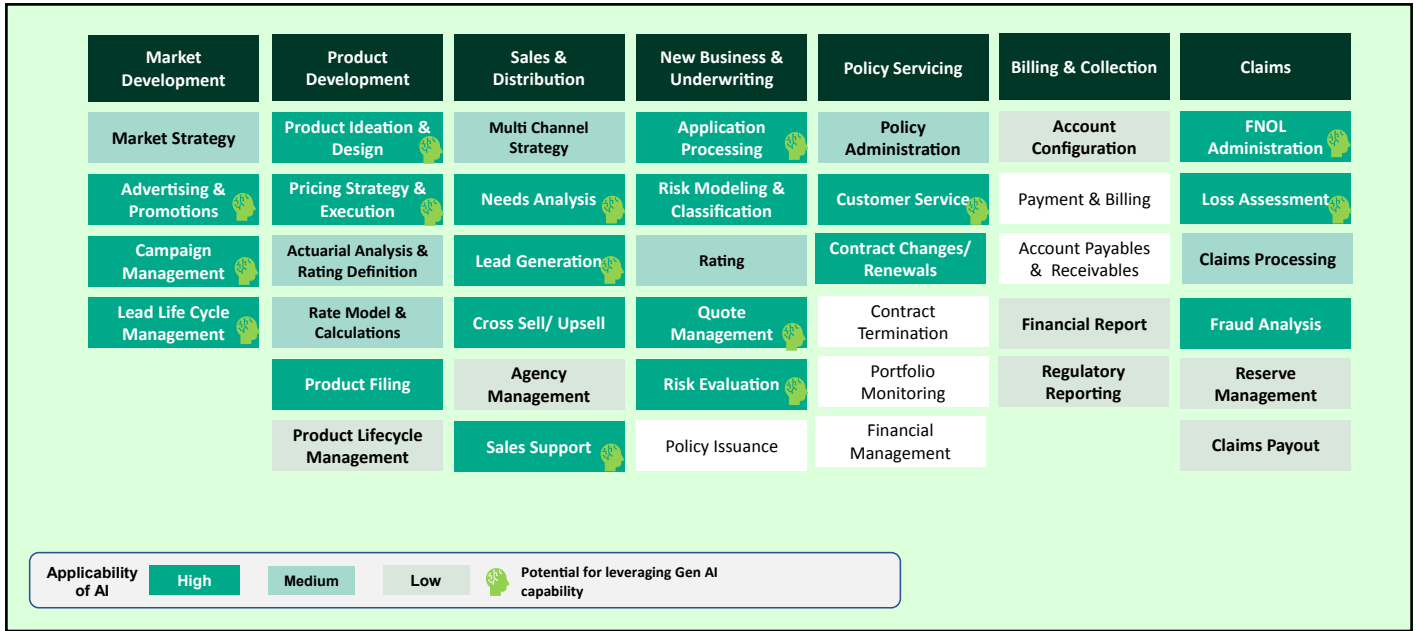
Market Development	Product Development	Sales & Distribution	New Business & Underwriting	Policy Servicing	Billing & Collection	Claims
Market Strategy	Product Ideation & Design	Multi Channel Strategy	Application Processing	Policy Administration	Account Configuration	FNOL Administration
Advertising & Promotions	Pricing Strategy & Execution	Needs Analysis	Risk Modeling & Classification	Customer Service	Payment & Billing	Loss Assessment
Campaign Management	Actuarial Analysis & Rating Definition	Lead Generation	Rating	Contract Changes/ Renewals	Account Payables & Receivables	Claims Processing
Lead Life Cycle Management	Rate Model & Calculations	Cross Sell/ Upsell	Quote Management	Contract Termination	Financial Report	Fraud Analysis
	Product Filing	Agency Management	Risk Evaluation	Portfolio Monitoring	Regulatory Reporting	Reserve Management
	Product Lifecycle Management	Sales Support	Policy Issuance	Financial Management		Claims Payout

Applicability of AI: High | Medium | Low | Potential for leveraging Gen AI capability

Figure 2 – AI applicability across the insurance value chain

4. Establish guardrails for Responsible AI

As AI adoption gains prominence, concerns have arisen over privacy, accountability, transparency, and fairness. Responsible AI is a critical requirement for the insurance industry in order to ensure that algorithms prioritize human well-being, mitigate biases, and adhere to the strict ethical standards.

