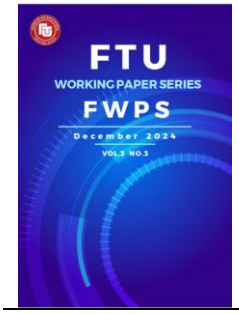

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ỨNG DỤNG CÔNG NGHỆ BẢO HIỂM TẠI LEMONADE INSURANCE VÀ HÀM Ý CHO CÁC CÔNG TY BẢO HIỂM VIỆT NAM

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Tóm tắt

Bài viết này nghiên cứu tác động biến đổi của InsurTech đối với ngành bảo hiểm, tập trung vào Lemonade Insurance Company như một nghiên cứu điển hình. Mục tiêu của bài viết là đưa ra các khuyến nghị chiến lược cho các công ty bảo hiểm Việt Nam khi bắt đầu áp dụng InsurTech. Nghiên cứu phân tích mô hình kinh doanh sáng tạo của Lemonade, làm nổi bật sự khác biệt so với các thực tiễn bảo hiểm truyền thống và những tác động đối với ngành. Bài viết cũng đánh giá tình hình hiện tại của thị trường bảo hiểm Việt Nam để xác định khả năng áp dụng các mô hình tương tự. Các phát hiện chính bao gồm sự cần thiết của lãnh đạo có tầm nhìn và phát triển lực lượng lao động để thúc đẩy đổi mới công nghệ, triển khai chatbot dựa trên AI để cải thiện tương tác khách hàng và tối ưu hóa quy trình, cùng với việc sử dụng blockchain, đặc biệt trong bảo hiểm nông nghiệp, để khai thác các cơ hội kinh tế của Việt Nam. Những khuyến nghị này giải quyết các thách thức lớn trong thị trường bảo hiểm Việt Nam, như hạn chế về quy định, thiếu hụt

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kỹ năng và tỷ lệ thâm nhập bảo hiểm thấp, mở đường cho sự phát triển và chuyển đổi số trong tương lai của ngành.

Từ khóa: công nghệ bảo hiểm, bảo hiểm, chuyển đổi số, Việt Nam

INSURTECH IMPLEMENTATION AT LEMONADE INSURANCE AND IMPLICATIONS FOR VIETNAM'S INSURANCE COMPANIES

Abstract

This paper examines the transformative impact of InsurTech on the insurance industry, focusing on Lemonade Insurance Company as a case study. It aims to provide strategic recommendations for Vietnamese insurance companies beginning to adopt InsurTech. The study analyzes Lemonade's innovative business model, highlighting its departure from traditional insurance practices and the implications for the industry. It also assesses the current state of Vietnam's insurance market to determine the feasibility of adopting similar models. Key findings include the necessity for visionary leadership and workforce development to foster technological innovation, implementing AI-driven chatbots to enhance customer interactions and streamline processes, and using blockchain, especially in agricultural insurance, to leverage Vietnam's economic opportunities. These recommendations address significant challenges in the Vietnamese insurance market, such as regulatory constraints, skill shortages, and low insurance penetration rates, setting the stage for future growth and digital transformation in the sector.

Keywords: InsurTech, insurance, digital transformation, Vietnam

1. Introduction

In recent decades, the global insurance industry has undergone significant transformation due to rapid technological advancements, leading to the rise of InsurTech. These innovations have profoundly impacted the sector by improving customer experiences, increasing operational efficiency, and promoting personalized services (*KPMG, 2019*).

Vietnam, a Southeast Asian nation recognized for its dynamic insurance market, has seen notable growth in the InsurTech field (*Thanh, 2024a*). According to the Vietnam Association of Economic Sciences, the industry was particularly active in 2022, achieving an estimated total insurance premium income of approximately US$10.4 billion, representing a 15 percent increase from 2021. This positive trend can be attributed to several factors, including the financial stability of insurance companies, effective claims processing, enhanced customer service, and the diverse range of available insurance products. Moreover, the demand for insurance has been rising, partly due to increased public awareness of its importance in the wake of the pandemic. The new Law on Insurance has also strengthened regulations related to the sale and business operations of insurance products (*Tran, 2023*). Additionally, the Vietnamese government aims to have 18 percent of the population covered by life insurance by 2030, as outlined in the Vietnam Insurance Market Development Strategy, further encouraging the adoption of insurance products (*Tran, 2023*).

To capitalize on favorable conditions, Vietnam's insurance industry can leverage advanced technologies like AI, big data analytics, and blockchain to enhance risk assessment, improve customer service, and ensure secure transactions. By embracing these technologies, Vietnamese insurers can effectively compete in the digital landscape and better meet customer needs.

Considering the preceding, this paper attempts to make two significant contributions:

(i) To understand the Case study Analysis of Lemonade Insurance company
(ii) To give recommendations for Vietnamese insurance companies.

To meet these objectives, it first presents an overview of InsurTech and its impacts, examines Lemonade's context and InsurTech implementations, and analyzes Vietnam's current InsurTech landscape, concluding with suggestions for Vietnamese insurers to innovate and grow.

2. Theoretical framework

In today's increasingly uncertain and dynamic world, insurance's economic and social significance is undeniable and continues to grow. Insurance serves as a vital risk transfer mechanism, where individuals or entities obtain coverage in exchange for regular premium payments (*UNDRR, 2009*).

