



The Changing Logic of Insurance: From Legacy Operations to Intelligent Platforms

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Abstract

The insurance business is experiencing a major change, shifting from its old ways of doing business based on traditional systems to intelligent business models based on digital technologies and platforms. Traditional insurance systems, which depend on manual processes, disintegrated old infrastructures, and product-focused strategies, can hardly fulfil the expectations of clients in rapidly changing markets. This paper studies the evolution of insurance which consists in the transition from traditional operating models to intelligent platforms relying on cloud computing, artificial intelligence, automation, big data analytics, and InsurTech innovations. It analyses how digital transformation is changing the field of insurance underwriting, claims processing, customer relations, risk assessment, and decision-making processes. The research shows the emergence of platform ecosystems that ensure collaboration between insurers, software developers, brokers, and clients, allowing them to provide personalized, effective, and data-driven solutions. The paper presents the prospects for development in the insurance sector that can open up new possibilities for innovations and sustained development of the industry.

Key Words: Insurance digital transformation; Intelligent platforms; InsurTech; Artificial intelligence; Legacy systems

1. Introduction

The insurance sector has always relied on old-fashioned systems based on risk pooling, actuarial implements, policy management (administration), and claims assistance. Although these systems provided proper operation in the past, now, they do

not meet the demands of the emerging digital economy where the consumer desires very quick services and customization and what matters the most for them now is digital engagement through various channels (Njegomir et al., 2021).

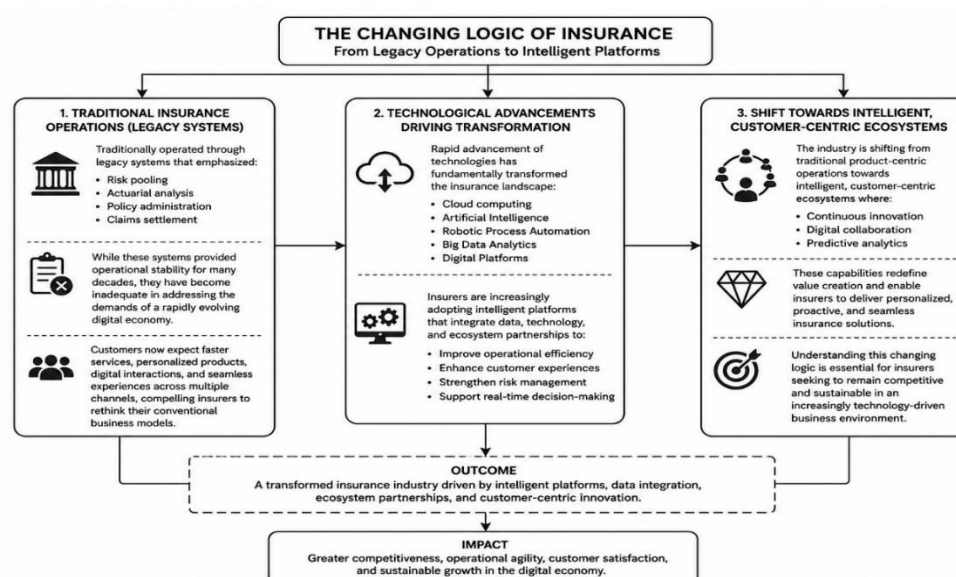


Figure 1: Framework illustrating the changing logic of insurance: From legacy operations to intelligent platforms

Source: Developed by the author based on William

and Adebayo (2025), Kondappan (2025), and Njegomir et al. (2021).

Rapid technological advancements in cloud computing, artificial intelligence, robotic process automation, big data analytics, and digital platforms have changed the whole insurance business. Instead of digitizing the current processes of doing business, insurance companies are searching for intelligent platforms which can combine the necessary data and technology and involve ecosystem partnerships in order to make their operations more efficient, improve customer experiences, improve risk management, and help make the right decisions (Kondappan, 2025).

