AI-Powered Customer Retention Strategies in Insurance

By Dr. Ahmadreza Rastegar

Professor of Electrical Engineering, Sharif University of Technology, Iran

1. Introduction

Building customer loyalty is a critical aspect of branding strategy. Insurance companies continue to pour resources into various avenues aimed at enhancing customer loyalty, though there is considerable debate on the influence of customer loyalty on brand success. However, raising levels of customer retention have become an increasingly important feature in highly competitive markets. Insurance firms are faced with a number of challenges from a variety of competitive threats. One particular consequence of an increasingly competitive market is that competition has served to erode the profitability of an increasing number of individual insurance products. As a result, customer retention has become a more important aspect of the profitability of the industry across a wide range of insurance products. As part of a broader aim of enhancing customer loyalty, this proposes an artificial intelligence customer retention innovation designed to improve firms' competitive positioning and available strategies in the highly competitive market for insurance.

Artificial intelligence is revolutionizing customer retention strategies in many business-to-consumer markets, and the customer expectation is that insurance companies should be no different. As our understanding of AI engagement strategies develops, so must our customer retention design and implementation continue to evolve in order to engender loyalty. More and more, the customer of an insurance firm's product or brand is moving away from the product or brand itself and towards the overall experience. This shift in attitude is laterally influenced by experiential brands. Strategies such as gamification and experiential customer engagement are also becoming increasingly important, and as most insurance products are tabletop products, engagement strategies are becoming significant components of the customer retention strategy.

1.1. Background and Significance

Customer retention has been the keyword of the insurance industry for centuries. It is commonly stated that in the non-life segment of the insurance market, client acquisition and the subsequent increase in the business portfolio are directly related to the development of the economy. Strong economic growth inevitably leads to a larger number of clients and an increase in their loyalty. The reverse side of the coin is that during a recession, the trend is reversed, and a number of insurance policies are terminated. In-house data clearly show the direct link between the inflow of clients, their revenues, and GDP per capita in the short term.

However, various studies have shown a falling, or more accurately, changing trend in customer loyalty towards the end of the previous century. Some say that two-thirds of clients who leave do not move to a competitor, but simply do not see any further need for the insurance company's services at any point in the future. This has stimulated many scholars, consultants, managers, and other interested parties to devote a notable proportion of their respective activities to developing suitable, interesting, but different customer loyalty and retention strategies. There are two factors that contribute to the above insight. First, the market is ever more innovation-driven. This is facilitated by the high added value created by economies of scale. More and more often, however, insurance companies can be classified as belonging to intangible economies. The vast majority of profit is derived from specific services offered. Because innovations are introduced to the market at a fast pace, the client, more than ever, wants to be sure that they have the right product for a notably extended period. In addition, new developments in consumer behavior show that the consumer holds the key when it comes to loyalty. From now on, the customer is in control, and the customer is king.

It is customers who determine what makes a specific product or service. Only those companies that can anticipate these trends and effectively and efficiently steer developments are likely to survive. This is no different in the insurance category. It is certainly not surprising that information vendors are currently paying a lot of attention to facilitating the improvement of the customer retention process. By interpreting vast amounts of data on the customer, including lifestyle, demography, product usage, diagnostic information obtained during customer interviews, and dozens of other customer interactions—and monitoring customer behavior—advanced data mining techniques may be instructive in predicting which customers have budgets for sale and when those budgets will arise. Early estimations

approximate that a lifelong customer is worth an estimated €50,000 in gross income. Increasing retention by 5%, therefore, amounts to an increase in profits of at least €2,500 per customer.

1.2. Research Objectives

The objectives of our study are as follows. The first part of the study seeks to understand how AI technology can be best used to effectively and efficiently enhance customer loyalty over the course of several years in insurance and to investigate how insurance companies are currently using AI for customer retention. Second, the intention is to determine which measures for customer retention are currently showing the best effect on the renewal rate and premiums in the insurance industry in more depth. These measures are structured into activities, fungible products or policies, non-fungible products or policies, and contractual and legal regulations that prevent customer access to churn. Third, the aim is to develop a new, wider, and more detailed framework for analyzing customer loyalty through the use of AI technology. The proprietary framework will be shared with the insurance industry.