In the early stages, solutions specifically designed for the insurance industry were often termed "InsurTech" (*Chuang et al., 2016*), and this term was widely recognized as the "insurance-specific branch of FinTech" (*PwC, 2016*). However, by building on earlier research and integrating these insights, Stoeckli et al. (*2018*) have developed a more nuanced definition of InsurTech. They categorize InsurTech as a subset of FinTech and define it as a phenomenon involving innovations by traditional or non-traditional market participants who utilize information technology to develop solutions uniquely designed for the insurance sector. Nonetheless, Xu and Zweifel (*2020*) argued that the definition proposed by Stoeckli et al. (*2018*) blurs the line between general corporate IT infrastructure (e.g., ERP Systems, CRM Systems, Office Automation Systems…) and InsurTech, as the former includes aspects that extend beyond the typical scope of InsurTech as recognized in both academia and industry (*IRDAI, 2018*). They emphasized that InsurTech solutions should be distinctly customer-oriented or data-driven. To provide greater clarity, Xu and Zweifel (*2020*) redefined InsurTech as a phenomenon where traditional or non-traditional market players, focused on reducing costs, enhancing efficiency, or offering greater value to consumers, utilize information technology to deliver data-driven or customer-centric solutions that enhance various aspects of the insurance business. This includes areas such as marketing and distribution, risk assessment and underwriting, claims processing, value-added services, and innovations in insurance products, digital operations, partnerships, and business models.

Despite the significant advancements InsurTech has brought to the insurance industry, several issues have emerged, particularly in the variability of innovation quality and the

superficial adoption of InsurTech (*Xu & Zweifel, 2020*). The quality of InsurTech solutions varies widely, with some products being nearly identical, highlighting the need for greater innovation and differentiation. Additionally, many companies claim to integrate InsurTech but merely use digital platforms to sell insurance without fully leveraging InsurTech's capabilities, often relying on standard technologies with limited potential for future growth (*McKinsey, 2017*; *KPMG, 2019*). For instance, some insurance companies use digital platforms to offer policy purchases and claims processing but do not utilize advanced InsurTech features like AI-driven risk assessment or personalized insurance solutions. These challenges, combined with the diversity of InsurTech innovations and their applications, as well as the scarcity of relevant data due to the emerging nature of InsurTech (*Gallagher, 2024*), make it difficult to establish a robust framework for evaluating InsurTech innovations.

According to Xu and Zweifel (*2020*), the key to evaluating InsurTech lies in identifying the indicators that best capture innovation in the insurance sector and determining their relative importance in assessments. Although no studies directly address InsurTech innovation attributes, insights can be drawn from various sources like news and scholarly articles. Drawing on curated information and several rounds of discussions, Xu and Zweifel (*2020*) developed an evaluation model comprising 42 indicators that could be identified, to be later aggregated into 9 subdimensions, which in turn pertain to the three main dimensions (i) management and operations, (ii) level of technology, and (iii) user experience as follows:

Table 1: Weights and rankings in the evaluation of InsurTech innovations

Level I [Weight within Level I]	**Level II [Weight within Level II]**	**Rank**	**Level III: Indicators**	**Weight within Level II**	**Weight within Level I**	**Rank in Level I**
Management and operations [0.3333]	Developer attributes [0.2500]	3	Qualification of founders of the company	0.2497	0.0207	21
			Comprehensive strength of the management team	0.4026	0.0336	11
			Brand recognition	0.0504	0.0042	38
			Amount of equity in financing	0.0387	0.0032	42
			Operating ability and potential for growth	0.0424	0.0035	41
			Number of insurance	0.0737	0.0061	32

Level I [Weight within Level I]	Level II [Weight within Level II]	Rank	Level III: Indicators	Weight within Level II	Weight within Level I	Rank in Level I
			professionals			
			Number of technical or Internet experts	0.1442	0.0120	24
	Market attributes [0.2500]	3	Potential customer base	0.6700	0.0558	3
			Number of similar products/ substitutes	0.0648	0.0054	34
			Frequency of product's usage by users	0.0964	0.0080	29
			Policy and regulatory risks	0.1688	0.0141	23
	Product and service attributes [0.2500]	3	R&D investment of the product	0.1040	0.0087	28
			Flexibility in the product information dimension	0.0550	0.0046	35
			Product update rate	0.2383	0.0199	22
			Stability of product performance	0.2738	0.0228	16
			After-sales services	0.2738	0.0228	16
			Value-added services	0.0550	0.0046	35
	Cooperation and marketing [0.2500]	3	Cooperation with other companies/ platforms	0.1052	0.0088	27
			Compatibility with other companies/ platforms	0.4352	0.0363	10
			Innovation of marketing model	0.3925	0.0327	13
			Advertising campaign	0.0671	0.0056	33
Level of	Security	9	Privacy protection	1.000	0.0305	14

Level I [Weight within Level I]	Level II [Weight within Level II]	Rank	Level III: Indicators	Weight within Level II	Weight within Level I	Rank in Level I
technology [0.3333]	[0.0914]					
User experience [0.3333]	Level of insurance technology [0.2176]	8	Artificial Intelligence	0.0904	0.0066	31
			Big data	0.3228	0.0234	15
			Blockchain	0.0564	0.0041	39
			Internet of Things	0.0628	0.0046	35
			Cloud computing	0.1030	0.0075	30
			Data modeling capability	0.3083	0.0224	19
			Other technologies	0.0564	0.0041	39
	Innovation	2	Industry innovation	0.4286	0.0987	1
			Forward-looking insurance products	0.4286	0.0987	1
			Possess intellectual property/ patent of technology used in the product	0.1429	0.0329	12
	Interface design [0.2500]	3	Clear features	0.2500	0.0208	20
			Artistic icon and color	0.1250	0.0104	25
			Easily navigable interface	0.1250	0.0104	25
			Easy to understand and use	0.5000	0.0417	9
	Applicability [0.7500]	1	Delivery of target services	0.1818	0.0455	4
			Matching with demand	0.1818	0.0455	4
			Timeliness of providing services	0.1818	0.0455	4
			Convenience of	0.0909	0.0227	18

Level I [Weight within Level I]	Level II [Weight within Level II]	Rank	Level III: Indicators	Weight within Level II	Weight within Level I	Rank in Level I
			communicating with the back-end			
			Improved efficiency of corporate clients	0.1818	0.0455	4
			Reduced cost of corporate clients	0.1818	0.0455	4

Source: Xu and Zweifel (2020)

According to Table 1, Xu and Zweifel (*2020*) emphasized two key lessons to be acquired. For InsurTech start-ups and insurance company management, it is essential to prioritize the ranking of Level III indicators, with a particular focus on "Industry innovation" and "Forward-looking insurance products", which together account for about 10% of the overall weight within the "Level of technology". Concentrating on state-of-the-art technology implementation can be beneficial (*KPMG, 2019*), though it is equally important to allocate balanced attention across all four subdimensions within "Management and operations", each weighted at 25%. Companies that prioritize technological leadership might consider temporarily deprioritizing security issues, while those emphasizing user experience should focus on enhancing product applicability.