As a result, the insurance companies are moving from traditional product-based operations to intelligent and customer-oriented ecosystems in which value is created through continuous innovation and digital cooperation (William & Adebayo, 2025).

1.1 Aim and Objectives

The objective of this research is to investigate how the insurance industry has been transformed from traditional legacy operations to intelligent platform ecosystems as well as analyse how digital technology is changing business models, risk management and value creation in the insurance industry.

Objectives

1. To examine the fundamental logic and characteristics of traditional insurance operations.
2. To analyse the key drivers responsible for the

digital transformation of the insurance industry.

3. To explore the transition from legacy systems to intelligent platform-based insurance ecosystems.
4. To evaluate the strategic implications of intelligent platforms for insurers and future insurance business models.

2. The Logic of Traditional Insurance

Insurance is believed to have originated in early periods of civilizations like Babylon, Rome and China, where traders came up with ideas for risk sharing to cut losses faced because of different events, including trade, robbery, accidents, and natural disasters. The original ideas about insurance progressed to complete systems of insurance. The modern insurance industry appeared in the 17th century after the fire catastrophe in London in 1666, which led to the beginning of the growth of insurance companies and creation of marine and fire insurance (Vaughan & Vaughan, 2014).

The classical insurance model was based on the principles of risk sharing, collecting fees, and paying claims for losses incurred. During the operation of insurance companies, actuaries were used to assess risks and rates, giving rise to new system features. With the advent of technology in the insurance industry, insurance agencies have been able to implement old information systems in claims processing, policy marketing, customer relations, etc. (Sunday et al., 2025).

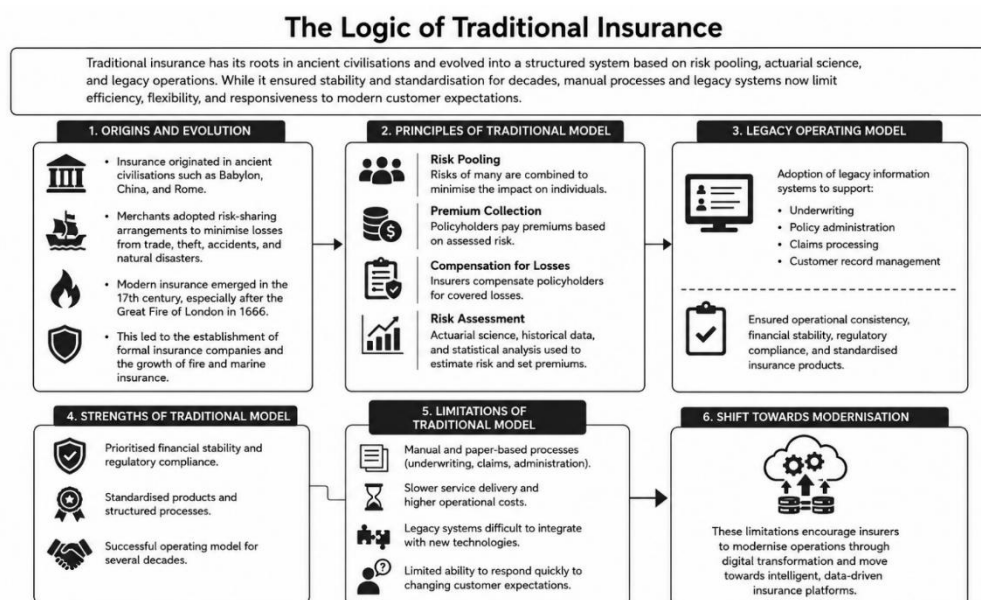


Figure 2: The logic of traditional insurance: Evolution, operating principles, and transition towards digital transformation

Source: Developed by the author based on Vaughan and Vaughan (2014), Sunday et al. (2025), Samson et al. (2025), and Malifete et al. (2026).

This model has been effective for many years because it focuses on the financial stability, legal compliance, and standardised insurance product functioning.