The intention is to provide actionable insights based on practical implementation, which are built from the experiences and theories in the context of the literature and several qualitative and quantitative studies. This insurance sector research seeks to make a practical contribution to defining the challenges and impact that insurance companies and agents might face after adopting AI technology. The research aims to lay the foundation for future studies and practices in the field of incorporating AI technology into CRM, customer loyalty, customer satisfaction, churn, retention, and complaint management. The identified results and conclusions of the study would provide scholars, professionals, and students in the customer satisfaction and loyalty domain, as well as for insurance policymakers. In addition, future implications and suggestions for the insurance industry are discussed.

2. Understanding Customer Retention in Insurance

Introduction for Customer Retention

Customer retention is the activity of managing and improving the relationship between an organization and its customers. It has been emphasized in the insurance business due to the characteristics of the industry. While serving the insurance business, customer quantities may

be integrated with the insured quantities. Customer retention comes from two ways: 1) how to build customer loyalty? 2) how to entice customers to do business again? This is consistent with the literature review result: future buying is the core of customer retention, and retained customers shed light on the guarantee of future sales. Insurance comes from customer loyalty. Consequently, loss or dissatisfied customers are a silent hazard for organizational survival; the long-term revival quest for the insurance crown can explain this hazard.

Customer loyalty is a long-term behavior, e.g., continuing to do business, repeat purchases, or 'word of mouth' endorsement intention with one worker or one organization. Two distinguished concepts are identified: value/community loyalty pertains to robotic customer action; customers buy commodities since they are the most reasonably priced, best fitting, and most handy ones accessible, and their purchasing system is based on the unpaid or they are not willingly affected by push components. Alliance/loving relationship loyalty is when customers have different emotional affection for the purchasing product. Attachment is an innovative work of making a customer who loves insurance from a customer in terms of attitude, behavior, or trust. Assessing and calculating the geometry of life insurance customer loyalty can yield NT$ 912 from the first year, and long-term revenue can reach NT$ 30,918.

2.1. Key Concepts and Definitions

In the literature on customer retention in the insurance domain, several concepts have been used on a regular basis. Below, we provide a concise explanation of key concepts used in the subsequent sections with regard to customer retention.

• Customer engagement is conceptualized as a bond between a customer and a company, a flow, a psychosocial state of being in which the consumer becomes energized, behaviorally adorned, emotionally linked, and cognitively engaged. In more practical terms, customer engagement is the intensity of a customer's involvement - how intense he or she is with a company and its offerings. High engagement typically leads to customer retention, as well as to value created and word-of-mouth.

• Customer retention refers to the efforts or tactics used to stem the flow of customers leaving a company. In the framework of this paper, customer retention links directly to the retention

aspect measured by the churn or turnover rates frequently estimated in the insurance industry and refers to the businesses not lost to the competition.

• Insurance turnover or churn refers to the termination of the contract between a policyholder and an insurance company. In the existing literature, the turnover rate as well as an alternative measurement, customer turnover, have been studied. In this paper, attention should focus on policy termination of insured on renewal date only. Customer turnover more generally refers to covered accounts.

2.2. Challenges in Customer Retention

It has become increasingly difficult for insurance companies to retain customers. The driving forces behind this shift are the digital transformation of the insurance business, increasing price transparency of intermediary services, and loss of loyalty due to an increasing competitive environment. The high competition among existing and new players of different sizes and business models forces incumbents and insurtech startups alike to exploit new ways of drawing attention to their products and services. Furthermore, technology companies have also entered the insurance market and promote customer-focused services.