For stakeholders evaluating InsurTech companies—such as consumers, FinTech investors, and regulators—the framework provides a comprehensive measure of a company's overall strength, enabling efficient comparison among different InsurTech firms. Consumers can leverage this framework to select trustworthy service providers, while investors can use it to identify corporate strengths and weaknesses. However, if one of the three Level I dimensions is neglected, further scrutiny is recommended, as a company that heavily focuses on "Industry innovation" and "Forward-looking insurance products" might risk overlooking other critical areas, potentially affecting its overall performance.

3. Case study analysis: Lemonade's InsurTech implementation

3.1. Introduction to Lemonade Insurance

3.3.1. History of Lemonade

Founded in 2015 by Daniel Schreiber and Shai Wininger, Lemonade launched as the world's first peer-to-peer (P2P) insurance company, debuting its renters insurance in New York in 2016. The company quickly expanded, going public in July 2020 and extending its services from the

USA to Europe. In November 2021, Lemonade announced its acquisition of Metromile, a pay-per-mile auto insurance company, completing the deal in July 2022.

3.3.2. Mission

The company's mission was to reimagine insurance as a social good rather than a necessary evil, leveraging technology to create a more efficient and millennial-friendly experience. Key components of this mission include:

- *Customer-centricity*: Lemonade prioritizes customer needs, aiming to enhance satisfaction and achieving a Net Promoter Score (NPS) significantly above the industry average.
- *Transparency:* The company is dedicated to committing to openness regarding pricing and claims processes, with a business model that allocates a larger share of revenue to payouts compared to traditional insurers.
- *Social good:* Through its Giveback program, Lemonade donates unclaimed premiums to charities chosen by its customers, reinforcing its commitment to positively impacting society. Since its inception, the company has contributed millions to various charitable causes.

3.3.3. How Lemonade works

Lemonade operates on a unique model combining AI, behavioral economics, and social responsibility. Unlike competitors, Lemonade is a licensed carrier, managing everything from policy writing to claims, which enables faster claim payments. The company takes a flat fee from premiums and uses the rest for claims and reinsurance, reducing conflicts of interest.

One of Lemonade's most distinctive features is its Giveback program. Any unclaimed premiums at the end of the year are donated to charities chosen by policyholders (*Schreiber, 2019*). This innovative approach aligns the company's interests with those of its customers and reinforces its commitment to social good. As a socially responsible company, Lemonade has made significant commitments to ethical business practices. In 2016, it became a Certified B Corporation, demonstrating its dedication to social and environmental performance (*Lemonade Inc., 2021*).

Lemonade's initial product offering was renters insurance, launched in September 2016 in New York. This choice of starting product allowed the company to target a younger, tech-savvy demographic often overlooked by traditional insurers. The success of this approach paved the way for Lemonade's rapid expansion into other insurance products, including pet, homeowners, car, and life insurance.

Lemonade's use of technology sets it apart in the insurance industry. AI Jim and AI Maya, the company's AI chatbots, handle everything from purchasing policies to processing claims, often in seconds. Thanks to these technologies, Lemonade has a remarkable milestone by settling an insurance claim in just two seconds in the UK. These advanced algorithms also help identify potential fraudulent claims more effectively than traditional methods (*Schreiber, 2019*). This

technological edge allows Lemonade to operate with greater efficiency and provide a smoother customer experience (*Wininger, 2017*).

3.4. Lemonade's context before InsurTech implementation

With their backgrounds in technology, Lemonade's co-founders, Daniel Schreiber and Shai Wininger, envisioned the company as a leading InsurTech from the start. Before Lemonade disrupted the insurance industry, it was dominated by traditional practices, slow service, and opaque pricing (*McKinsey, 2017*). Schreiber's experience as President of Powermat Technologies and Wininger's success as a co-founder of Fiverr provided them with the expertise to leverage technology, streamline processes, and revolutionize the insurance experience with a tech-driven approach.

The founders' tech backgrounds influenced Lemonade's approach in several key ways:

- *Digital-first strategy*: Unlike traditional insurers slowly adapting to digital, Lemonade was designed as a digital-native company, ensuring a seamless online experience (*Carretta, 2022*).
- *AI integration*: The founders' understanding of AI's potential led to the early integration of AI chatbots for customer service and claims processing, a novel approach in the insurance industry at the time (*Schreiber, 2019*).
- *Data-driven decision-making*: Drawing from their tech industry experience, Schreiber and Wininger used big data and analytics for accurate underwriting and fair pricing (*Lemonade Inc., 2021*).
- *User experience focus*: The founders applied principles from consumer tech to insurance, prioritizing a simple, transparent, and enjoyable user experience – a stark contrast to the often confusing and frustrating traditional insurance processes *(Schreiber, 2018*)

By leveraging their tech industry experience and identifying the pain points in the traditional insurance model, Schreiber and Wininger were able to conceptualize Lemonade as more than just an insurance company but a tech company doing insurance. This approach set the stage for Lemonade's disruptive entry into the market and its rapid growth in the years that followed.

3.5. InsurTech implementation by Lemonade

Lemonade Insurance, a prominent player in the InsurTech space, has been at the forefront of integrating advanced technologies to disrupt the traditional insurance industry and transform its business model in the homeowner's insurance sector. This section analyzes Lemonade's implementation of InsurTech through the lenses of artificial intelligence (AI), machine learning, and blockchain technology.

3.5.1. AI and Machine Learning

AI and machine learning remain the cornerstone of Lemonade's product offerings, designed to assist customers in purchasing policies and filing claims effectively (*Hollmer, 2022*).