Enabling responsible AI requires a comprehensive strategy to tackle challenges such as:

- Ensuring fairness and mitigating biases in algorithms
- Promoting transparency and explainability to foster trust
- Safeguarding data privacy
- Bolstering security against malicious attacks
- Establishing clear accountability mechanisms

These measures are crucial for insurers to address bias in risk assessment, ensure fairness in product design, protect sensitive customer data, maintain transparency and explainability around underwriting and claims decisions, prevent unauthorized access to stakeholder information, and maintain human intervention and oversight. By adopting Responsible AI practices, insurers can fully harness the potential of AI while safeguarding their core values and ensuring a sustainable future.
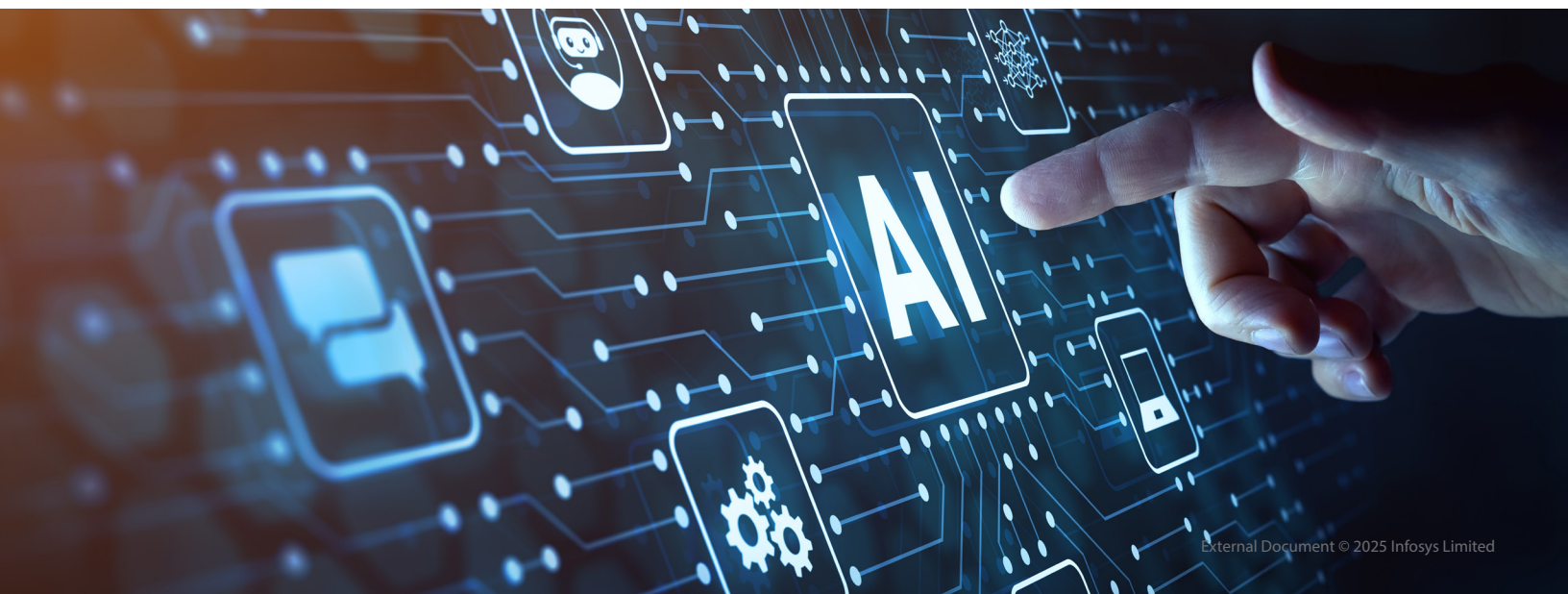
5. Focus on data

Since AI relies heavily on data, insurers must invest in robust data infrastructure. This includes using data lakes, cloud storage, and integration platforms for smooth access and analytics. Furthermore, the implementation of scalable storage solutions and real-time data processing capabilities is crucial for training AI/ML models, which require extensive and comprehensive datasets. The larger and more detailed the dataset, the more efficient and accurate the model will be. Therefore, it is imperative to focus not only on the data infrastructure, but also on the creation and maintenance of high-quality comprehensive datasets.

It is also important to implement strong data governance policies around data quality management, data security, and regulatory compliance. Prioritizing data democratization and collaboration tools is also essential to ensure data accessibility and to foster a collaborative environment for data-driven decision-making.

Here are some considerations for insurers to build a data-first approach:

Data strategy and roadmap

- Long-term data strategy: Develop a long-term data strategy that aligns with the organization's AI vision and goals. This includes setting milestones and establishing key performance indicators (KPIs) for data management initiatives.

- Continuous improvement: Regularly review and update data management practices to incorporate new technologies and methodologies. This ensures that the data infrastructure remains cutting-edge and efficient.