Common pain points of general insurance customers leading to dissatisfaction are high prices and limited value for coverage, poor service experiences, and commercial focus of the insurance company. While not all churning customers are dissatisfied, dissatisfaction with prices and coverage and an excessive service attitude of the competition are the common triggers of the insurgent behavior. There are some of the 'stickiest' products—typically life policies. Otherwise, insurers that do not meet customer expectations on product performance and service quality are likely to incur several costs in the event of a claim. Churning insureds who had either an unpleasant claim experience or realized during post-loss service encounters that the service quality of the acquired insurers does not meet their expectations ended the business relationship with the insurer. Given the difficult situation in the general insurance markets in terms of customer retention, it is necessary to invest in other customer retention methods by using data and digital transformation techniques. Managing customer expectations is a challenge in itself as digital transformation and ease of access to information have generated a shift in customer behavior. Customers are more knowledgeable and their

expectations have changed. It is therefore important to identify valuable and accurate customer feedback.

Privacy and fraud are other challenges for customer evaluations. Many customers are reluctant to provide information for fear that it will not be kept private or, if it is, they will be bombarded with spam. Some people are more likely to give feedback if they are not happy with their experience, and negative reviews make up the majority of distributed reviews. Therefore, customer evaluations do not represent the majority of customers' feelings and views. Most insurers also state that there are specific types of customers within the insurance industry that are more likely to engage themselves and therefore give proper feedback. Also, consumer behavior is moving towards getting feedback from digital platforms rather than a customer representative of the organization. Other potential challenges in customer retention methods are the high quantity of customer data as well as the need to properly interpret the information yielded by these methods. A final difficulty resides in the execution of these methods by insurance companies. Besides the sophistication of data gathering, AI divides some of the methods available to give customer retention counsel.

3. Role of AI and Machine Learning in Customer Retention

Consumers and businesses across industries expect personalized, efficient, and responsive service from their providers. The growing capabilities of artificial intelligence and machine learning enable organizations to deliver the types of service their consumers demand. AI incorporates many different technologies and methods, but generally refers to systems that can perceive their environments and take actions to accomplish their goals. Machine learning is a subset of AI that uses statistical techniques to give computers the ability to progressively improve the performance of a specific task as it is exposed to more data over time. Both AI and machine learning are used toward various ends, but in the context of marketing, they are primarily used for the collection, analysis, and use of data.

Half of the insurance professionals surveyed say they use AI-driven predictions to inform conversations with customers about their insurance needs, and a significant percentage say they use AI to personalize marketing campaigns. AI and ML can process data to determine the likelihood of specific customer behaviors or preferences. Systems analyze large amounts of unstructured data, sifting through customer complaints, scores, consumer credit reports,

and mobile app use to identify the likelihood a customer will churn, the likelihood a customer will exhibit behavior that correlates with a likelihood of churn, and which of the insurer's offerings customers are most likely to accept. For instance, an insurer could use analysis of data to determine the likelihood that it should aggressively target a customer it expects to renew, because there is a high chance they will buy life insurance within the next five years. AI can help to predict marketing communication style – an insurer might be better off projecting images of small children in an ad to some prospects and images of real estate or vacations to others.

3.1. Overview of AI and Machine Learning Technologies

2.1 Introduction The general public and researchers in the subject area tend to conflate various terms, technologies, and capabilities with actual notions of AI. Therefore, it is important to start with an explanation of commonly accepted definitions, components, and principles of AI and machine learning technologies. AI is associated with the development and sophistication of two major technological branches: expert systems and machine learning, macrocategorized as AI and ANI, and ANCS, but also as ANI and AGI, and so forth. AI is programmed for autonomous activity, reasoning, adaptation, and ultimately, learning from task experience, while ANI has more limited capabilities.

2.2 Machine Learning: Core Principles Machine learning algorithms are based on simple models and many predetermined input parameters. At first, the objective is to determine the ideal parameter values. This process entails iterative optimizations leading to the minimization of the overall model error. In unsupervised settings, models identify patterns between input parameters to inform decision-making. In supervised learning, ML algorithms decide output parameters based on input values, which can be compared to the correct solutions. Different models make use of different algorithms. For example, the neural network and decision trees models depend on distinct algorithms.

2.3 Data is the Key Data in the IT sense generally refers to information stored in electronic format as files or databases. Data can be presented in various formats to suit different task types, which are classified according to their uses. New data sets are combined with previously stored and analyzed data to expose similar patterns between task sets. This connecting of new data sets to their corresponding task outcomes creates data-driven ML-

based solutions. In other words, the database is used to train the machine, based on a supervised or unsupervised paradigm, to make more efficient, data-driven analytical predictions.