One of Lemonade's key AI innovations is **AI Maya**, a chatbot designed to streamline policy creation and underwriting for urban residents (*Gupta, 2020*). AI Maya interacts with users through a conversational interface, gathering information to generate personalized insurance quotes and customizing policies in real time based on user preferences. This user-friendly approach speeds up the process, completing onboarding in just 90 seconds compared to the 10 minutes required by traditional insurers (*Arora et al., 2023*). Furthermore, AI Maya also assists users through the underwriting process, ensuring efficient completion of all necessary documentation.

Besides AI Maya, **AI Jim** - a Lemonade Insurance's claims experience bot, plays a vital role in automating and optimizing claims processing. Handling 90% of claims, AI Jim swiftly assesses and approves claims by cross-referencing details with policy information, often providing approval and payouts within minutes (*Agnihotri & Bhattacharya, 2022*; *Ozsevim, 2023*). Equipped with advanced algorithms, AI Jim also detects potential fraud by analyzing data patterns and anomalies, flagging suspicious claims for further review while ensuring legitimate claims are processed promptly.

3.5.2. Blockchain

Blockchain is another crucial component of Lemonade's insurance technology strategy. At Lemonade, blockchain technology is utilized through smart contracts. The company's business model involves taking a fixed fee from each monthly payment and allocating the remaining funds for potential claims (*Shetty et al., 2022*). When a claim is filed, the blockchain's smart contracts automatically validate the loss, allowing for instant payment to the customer (*Shetty et al., 2022*). Through the implementation of blockchain, Lemonade can (1) securely and transparently manage and verify insurance contracts; (2) remove the need for intermediaries like insurance agencies, as transactions are directly validated on the blockchain; and (3) minimize fraud risks by encrypting and distributing data across multiple network nodes, which makes it nearly impossible for malicious actors to tamper with the information (*Barbera, 2023*).

Lemonade's recent initiative, the Lemonade Crypto Climate Coalition (LCCC), leverages blockchain to offer affordable crop insurance to subsistence farmers in regions like Africa. The LCCC uses a Decentralized Autonomous Organization (DAO) on an eco-friendly, proof-of-stake blockchain to automate insurance processes through smart contracts (*Horton, 2022*). For instance, weather data triggers automatic payouts if thresholds for floods or droughts are met, speeding up the process. Additionally, the platform creates a capital pool funded by crypto investors, lowering insurance costs for farmers and showcasing blockchain's potential in addressing global challenges like climate change.

3.6. Impacts and results

Lemonade has made significant strides in home insurance through InsurTech solutions, particularly by integrating AI and Machine Learning. AI Maya has drastically reduced the time to subscribe to a policy from 25 minutes to just 90 seconds, making the process quick and

effortless (*Barbera, 2023*). Besides, AI Jim has efficiently handled over 2 million claims, minimizing human interference and significantly reducing response times, leading to a faster, more efficient, and hassle-free customer experience.

In addition, the use of blockchain technology in processing has also extended its support to Lemonade operations by providing increased clarity to insurance information. It has also increased the security of information while eliminating the third party and in the process minimized the rate of fraud. The insurance contracts that Lemonade registers and validates using blockchain have reduced cases of fraud, which were previously at 2.5%, to under 0.2% (*Barbera, 2023*).

Lemonade's financial performances also highlight the effectiveness of leveraging InsurTech solutions (*Barbera, 2023*). In Q1 2024, Lemonade's revenue hit $119.1 million, up 25% year-over-year and surpassing estimates. Gross profit soared 110% to $34.7 million, with margins rising from 17% to 29%. Adjusted EBITDA loss fell 33% to $33.9 million, and net loss improved by 28% to $47.3 million, translating to a $0.67 per share loss, better than the projected $0.79 (*GuruFocus, 2024*).

Historical Operating Metrics

$ in millions except Premium per customer

	Mar. 31, 2022	Jun. 30, 2022	Sept. 30, 2022	Dec. 31, 2022	Mar. 31 2023	Jun. 30, 2023	Sep. 30, 2023	Dec. 31, 2023	Mar. 31, 2024
Customers (end of period)	1,504,197	1,579,936	1,775,824	1,807,548	1,856,012	1,906,408	1,984,154	2,026,918	2,095,275
In force premium (end of period)	$ 419.0	$ 457.6	$ 609.2	$ 625.1	$ 653.3	$ 686.6	$ 719.0	$ 747.3	$ 794.2
Premium per customer (end of period)	$ 279	$ 290	$ 343	$ 346	$ 352	$ 360	$ 362	$ 369	$ 379
Annual dollar retention (end of period)	82%	83%	84%	86%	87%	87%	85%	87%	88%
Total revenue	$ 44.3	$ 50.0	$ 74.0	$ 88.4	$ 95.2	$ 104.6	$ 114.5	$ 115.5	$ 119.1
Gross earned premium	$ 96.0	$ 106.8	$ 136.4	$ 151.3	$ 154.2	$ 163.9	$ 173.2	$ 181.0	$ 187.9
Gross profit	$ 10.2	$ 11.3	$ 8.1	$ 12.7	$ 16.5	$ 12.1	$ 21.9	$ 33.6	$ 34.7
Adjusted gross profit	$ 16.3	$ 17.5	$ 13.2	$ 17.9	$ 20.6	$ 16.6	$ 24.9	$ 35.3	$ 36.7
Net loss	$ (74.8)	$ (67.9)	$ (91.4)	$ (63.7)	$ (65.8)	$ (67.2)	$ (61.5)	$ (42.4)	$ (47.3)
Adjusted EBITDA	$ (57.4)	$ (50.3)	$ (65.7)	$ (51.7)	$ (50.8)	$ (52.7)	$ (40.2)	$ (28.9)	$ (33.9)
Gross profit margin	23%	23%	11%	14%	17%	12%	19%	29%	29%
Adjusted gross profit margin	37%	35%	18%	20%	22%	16%	22%	31%	31%
Ratio of Adjusted Gross Profit to Gross Earned Premium	17%	16%	10%	12%	13%	10%	14%	20%	20%
Gross loss ratio	90%	86%	94%	89%	87%	94%	83%	77%	79%
Net loss ratio	89%	90%	105%	97%	93%	99%	88%	78%	78%

Figure 1: Lemonade's historical operating metrics

Source: Calvo and Yamashiro (2023)

Lemonade's technological focus has notably reduced its loss adjustment expense ratio, a cost insurance a company incurs when investigating and settling a claim, to 7.6%, significantly lower than the industry average of around 10% (*Lemonade Inc., 2024*). This efficiency, driven by AI, has led to a nearly 60% reduction in claim costs since Q4 2021, supporting the company's cost management, scalability, and customer satisfaction in a competitive market.