However, most insurance processes, such as underwriting or claim handling, continue to be performed manually and on paper, leading to slow service provision and high operating costs. This reliance on older systems has made it hard to introduce new technologies, as well as react to

changes in the clients' expectations (Samson et al., 2025). All these shortcomings led to companies' desire to update their operations via digital transformation and to make a shift from traditional outdated operations to intelligent data-driven insurance systems (Malifete et al., 2026).

3. Why the Logic of Insurance Is Changing

The evolution of technology, customer expectations, and competitive forces is giving rise to new models of insurance. Companies that relied heavily on traditional insurance practices, including manual processes and outdated technologies, cannot keep up with the demand for quick, customized, and digital services. Therefore, there is a shift towards data-driven operating frameworks that support operational efficiency, customer service, and innovation (Sosa & Sosa, 2025).

In turn, the emergence of technological platforms has had an important effect on customers' expectations. Today's consumers demand digital solutions that provide them with quick implementation and online services. As a result, the role of digital insurance platforms is quite relevant to the customer decision-making process, which is of great importance in the modern digital climate (Baranauskas & Raišienė, 2021).

In the operational area, insurance companies are becoming more and more involved in the use of technologies like Robotic Process Automation (RPA), data analysis, and artificial intelligence to be able to automate monotonous processes, cut down costs, make smarter decisions, and detect fraud more

efficiently. The emergence of these technologies leads to the shift from traditional operations based on process to modern data-based operations allowing the insurance industry to provide more flexibility and better services (Delagrammatikas et al., 2025).

Thus, the insurance industry is transforming from being product-oriented to being based on intelligent networks using advanced technologies, data management, and partnership with various companies (Sosa & Sosa, 2025).

4. From Digitisation to Intelligent Platforms

The insurance industry has evolved from just digitizing paper procedures to now incorporating intelligent platforms that use cutting-edge digital technology in their main business practices. Initially, digitization was about changing manual records to electronic means to provide improved efficiency. As digital technology continued to develop, insurance companies started to use cloud computing, intelligent automation, and data-driven architectures in order to create more flexible, scalable, and customer-oriented business models (Anderson, & William, 2025).

The introduction of intelligent platforms helped insurers utilize such technologies as artificial intelligence, automation, cloud technologies, and advanced analytics for creating efficient underwriting, claims processing, fraud detection, and customer service. Instead of simply digitizing current processes, these platforms can provide for instant solutions, predictive risk assessment, and customized insurance (Goolla, 2025).

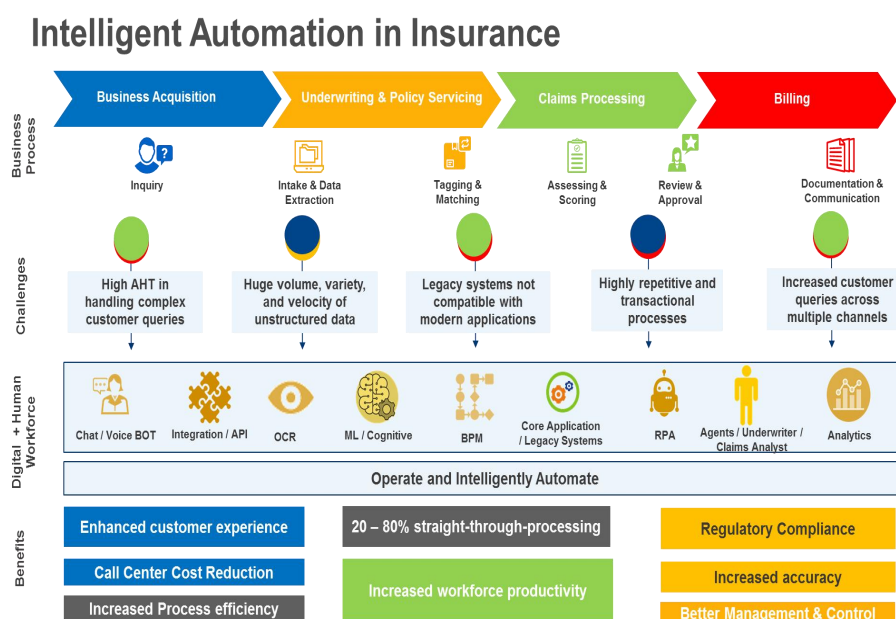


Figure 3: The Digital Workforce in Insurance Operations

Source: <https://hexaware.com/blogs/intelligent-process-automation-for-insurance-digital-transformation/>