3.2. Applications in Customer Retention

AI is being more commonly used in customer retention. Notably, there are the following different strategies for customer retention in the insurance industry where AI and ML are used: to identify and catch the resident population; to predict the possibility of a car breakdown with preventative measures and as a background check for the new customer; to see if customers' businesses have a high risk of disruptions; when a forest fire is predicted, insurance companies can move personnel and equipment into the area in order to contain blazes or get the right numbers of insurers, claims adjusters, and medical staff and supplies ready to be diverted. Machine learning models are employed to predict both the sum of insurable house content costs per policyholder, to improve the performance of the Monte Carlo Maximal Violation Path method used to automate the detection of connections. Data processing involves the use of predictive analytics – i.e., extracting useful information from data to determine patterns and identify risks and opportunities. This application allows for the detection of critical risks and potential opportunities, like population, distribution, and mortality evolution to design insurance products or improve business models aimed at customers. Moreover, it can be used as an enhancement of predictive maintenance for customer retention by providing audiences of owners with a future prediction tool. Being able to enrich and model this information, these systems can get to know their potential associates and preemptively make insurance recommendations. AI-driven retention strategies simplify and speed up the development and adaptation of customer retention strategies. They provide actual insights for managers and greatly enhance the set of available informational tools used for customer loyalty and retention management, reflecting a shift from a rule of thumb approach to a data-oriented and evidence-based decision process.

4. Identifying At-Risk Customers

Mining big data using AI techniques and leveraging it to retain customers is the latest trend in the customer retention game. Identifying an 'at-risk' customer at the earliest can prevent a customer from turning into a churn, which is why it is crucial for any organization to identify

such customers. Data such as transaction histories, numerous reactionary variables such as usage patterns, billing plans, and their behavior towards switching between plans or using volume-banded services, technician visits, trouble reports and their resolution, call detail records, responses from customer feedback surveys or call center representatives, and ongoing customer engagement activities can all provide indicators for identifying an at-risk customer. These variables are symptomatic of churn risk or customer satisfaction problems. The presence of these issues can sometimes indicate that a customer is at risk.

The analytic study of such data for identifying those at risk of leaving a subscription service is an area that has been heavily studied in the field of churn prediction, particularly in the finance and technology sectors. We can analyze customer behavior data to come up with a predictive model that identifies a set of customers who are likely to churn in the near future. Predictive modeling techniques can be used to score a customer with respect to the likelihood that the customer will churn. Identifying which customers may be at risk of churning is important so that appropriate retention tactics can be planned and executed efficiently using customers' resources. Interestingly, many retention tactics can be used quite generally, not just targeted towards a specific segment, and can be very effective in reducing churn.

4.1. Data Sources and Variables

It is mainly customer demographics, such as age and gender, transaction data, such as the purchase amount, and engagement metrics that are being used to identify at-risk customers. Those who are giving lower engagement are thought to be in danger of churning. Since data on customer retention is rare in the insurance industry, customer feedback and complaints are also used to compile data. Most research emphasizes the significance of using transaction data as the primary data type. Only a few insurers use customer demographics and customer feedback data to improve the customer retention strategy. The primary aim of collecting various data is to profile the customers, gaining access to their insights and needs, and predicting their future behavior. The profile is divided into: customer needs, customer profile, customer behavior pattern; value generated through engagement, and how they are satisfied with what the company offers. Collecting data from these several types of data shall enhance customer retention strategies.

The company discourages using transaction data to build such strategies because it suggests that companies are focusing on transaction banking. We'd like to recommend an insurance company to use service data such as point of view, annual complaints received, and transaction volumes. These data tend to be stable from 2008 to 2012, and accepted data-based research in academic journals. There is little literature that confirms the use of those service data. However, in the company, there are four interviewees; one of them said their company uses Net Promoter Score as one of the end-to-end services this year to measure feedback data.