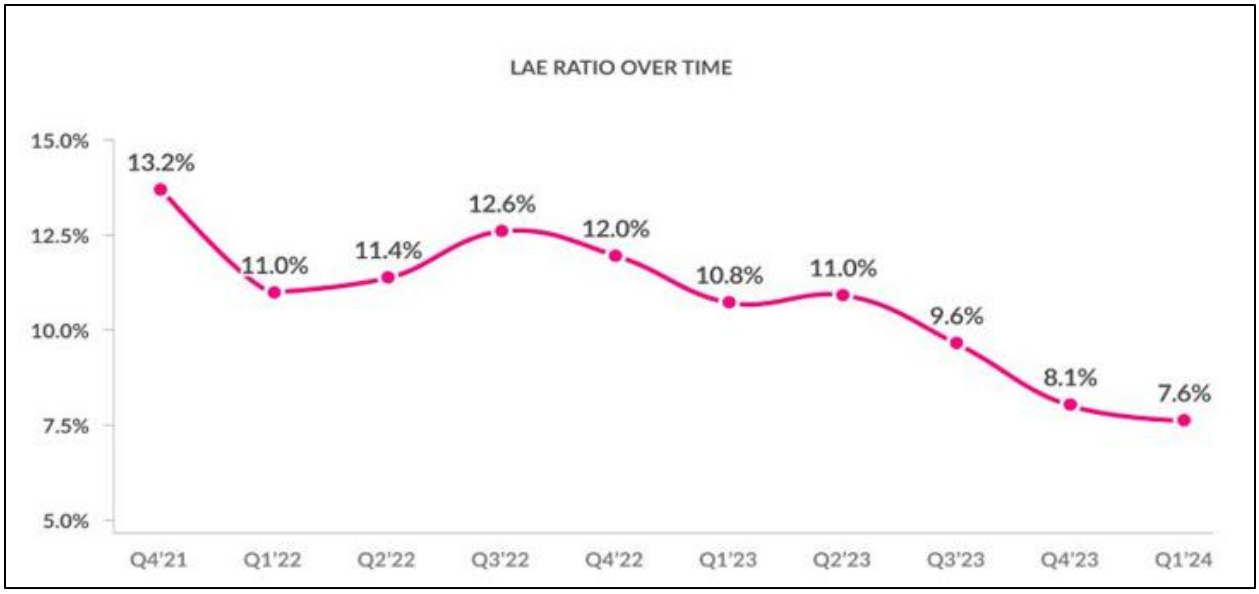

Figure 2: LAE ratio over time

Source: Lemonade (2024)

In terms of customer growth and market penetration, as of the first quarter of 2024, the total number of Lemonade customers has reached 2,095,275 people (*Lemonade Inc., 2024*). Notably, it only took Lemonade 4.25 years to reach its first million customers and just 2.75 years to add the next million, while other companies needed more than 20 years (*Calvo & Yamashiro, 2023*). This growth is a demonstration of Lemonade's ability to attract and retain customers in a competitive market.