The advances in cloud migration, microservices architecture, and safe digital technological infrastructure have increased the rate of this

evolution because they have improved systems interoperability, scalability, and agility of organizations. These technologies help life insurers

in replacing legacy systems, efficiently integrating new technologies, and rapidly launching new insurance products/services (Anderson & William, 2025; Pandiri et al., 2023).

As a result, intelligent platforms signify the transition from operation using the provided technologies toward data-enabled ecosystems of insurance, which embrace the introduction of intelligent automation that provides for constant innovations and resiliency in operations as well as sustainable digital transformation throughout the whole process of creating insurance products/services (Kuzior & Sira, 2025; Pandiri et al., 2023).

5. Redefining the Insurance Value Proposition

The insurance industry is changing its value proposition and changing from simply protecting customers financially after an accident to providing continuous, proactive, and customer-centric service throughout the customer journey. Historically, insurance companies were concerned only about issuing policies and paying damages, while modern insurers use digital means to create value with the help of digital communication tools, personalised products, speedy processes, and data-driven decisions (Yaneva, 2022).

Enterprise modernization and digital infrastructure have allowed insurers to remodel their operational model on the base of cloud technologies, agile development approaches, and intelligent digital platforms. These alterations contribute to better operational efficiency, fast product innovation, and even better customer experience by providing unconnected and related insurance services across several digital channels (Kumar, 2026; Rajamani, 2023).

Artificial intelligence has taken the insurance value proposition to the new level because it opened possibilities for such practices as automated claims processing, fraud detection, prediction of risks, and creating personalised customer service. The end-to-end transformation of claims processing through digital tools accelerates the process of decision-

making, improves accuracy, and elevates customer satisfaction at the same time helping to reduce operational costs (Adebowale, 2026).

As a result, people no longer think of insurance solely as a way to recover their losses but as an advanced, technology-supported service that continually provides benefits through prevention, forecasting, customised solutions, and operational efficiency (Drahokup, 2026; Kandace, 2026).

6. The New Logic of Risk, Data, and Decision-Making

The insurance sector gradually shifts from a conventional risk management model that relies on past experience and intermittent evaluation of the current situation to a data-oriented approach that allows for constant risk measure and instant decision-making processes. The progress in technology has provided insurance companies with the ability to gather and analyse enormous amounts of processed and unprocessed information from various sources, thus increasing the efficiency of underwriting, pricing, fraud prevention, and claims handling processes (Vazhenova, 2024).

The emergence of InsurTech has allowed for a total change of the insurance value chain through the use of AI technology, big data analysis and cloud computing in core business activity. These technologies allow insurers to make quick decisions based on solid facts, boost product customisation, and effectively meet customer requirements while being within the frame of the compliance rules (Koneva & Avdeeva, 2026).

Cloud-based modernization enhances the process of making data-based decisions by substituting outdated legacy systems for better digital platforms, which enables more scalability, interoperability, and access to real-time data. This allows insurance operators to be more agile in their work and foster communication across various departments, which further facilitates making important decisions (Dorairaj, 2026).

Table 1: Evolution from Traditional to Data-Driven Insurance Decision-Making

Aspect	Traditional Insurance	Intelligent Insurance
Risk Assessment	Historical and periodic	Continuous and predictive
Data Source	Internal policy and claims data	Big data, IoT, cloud, external data, AI
Decision-Making	Manual and rule-based	AI-driven and real-time
Underwriting	Standardised risk evaluation	Dynamic and personalised underwriting
Claims Management	Reactive and paper-based	Automated and intelligent processing
Customer Experience	Generic services	Personalised and data-driven services

Source: Developed by the author based on Narayanan (2025), Liang and Zheng (2025), and Dorairaj (2026).

emphasis on data, allowing operators to shift from reactive compensation to predictive risk management (Narayanan, 2025; Liang & Zheng, 2025).