4.2. Predictive Modeling Techniques

Air. There are two types of predictive modeling techniques: descriptive models tell 'what is' and work best when they are fresh and up to date; predictive models tell 'what will be'. In most cases, predictive modeling involves using institutional and transactional histories of previous behavior to be extrapolated into future outcomes. Typically, some independence of each observation will be assumed. Often, some type of person-level unit of analysis will be created from the transactional data. Though many predictive modeling types could serve a life insurer, in the following we review the performance of some well-known types of predictive modeling techniques and how they fit an AI solution.

Following is a brief discussion of various types of predictive modeling that might be used to identify those customers who are at risk of departing before a desired point in time. • Regression analysis is the most commonly used and understood of techniques. The less dependent relationship between predictors and the target variable, mean variation around predicted targets, and a more clearly elucidated methodology make this type of model very amenable to human supervision. • Decision trees are a relatively recent development and are excellent predictors. As with regression analysis, decision trees can be scrutinized. In many cases, however, insurers experience difficulties in explaining the outputs to call center agents; the outputs can seem counterintuitive. • Neural networks are perhaps the best predictors of all, often capable of identifying the underlying nonlinear relationships in complex data. • Survival analysis techniques are also applicable. Most actuaries are familiar with the technique used in such predictive modeling. The output is absolute risk rates of a target variable over various time periods and probabilities that a claim or event will occur. The benefit here is that retention managers are the direct output – such models perform customer

segmentation, highlighting which customers are at most risk. Neural networks have the ability to handle both linear and nonlinear relationships. Of course, many other techniques converge as well. Researchers might combine techniques to draw upon the strengths of more than one. There are few techniques that exclusively serve the insurance industry; rather, the research community as a whole works to perfect approaches and make them as widely applicable as possible. There are always still those within a firm who must determine if these techniques actually increase the likelihood of customer retention. Thus, while machine learning undeniably has value, it cannot be entirely removed from the critical eye of those tasked with customer satisfaction. It is believed an integrational approach, be it in the form of a machine learning system that clearly traces its mission objectives against measurable business outcomes or a learning system that is fully supported by a hypothesis based on numerous social scientific theories, can be the desired optimum. Techniques must indeed be framed within the larger customer retention model. Not every customer is worth keeping, and not every predicted loss can be reversed – in some cases, a carrier might instead try for other means, such as reclaiming a subrogation prior or repositioning the firm in a new market. Moreover, a predictive model might best be valued for evaluating customer profitability. A guarantee script must acknowledge release points for the customer, not just draw or reinforce a commitment to remain. Returning to the concern of a changeable environment, both the predictive model and its precision must be evaluated continually. There is agreement that the business environment shifts, losses for various reasons occur, and factors from the predictive modeling process change, necessitating continual validation.

5. Implementing Effective Retention Measures

A great variety of theoretical studies on insurance consumers' behavior have been carried out. However, there are a few practical recommendations on how to implement these insights to improve customer retention. Many insurers see loyalty programs as an effective way to retain customers, but they have several weaknesses. That is why insurance companies are searching for a gold mine of customer retention strategies and solutions. One of the most successful points of view from which we may approach the retention measures is to appeal to the consumer's feelings, and to predict, satisfy, and encourage them. AI technologies allow implementing mathematical models to predict an insured's behavior and, using this

information, to persuade them to take action. This paper introduces practical points for implementing the customer retention strategy in insurance.

Products should not only meet the average preferences of all prospective customers, but they should also match the special features and preferences of the prospective buyer. The insurer should show the prospective client that the company values relationships and is seriously interested in sustaining them. In many cases, the insurance company's role is not only to sell a required product but also to offer the right solution for the client. It is crucial to know the customer and their preferences as clearly as possible. Also, it is important to be able to offer the customer a material proposal and to present it in the manner the customer prefers. The success story demonstrates how personalized communication messages doubled the number of purchase contracts per customer. The bonus system and a highly developed after-sales services strategy contribute to higher customer retention. The more satisfied customers are, the less the defection rate is, and vice versa: highly satisfied customers result in a growing retention rate of 3 percent.