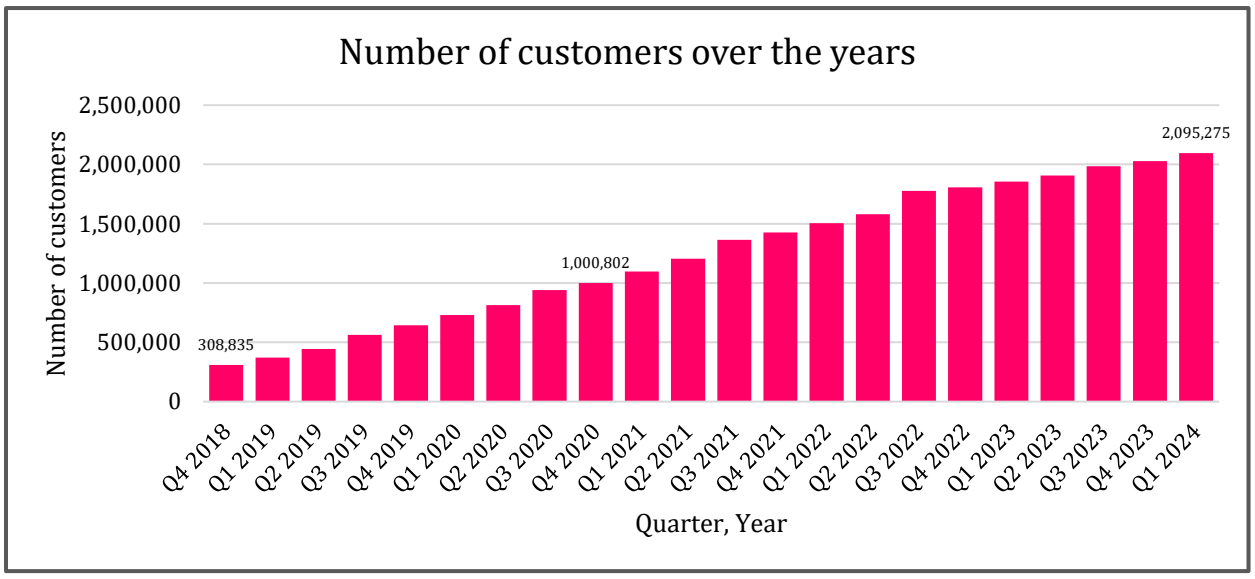

Figure 3: Number of Lemonade's customers over the year

Source: Authors' elaboration

3.7. Lesson learned

Building upon the insights from Lemonade's InsurTech implementation, several strategic lessons emerge for other companies in the insurance sector and beyond. The first and foremost lesson is the importance of a solid technological foundation for enhanced productivity, as demonstrated by Lemonade's use of AI, machine learning, and blockchain to improve customer experience, streamline operations, and reduce fraud. It underscores how insurance companies can leverage technological advancements to better serve their customers and achieve strong financial results. Furthermore, Lemonade's evolution from a disruptive startup to a publicly traded company exemplifies the transformative impact of technology on traditional industries. As the company continues to grow and diversify its offerings, it stands as a key example of how innovative thinking, paired with cutting-edge technology, can create a business that is both profitable and socially responsible. The Lemonade case provides a valuable roadmap for new startups aiming to disrupt established sectors by focusing on customer satisfaction and utilizing the latest technological tools.

However, Lemonade's success story is not solely about technology; it also emphasizes how technology can be used to rethink outdated models, improve efficiency, and contribute to positive societal change. Looking ahead, Lemonade's approach offers significant insights into how companies can integrate technology and ethical practices to redefine industries and create new value propositions. This case study illustrates the significant impact of embracing innovation in transforming even the most traditional industries.

4. Implications for Vietnam's insurance industry

4.3. Current landscape of Vietnam's InsurTech

4.3.1. Market overview of Vietnam's InsurTech

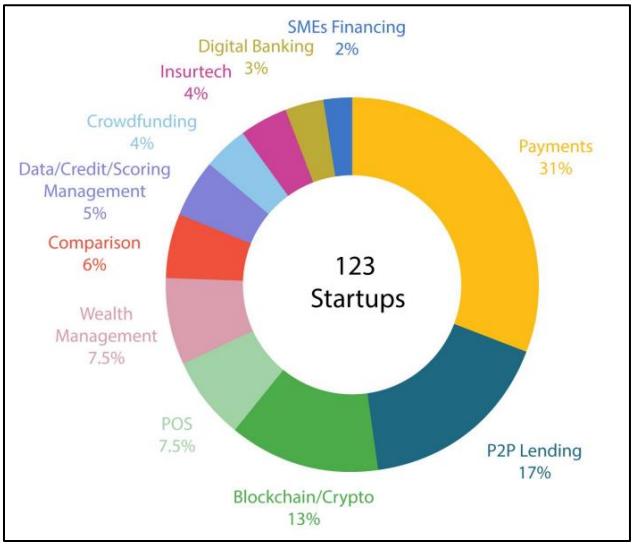

Figure 4: The percentage of companies in the Fintech in Vietnam, 2020

Source: Fintech Singapore (2021)

In 2020, Vietnam's Fintech landscape included 123 companies, with the top five sectors dominating the market. InsurTech, although comprising only five companies (payments, peer-to-peer lending, blockchain, POS, and wealth management) and about 4% of the market (*Fintech Singapore, 2021*), is expected to grow rapidly. With a 41% annual growth rate, Vietnam's InsurTech market, though currently small, could match the scale of Thailand and Singapore within six years (*Savin & Lourey, 2023*).

Vietnam's InsurTech market is becoming increasingly competitive with both domestic and foreign players (*Savin & Lourey, 2023*). According to Mr. Vuong Viet Linh, CEO of Vietnam Online Financial Insurance Company (VIFO), InsurTech, though still new, is an attractive sector drawing interest from many companies. MBBank (*2021*) has listed several notable examples of InsurTech companies in Vietnam, showcasing how they have incorporated technology into their products as follows:

- *Inso*: This mobile insurance app utilizes OCR (optical character recognition), computer vision, and deep learning technologies to enhance its functionality and user experience.
- *Opes*: Specializes in offering insurance products integrating technology for a personalized user experience. It delivers services through B2B2C channels, including APIs, portals, and batch processes.
- *SAVEmoney*: Provides a digital insurance platform designed for banks, hospitals, and telecommunications companies. It leverages AI and intermediary technologies to connect data-owning companies with financial and retail service providers.
- *Papaya*: Offers a mobile app for businesses to manage all aspects of employee benefits. It provides a platform that facilitates connections with various stakeholders.

The digital insurance market has experienced robust growth, especially in COVID-19, opening up unprecedented opportunities. However, according to Mr. Nguyen Quang Trung, Deputy General Director of Information Technology at AIA Vietnam, the life insurance sector is still developing relatively slowly compared to non-life insurance (*DigitalVN, no date*). Major insurance companies such as AIA and Prudential Vietnam have adopted technologies like Chatbox and Matchbook to support sales and facilitate online payments (*Thanh, 2023*; *Prudential, 2020*). Meanwhile, Bao Viet has developed its app and collaborated with platforms like MoMo and Facebook Workplace to enhance business efficiency (*MoMo, 2024*; *BaoViet Insurance, 2018*).

In conclusion, while foreign insurance companies in Vietnam are leveraging InsurTech to develop products and connect with customers, domestic insurance companies are focusing on using InsurTech to enhance the efficiency of product distribution.

4.3.2. Evaluation of Vietnam's insurance industry

- *Opportunities for Growth of Vietnam's InsurTech Industry*

Vietnam's InsurTech industry is poised for significant growth, mainly driven by the new Insurance Business Law (effective January 1, 2023), which offers a more structured regulatory

framework, particularly for online insurance sales. This law is expected to boost the sector by streamlining approval processes and encouraging innovation (*Thư viện Phát luật, 2024*; *ICTVietnam, 2024*). Despite Vietnam's insurance market being smaller compared to countries like Singapore, the low life insurance penetration (less than 11% in 2021) signals strong growth potential, especially among the young, tech-savvy population and the expanding middle class (*The Ministry of Finance, 2022*; *Das et al., 2023*). Rapid digitization and investments in technology further drive this growth, enabling efficient operations and expanding distribution channels (*Vu, 2024*; *Dao et al., 2021*).