As a result, this new process of insurance lays more

7. Intelligent Platforms as Business Ecosystems

Intelligent platforms have been changing the way insurance business operates by converting previously separate companies into connected ecosystems. Here insurers, technology developers, brokers, and stations cooperate in developing unified platforms. These platforms employ cloud computing, microservices, AI, and data analytics to facilitate information sharing, speed up innovations, and improve the delivery of services through the entire insurance value chain (Uppala, 2025).

Using a platform-based ecosystem allows insurers to cooperate with InsurTech organizations and other dynamic environment (Yang et al., 2025).

partners when creating products and making their businesses more efficient by avoiding threats, thanks to enhanced communication and collaboration (Stricker et al., 2023).

In addition, smart ecosystems help insurance companies deal with difficult problems like climate change since they bring together many different data sources, predictive analytics, and collaborative decision-making practices. By doing so, insurers are able to assess the altering risks more accurately and come up with new risk management solutions while also making the organizations more resilient to challenges arising in a more

Table 2: Adoption of Intelligent Platform Technologies in the Insurance Industry

Technology / Platform Component	Insurance Organisations Using Technology (%)
Cloud Computing	86
Artificial Intelligence	72
Big Data Analytics	69
API-Based Integration	65
Microservices Architecture	58
Digital Customer Platforms	76
InsurTech Partnerships	54

Source: Compiled by the author based on Capgemini World Property and Casualty Insurance Report (2024), Deloitte Global Insurance Outlook (2025), and supported by Uppala (2025), Stricker et al. (2023), and Yang et al. (2025).