Data collection and integration

- Comprehensive data sources: Identify all available sources from which data should be collected to build comprehensive datasets. These sources include customer interactions, portals servicing external stakeholders such as agents, third-party administrators (TPAs), customers, policy administration system (PAS) transactions and claims history, social media, IoT devices, and third-party data providers.

- Data integration platforms: Use data integration platforms to consolidate data from various sources into a unified data warehouse that serves as a single source of truth, which is essential for accurate AI analytics.

Data governance

- Data quality management: Implement processes to ensure data accuracy, completeness, and consistency. This includes regular data cleaning and validation to maintain high-quality data.

- Data security and privacy: Establish robust security measures to protect sensitive data through use of encryption and access controls. Additionally, establish protocols to ensure compliance with data protection regulations such as General Data Protection Regulation (GDPR) and California Consumer Privacy Act (CCPA).

- Data lineage and auditing: Track the origin and transformation of data throughout its lifecycle and maintain transparency and accountability in data usage.

Data storage and architecture

- Scalable storage solutions: Invest in scalable storage solutions such as cloud or hybrid storage systems that can efficiently manage large volumes of data.

- Data lakes and warehouses: Utilize data lakes to store raw and unstructured data and data warehouses for structured, processed data. This will facilitate flexible data management and retrieval.

- Real-time data processing: Implement real-time data processing capabilities to handle streaming data from IoT devices and other real-time sources.

Data accessibility and collaboration

- Data democratization: Ensure that data is accessible to all relevant stakeholders within the organization by creating role-based data interfaces and dashboards.

- Collaboration tools: Implement collaboration tools that enable data scientists, business analysts, and business users to work together seamlessly and make collaborative and data-driven decisions.

Some insurers may face challenges in using external data or exposing their own data to the cloud for training publicly-available LLM-based models. In such cases, the optimal solution is to create a secure, internal small language model (SLM) and utilize the datasets owned by the organization.

Another approach to maintain the privacy and security of internal data is to implement federated machine learning models. Federated machine learning allows multiple organizations to collaboratively train a machine learning model without sharing their data. This approach ensures data privacy and security by keeping the data within each organization while only sharing the model updates.

6. Start with short-term projects

The transformative impact of AI on culture, efficiency, customer satisfaction, and business can only be realized through tangible evidence. Hence, insurers should start their AI-first journeys with short-term projects that can yield quick and visible results. For instance, AI can be used to extract information from new business submissions and triage the applications based on complexity. This can significantly reduce the time taken to process new business applications.

However, identifying the right short-term AI project from a plethora of promising options can be quite challenging. Moreover, it is difficult for insurers to ensure that these cutting-edge technology projects are executed on time, within budget, and, most importantly, with measurable value.

The Infosys Value Realization Method (VRMTM) framework offers comprehensive approaches to help insurers identify the right projects, thereby maximizing the value derived from their investments in AI-led technology initiatives. For insurance carriers aspiring to become AI-first insurers, these frameworks provide structured pathways, tools, and accelerators to maximize both tangible and strategic value. It establishes a clear link between AI-driven transformation initiatives and tangible/intangible business outcomes.