- *Threats Facing Vietnam's Insurance Industry*

Firstly, the legal framework has not yet addressed insurance activities with new business models. Technological innovation in the insurance sector can disrupt market stability, making it difficult to manage and control the distribution channels of insurance companies to customers. This challenge poses certain difficulties for state regulatory agencies in overseeing and controlling the operations of these companies.

Secondly, although Vietnam has the potential to attract tech talent, the current workforce lacks specialized skills in fintech and InsurTech. To adapt to the technological applications in InsurTech, companies will need to seek skilled workers with technological expertise. However, according to Phuoc (*2024*), 97% of SMEs in Vietnam have not kept pace with technology trends, with only a few adopting innovation due to the shortage of high-level technological and innovative skills.

Thirdly, the constant fluctuations in the global economy will significantly impact the financial situation of insurance companies. For example, the current low interest rates worldwide are putting pressure on the financial performance of these companies (*Statista, 2024*). Customers tend to be less inclined to purchase insurance when interest rates are low, which leads to reduced revenue and profits for insurance companies.

Another major challenge for Vietnam's InsurTech market is low consumer awareness, making it difficult for startups to drive online insurance adoption (*Bao, 2022*). Additionally, life insurance is complex, involving factors like health and financial assessments, making it harder to digitize than simpler non-life insurance products such as property, car, and travel insurance. In fact, in the world, technology insurance models for life insurance products also exist but are very few.

Fifthly, funding difficulties and a limited range of products pose significant threats to InsurTech companies. Additionally, low insurance awareness means people buy coverage only when necessary, making it challenging for InsurTech firms to shift market perceptions and drive broader adoption.

4.4. Recommendation

4.4.1. Improve visionary leadership and train a high-quality workforce

Visionary leadership is crucial to successful digital transformations in the insurance sector (*Trigyn Technologies, 2024*). As demonstrated by Lemonade's experience before implementing InsurTech solutions, the company's founders, Daniel Schreiber and Shai Wininger, brought a fresh perspective to a stagnant industry. Their backgrounds in technology and entrepreneurship were instrumental in shaping Lemonade's innovative approach to insurance. Similarly, leaders in Vietnamese insurance companies should possess a strong belief in technology and be proactive in implementing technical improvements, particularly in customer-facing processes like claims handling.

Moreover, Vietnam has the potential to nurture tech talent, as evidenced by the government's vision to increase the digital economy's contribution to GDP to 30% by 2030 and to achieve an annual labor productivity growth of 7.5% (*Phi, 2023*). However, Vietnam currently lacks a workforce skilled in fintech and InsurTech innovations (*Baker McKenzie, 2023*). To address this gap, Vietnamese InsurTech firms should develop specialized training programs, such as sending employees abroad for advanced studies or hiring experts from countries with strong InsurTech sectors for internal training sessions.

4.4.2. Implement experience chatbots in InsurTech models

Experience chatbots can significantly enhance customer interactions in the InsurTech sector. For instance, AI Maya, a customer experience chatbot, helps urban residents create ideal insurance plans and guides them through a streamlined and faster policy underwriting process (*Gupta, 2020*). Similarly, AI Jim, a claims experience bot, plays a crucial role in Lemonade Insurance’s operations by automating and optimizing the claims processing experience for customers.

In Vietnam, the current legal framework does not yet fully accommodate insurance activities involving new business models, as noted in the analysis of the current landscape of Vietnam's InsurTech sector. While hybrid models may not be feasible, AI tools like Maya and Jim could still be implemented in direct-to-consumer (D2C) models, similar to Lemonade’s approach, as well as in B2B models and business-to-business-to-consumer (B2B2C) models of InsurTech firms.

For example, in a B2B model, AI chatbots could be utilized on digital broker platforms to manage online contracts, handle customer management, support sales on digital platforms, and provide insurance consultations via online brokers. In a B2B2C model, digital issuers could deploy AI chatbots to allow customers to submit claims or receive reimbursements (*FiinGroup, 2024*).