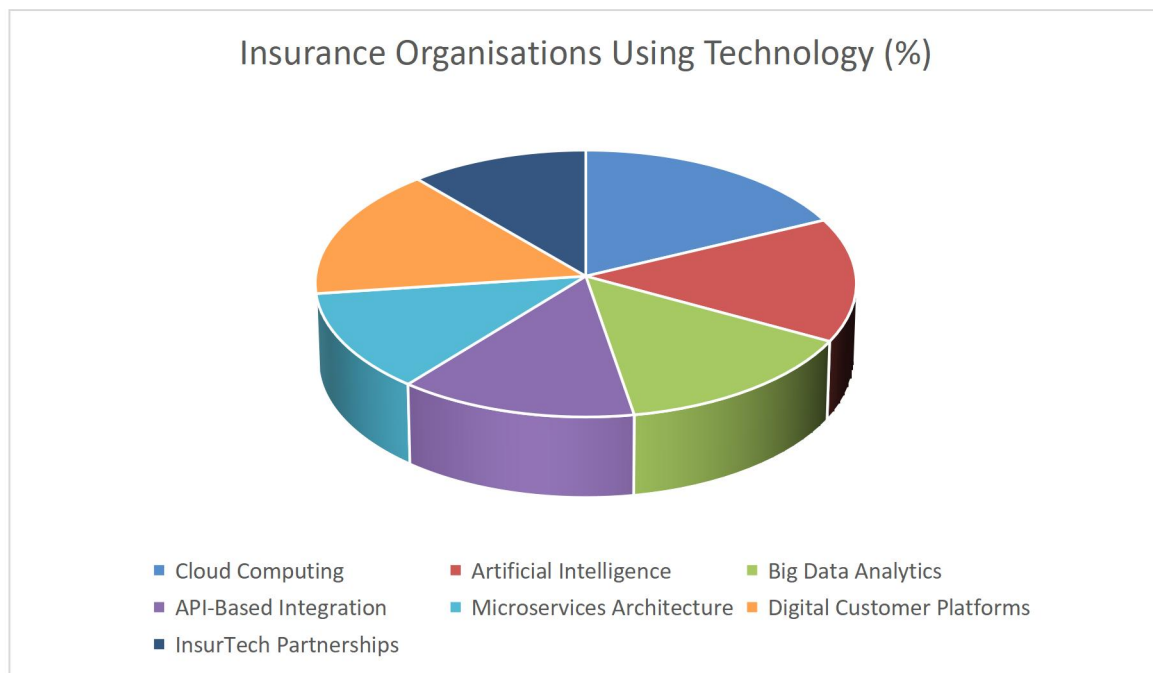


Figure 4: Adoption of Intelligent Platform Technologies in the Insurance Industry

Hence, smart platforms have transformed insurance into a merged digital ecosystem that creates value through the inclusion of technology, data, and a

variety of strategic alliances resulting in enhanced customer satisfaction and improved sustainability of businesses (Uppala, 2025; Stricker et al., 2023).

8. Strategic Implications for Insurers

Transforming from legacy operations to intelligent platforms means that insurers should reconsider their long-term business strategies, operating models, and use of technologies. Digitalization is not only about process automation anymore; it has turned into a business necessity aimed at increasing efficiency, improving customer experience, and securing market competitiveness (Firley et al., 2026).

To be able to compete, insurers need to upgrade their legacy systems adopting cloud computing, intelligent automation, and agile digital architecture. The employment of middleware allows companies to connect their legacy systems to modern policy management systems increasing interoperability and simplifying processes (Dhanekulla, 2024).

The competitive environment in the insurance sector has changed due to technological disruption as insurers have begun to implement data-driven decision-making, tailor their offerings to customers' needs, and cooperate with InsurTech companies. The use of these strategies will provide firms with agility, speed of implementation of their products, and enhance their risk management capabilities at the same time, which means that insurers will gain competitive edge within the modern digital insurance sphere (Cappiello, 2020; Firley et al., 2026).

Thus, the success of insurers in the future will depend on their ability to successfully combine technological innovation with operational transformation and provide their customers with intelligent, efficient, and customer-oriented insurance services despite changing market conditions (Firley et al., 2026).

9. Future Research Directions

Future studies must look into the long-term effects of using artificial intelligence, generative AI, blockchain technology, the Internet of Things, and digital twins on intelligent insurance platforms. Comparative studies between mature and developing insurance markets may yield a more profound understanding of the challenges insurance companies face from adopting computer technology into their operations. Additionally, ethical issues related to the use of AI, explainable algorithms, cybersecurity and data protection, governmental regulations, and consumer trust in intelligent insurance ecosystems should be examined as well. Finally, empirical research focusing on the effect intelligence platforms have on performance within organizations, clients' satisfaction, resiliency in operations, and innovations in sustainable insurance will bring a major contribution to the area of insurance research (William & Adebayo, 2025; Kondappan, 2025).

10. Conclusion

The insurance sector is undergoing a major change as companies abandon antiquated systems in favor of intelligent, technologically advanced systems. The implementation of digital tools such as cloud computing, artificial intelligence, automation, and sophisticated analytics has ushered in a new way for insurers to manage risk assessment, monitor customer interactions, claim processing, and create value for companies. Owing to this evolution, the industry now concentrates on developing proactive, customer-centric, and data-driven insurance ecosystems instead of reactive compensation packages (William & Adebayo, 2025).

The introduction of intelligent systems has not only boosted operational efficiency but has allowed for instant decision-making, enhanced partnership and collaboration between companies, and improved customer service. At the same time, companies should improve their approach towards their legacy modernization process as well as cybersecurity, compliance, and workforce transformation (Kondappan, 2025).

Overall, the new logic of insurance is not only but also a strategic change in the way the industry works. Companies that manage to combine intelligent systems with innovative strategies will achieve sustainability, efficiency, and competitiveness in the evolving digital landscape (Njegomir et al., 2021).

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