5.1. Personalized Communication Strategies

Research has shown that the cost of customer acquisition is between five to ten times more expensive than the cost to retain an existing customer. One of the best ways to improve customer retention is through personalized communication strategies. In essence, only people who feel valued and in good hands remain with a company. Therefore, it is crucial to communicate this value strategically. Before defining which strategies to implement, we need to understand when and how to communicate in order to appeal to the different profiles of a given public.

Personalized communication leverages that understanding of a customer’s behavior and interactions to address individual needs and circumstances. The goal is to have more meaningful conversations in ways that are contextually relevant to the recipient's preferences. When and how we message individual customers should be continuously reviewed: the relevance and timeliness of a communication are always shifting according to the needs of a customer. Our hope is that a well-targeted and empathetic communication will guide a customer to be engaged with our brand, leveraging information to encourage desirable outcomes. Automated communication plays this role well: a good tool means that customers

can have a personal dialogue even without there being a human to recognize and value them. To remain effective, strategies must offer a continual feedback loop—a kind of continuous improvement cycle that lets us learn and refine the tactics that work best.

5.2. Tailored Product Offerings

Customized offerings that are designed to suit customer needs may positively influence customer perception of added value and could enhance product satisfaction. Tailored products are particularly important in light of limited possibilities for pricing differentiation, as they are generally connected with the possibility of creating a uniqueness of a product. With today's development of data analytics, insurance managers have easy access to large amounts of customer data, which makes it possible to predict and understand customer preferences. Basically, they can suggest the kind of policy and coverage sufficient for individual drivers or households based on individuals' driving habits or lifestyle. In a more competitive market, particularly in mature markets, insurers should offer customized solutions to create more product value for customers. They should also show more flexibility in their product offerings, adapting their coverage, for example, to different market segments with different needs. The disclosure of information about individual customers may facilitate the cooperation and trust enhancement process, as well as the company's commitment, leading to positive outcomes, but it also opens the door to opportunistic actions. Moreover, if an individual customer emotionally values trust and respects the company's effort related to it, when he or she becomes a co-owner of the offered product or simply passes know-how and show-how from the supplier to a friend or an acquaintance, the intensity of the decision-shaping complexity process increases, enhancing loyalties. However, the cost of these analyses may be significant, particularly with less detailed customer data, which can be obtained by traditional insurers. Personalizing the products is a kind of standard solution in the perspective of different companies, which in theory can enhance the retention process. Definitely, personalization of marketing and then of offers as well are the initial steps enhancing customer orientation and value offerings from the operational and financial stakeholders' perspective. The more the products are adjusted to the needs and expectations of particular clients, the bigger the chances for a company to enter a dialogue with clients and the bigger the client's willingness to be loyal to such a company. Still, costs related to extremely individualized offers may also impose limitations on the process. Moreover, data

usage paranoia of potential customers should today be taken into special consideration. Receiving an insurance offer that is regarded as too personalized, based on an in-depth analysis of individual habits, may be perceived as a privacy threat. Casualty underwriters should focus on whether the potential benefits of personalization counterbalance the possible costs.

6. Future Direction

The AI technology is evolving at a breakneck speed with continuous improvement that can potentially impact the existing customer retention strategies over the next decade. Customer revenue prediction will be the foundational step for executing those strategies. There are a few areas that need to be investigated in the upcoming years, which will help insurers drive their AI-powered customer retention strategies. Data used in the years to come will focus more on cartographic and psychological usage in various countries, making it a more reliable and better predictor of future events. The change in modes of communication, such as email, text messages, chat boxes, and the use of media other than newspapers or the internet, is increasingly focused on study. The second important point to note is the increasing reliance not only on external factors, but also on unemployment and healthcare costs, which will receive more attention. Automation will also depend on AI systems as they become more robust and reliable. Finally, the insurer's focus will shift more and more to customer participation data and other related policy data. Based on this, the insurance expiration date of vehicles and the importance of other connected insurance policies will be assessed, and insurance offers will be given to potential good customers using AI systems.

The key issue, however, will not be in developing strategies based on data but in bringing these strategies to successful implementation. Success will be driven by a new parameter: valuable customer feedback and social media feedback from the actual buyers of these insurance policies from individual companies. Results will be interrelated with the amount of discount offered, which will be viable for the insurance companies to keep within a certain threshold. In the future, alliances and partnerships with technology companies will be game changers for strategic innovation in this context. Finally, there will be more focus on upcoming risk analysis because of the integration of AI algorithms in all types of policies.