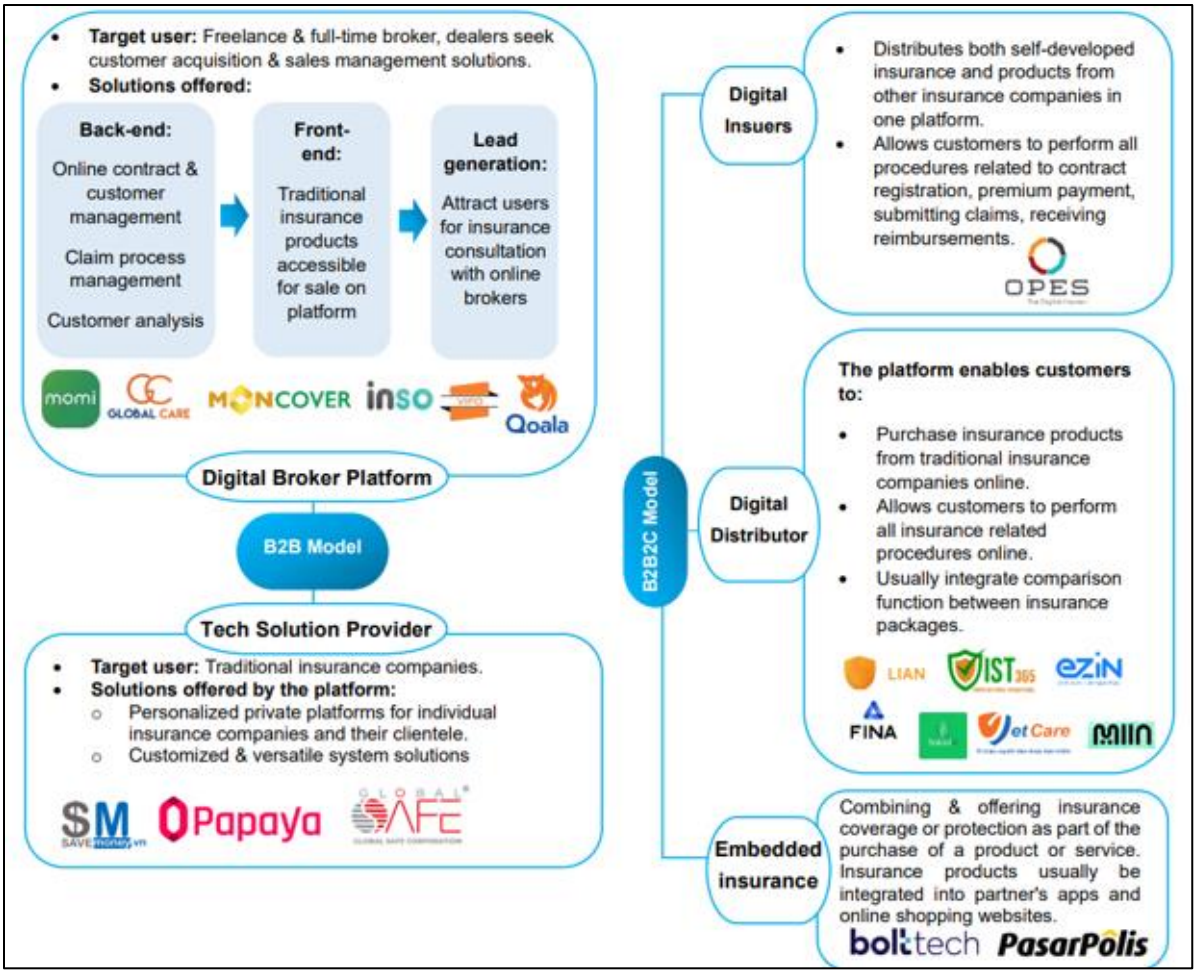

Figure 5: BRB, B2B2C model of InsurTech firms

Source: FiinGroup (2024)

4.4.3. Leverage blockchain innovations

Vietnam has established itself as a dynamic and promising market on the global blockchain map, ranking among the top three countries in the Global Cryptocurrency Adoption Index by Chainalysis for three consecutive years (*Thanh, 2024b*). This highlights the country's potential to develop blockchain applications within the insurance industry. One area where blockchain can be effectively applied is in handling small insurance contracts. Similar to Lemonade's approach, when a claim is filed, the blockchain's smart contracts can automatically validate the loss and facilitate instant payments to the customer (*Shetty et al., 2022*). Additionally, Vietnamese insurance companies could consider the Lemonade Crypto Climate Coalition (LCCC) model, a blockchain-based platform providing affordable crop insurance to subsistence farmers.

Agriculture is a significant sector in Vietnam's economy, employing a large portion of the population and contributing 11.96% to GDP (*Statista, 2024*). However, it is highly susceptible to climate-related risks such as floods, droughts, and typhoons, which can cause severe damage to crops and livestock. The integration of blockchain technology in the insurance sector can offer

innovative solutions to manage these risks more effectively. For instance, the platform monitors weather data like rainfall, and if certain thresholds are met (indicating a flood or drought), the smart contracts automatically trigger insurance payouts to the farmers.

To develop a robust agricultural insurance system, InsurTech companies in Vietnam should collaborate with meteorological organizations and leverage advanced technologies such as remote sensing, satellite imagery, and IoT sensors. These tools can provide precise real-time data on weather and soil conditions, which can be integrated into blockchain platforms to trigger smart contract payouts only under verified circumstances. Additionally, incorporating smart agriculture technologies, like drones and IoT devices, can enhance farm management by offering data-driven insights. For instance, drones can monitor crop health, and IoT sensors can provide continuous updates on soil and weather conditions. This integrated approach would not only improve insurance services but also support sustainable farming practices and bolster agricultural resilience against climate risks.

By leveraging these technologies and integrating them with blockchain, Vietnam's insurance companies could develop a more robust and responsive agricultural insurance system that supports sustainable farming practices and enhances the resilience of the agricultural sector against climate-related risks.

5. Conclusion

This research paper delves into the transformative impact of InsurTech on the global insurance industry, with a particular focus on Lemonade Insurance Company and its implications for Vietnam's insurance sector. Our analysis has yielded two significant contributions:

Firstly, we have presented a comprehensive case study of Lemonade Insurance Company, demonstrating how its innovative use of artificial intelligence, machine learning, and blockchain technology has disrupted the traditional insurance model. This disruption has led to notable operational efficiencies and enhanced customer satisfaction. Secondly, we have formulated strategic recommendations for Vietnamese insurance companies based on the lessons learned from Lemonade's success. The case study highlights that the integration of advanced technologies can streamline processes, reduce fraud, and elevate customer experiences. Lemonade's implementation of AI chatbots for policy creation and claims processing, alongside blockchain for smart contracts, has established new industry standards.

As Vietnam's insurance sector stands on the brink of substantial growth, adopting InsurTech solutions presents both opportunities and challenges. Our analysis reveals a burgeoning market with increasing interest from both domestic and international players. To leverage this potential, we recommend that Vietnamese insurance companies focus on three key areas: enhancing visionary leadership and training a high-quality workforce to drive technological innovation; implementing experience chatbots to improve customer interactions and streamline processes; and leveraging blockchain innovations, particularly in areas such as agricultural insurance, where

Vietnam's unique economic context presents distinctive opportunities. These recommendations are aimed at addressing specific challenges faced by the Vietnamese insurance industry, including regulatory constraints, skill shortages, and low insurance penetration rates.

As the global insurance industry evolves, the insights from Lemonade and the proposed strategies for Vietnam underscore the pivotal role of technology in shaping the future of insurance. The successful implementation of InsurTech will depend on not only adopting new technologies but also on regulatory support, consumer education, and the development of a skilled workforce.

Looking ahead, further research could explore the long-term impacts of InsurTech adoption on market dynamics, consumer behavior, and regulatory frameworks in emerging markets like Vietnam. Additionally, examining the potential of other emerging technologies, such as the Internet of Things (IoT) and advanced data analytics, could offer valuable insights into the ongoing evolution of the insurance industry.

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