VRM™ consists of three phases, eight components, and two proprietary tools that can be used during the program lifecycle. The framework ensures that AI projects are strategically aligned to business goals, deliver measurable value, and leverage opportunities for continuous improvement. This helps insurers achieve benefits such as enhanced efficiency, increased customer satisfaction, and a competitive advantage.
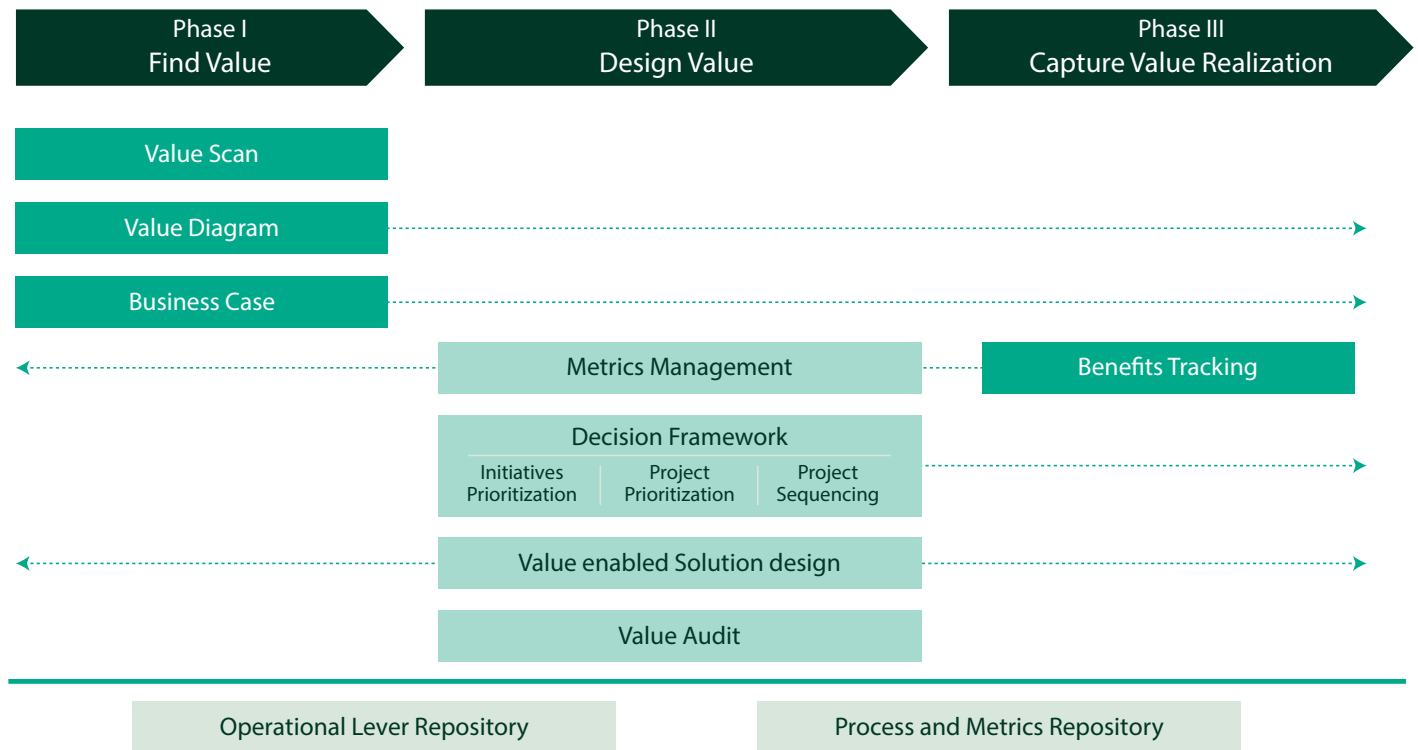
Phase I Find Value	Phase II Design Value	Phase III Capture Value Realization
Value Scan		
Value Diagram		
Business Case		
	Metrics Management	Benefits Tracking
	Decision Framework — Initiatives Prioritization / Project Prioritization / Project Sequencing	
	Value enabled Solution design	
	Value Audit	

Operational Lever Repository   Process and Metrics Repository

Figure 3 – Infosys Value Realization Methodology for choosing the right short-term AI projects

By focusing on the appropriate short-term projects, insurance companies can realize the tangible benefits of AI, demonstrate its value, build trust, and pave the way for more extensive AI-driven transformations in the future. These short-term projects not only provide quick wins but also help establish the necessary infrastructure and expertise for larger AI initiatives. Moreover, these initial projects can serve as pilot programs that embody the 'fail fast, fail cheap' approach and, thereby, help build the right team of AI experts within the company. This iterative approach also enables continuous improvement and adaptation to changing business needs and technological advancements

B. Foster a culture of innovation

Building an AI-first organization requires a profound cultural shift. Insurers must foster an environment that prioritizes continuous learning, experimentation, collaboration, and a high tolerance for risk. They should also embrace failure as an integral part of the innovation process.

By implementing comprehensive training programs and workshops, insurance organizations can equip their employees with the essential skills to effectively engage with AI technologies. Although insurers are traditionally risk-averse in adopting new technologies, transforming into an AI-first insurer necessitates the formation of a cross-functional AI core team that is encouraged to take risks, test ideas in the market, and scale successful initiatives based on their outcomes.

Conclusion

Adopting an AI-first approach in the insurance industry requires a clear vision, significant technological investment, and a strong emphasis on innovation. This cultural shift is a gradual process that demands considerable attention, focus, and a willingness to take risks. Embracing AI will enable insurers to boost efficiency, improve customer experience, and remain competitive in a rapidly changing market. Although challenging, this transition can make them smarter as well as more efficient and customer-centric. By shifting to an AI-first strategy, traditional insurance carriers can stay ahead of new AI-native players and build a more sustainable and successful future.

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With a career spanning the entire digital revolution – from mainframe architectures to the dawn of AI – Mahesh brings unparalleled perspective to the insurance industry. Having spearheaded digital transformation initiatives for multiple carriers, he understands the sector's challenges and opportunities intimately. Now, as a dedicated AI advocate, Mahesh empowers insurers to embrace AI-driven strategies, enabling them to stay ahead in an increasingly competitive landscape.

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