7. Conclusion

Abstract: In this essay, potential challenges in customer retention are explored for the European insurance industry. With the evolving expectations of today's customer, an increased level of personalization is required to obtain and keep their loyalty. Artificial intelligence (AI)-empowered technologies can support firms in overcoming this challenge by suggesting individual, tailored actions based on their unique customer profiles. A differentiated approach, individual customer communication, and a strong focus on customer feedback combined with a continuous learning process are identified as key enablers for efficient customer retention strategies. The benefits of such approaches are demonstrated, and opportunities for the future resulting from the continuous learning process are drawn. Insurers with a significant customer base can use data-driven approaches to personalize the management of their customer base to optimize the customer lifetime value obtained. This includes suggesting individual actions that help the customer effectively manage risks and prevent loss events adapted to their specific situation. AI technologies can help insurers provide these services, especially to their private customers, at an economically reasonable cost. AI technologies have the potential to substantially decrease the cost of providing tailored services to work with noise-impacted data and provide insights into customers' real needs.

Conclusion: Even though insurance penetration is rather high in Europe, firms in this industry face difficulties in retaining their customer base. Customers are shopping around, possibly switching after the full insurance life cycle or because they are unsatisfied with the claims handling process. The management of a vast proportion of customers requires specialists and underwriters to provide adequately personalized advice and automated solutions that go beyond current practices. Large insurers acknowledge the potential of AI technology and are already looking into its application in their organizations. They realize that in the future, the insurers' ability to hold on to the customer base depends not only on pricing and underwriting capabilities but also on service personalization. Firms could use AI applications to provide additional support in helping the insurer get to know the customer better. This includes use cases that advise underwriters on the adequacy of the present risk solutions, help claim adjusters find signs of leakage regarding the real claims severity, help identify increased default risk and the solvency development for both ordinary and commercial clients, and allow agents and customer service units to work more efficiently and give personal advice.

This could substantially increase the retention of slow-churning disloyal and strongly loyal customers who are willing to buy other products.

Reference:

1. S. Kumari, “Cybersecurity in Digital Transformation: Using AI to Automate Threat Detection and Response in Multi-Cloud Infrastructures ”, J. Computational Intel. & Robotics, vol. 2, no. 2, pp. 9–27, Aug. 2022
2. Tamanampudi, Venkata Mohit. "Automating CI/CD Pipelines with Machine Learning Algorithms: Optimizing Build and Deployment Processes in DevOps Ecosystems." *Distributed Learning and Broad Applications in Scientific Research* 5 (2019): 810-849.
3. Machireddy, Jeshwanth Reddy. "Data-Driven Insights: Analyzing the Effects of Underutilized HRAs and HSAs on Healthcare Spending and Insurance Efficiency." Journal of Bioinformatics and Artificial Intelligence 1.1 (2021): 450-470.
4. Singh, Jaswinder. "Social Data Engineering: Leveraging User-Generated Content for Advanced Decision-Making and Predictive Analytics in Business and Public Policy." Distributed Learning and Broad Applications in Scientific Research 6 (2020): 392-418.
5. Tamanampudi, Venkata Mohit. "AI and DevOps: Enhancing Pipeline Automation with Deep Learning Models for Predictive Resource Scaling and Fault Tolerance." *Distributed Learning and Broad Applications in Scientific Research* 7 (2021): 38-77.
6. J. Singh, “Combining Machine Learning and RAG Models for Enhanced Data Retrieval: Applications in Search Engines, Enterprise Data Systems, and Recommendations ”, J. Computational Intel. & Robotics, vol. 3, no. 1, pp. 163–204, Mar. 2023.

7. Tamanampudi, Venkata Mohit. "AI Agents in DevOps: Implementing Autonomous Agents for Self-Healing Systems and Automated Deployment in Cloud Environments." Australian Journal of Machine Learning Research & Applications 3.1 (2023): 507-556.