

AI Is Transforming Insurance With Five Emerging Business Models

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INTRODUCTION

Artificial Intelligence is transforming the way we work and our personal lives (Faraj et al., 2018). More generally, software is taking over more and more processes in organizations, often changing their business model (Alt et al., 2020). This digital transformation is also happening in the insurance field. The impact of AI in insurance is in some ways similar to other sectors of the economy, but in other ways, different. Insurance has some particularities, and events such as AI transformation, recession, and pandemics affect it differently. It is therefore important to understand the adoption of AI and how this will influence insurance business models. An insurance business model must be effective and durable because insurance faces several challenges, such as more pandemics, constantly changing regulations, climate changes, unpredictable weather, and fierce competition (Kannan & Bernoff, 2019). There are many opportunities offered by technology such as AI, big data, cloud computing, IoT, blockchain, and 5G. Machine Learning (ML) and Deep Learning (DL) offer learning that can be supervised or unsupervised, making AI more capable and more accessible to organizations (Kraus et al., 2020). All these separate technologies are converging, creating synergies, and amplifying their impact (Dietzmann et al., 2020). Insurers have a role in shaping AI and its impact. Additionally, consumers and the government also have their roles. The government needs to develop and adapt laws and regulations. Insurers face sociotechnical challenges with AI from within the organization. These can include the data, the people, and the processes. The data is often not large enough in volume or quality to effectively train AI or to use AI to perform evaluations and underwriting. Because of the increasing role of technology, there is also an increasing role for technology providers. Insurers' personnel need new skills and training to implement AI.

While we are looking at the whole insurance sector, it is important to recognize that there is a distinction between insurers that attempt to cover all the insurance services for the consumer and those that focus primarily on one type of insurance. In the data-driven economy, data, its sources, and how these are utilized, is another way to explain a business model. The impact of AI and other technologies such as IoT and blockchain are so important that the sociotechnical capability to utilize them is more significant today than in the past. Currently, most implementations of AI replace specific processes that had specific challenges in the past. To understand the adoption of AI, we must understand each organiza-

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tion's present state and their journey as an insurer in utilizing technology in general, and AI specifically. Identifying the transformative effect of technology on business models is a popular way to contribute to our understanding of new business models (Veit et al., 2014). Therefore, the research question is: "What are the emerging business models in insurance caused by AI and data technologies?"

This research found empirical support for five emerging AI-driven business models in insurance: (1) Focus and disaggregation, (2) absorb AI into the existing model, (3) incumbent expanding beyond model, (4) dedicated insurance disruptor and, (5) tech company disruptor. The following section is the literature review followed by the methodology section that explains how the case studies were identified and explored. Then the analysis of four exemplar cases is shown, a discussion on the validity and value of the business models is identified, and finally the conclusion is presented.

LITERATURE REVIEW

The literature review covers three areas. Firstly, artificial intelligence and related technologies, secondly, the current literature on business models, and thirdly, current trends in insurance.

Artificial Intelligence-Driven Automation

AI is spearheading several interrelated technologies, including big data, IoT, blockchain, and 5G (Tarafdar et al., 2019). Additional new technologies, such as quantum computing, are not far behind and could join the aforementioned technologies, further speeding up the disruption (Corcoles et al., 2019). AI includes machine learning and deep learning, offering the ability for a system to learn in a supervised or unsupervised way. Virtual assistants powered by AI, often referred to as chatbots, interact with customers, covering more and more processes as their abilities grow (Zarifis et al., 2021). Big data is enabling a constantly increasing collection of data from people and the environment, and making it more manageable to gain insight and utilize this data (Mikalef et al., 2020). This data is collected directly by insurers, but also purchased from other private or public organizations. IoT is particularly important for insurance, because it enables real time monitoring of information related to risk and automatic payouts without the customer even making a claim. Blockchain and distributed ledger technologies are particularly useful to support decentralized storing and the sharing of data in a transparent and secure way. As insurers are increasingly relying on an ecosystem around them, blockchain can support such collaboration. The step-change in bandwidth that 5G provides supports the other new technologies, but also offers some unique opportunities, such as richer, more immersive, interactions with their consumers (Park et al., 2021).

Business Models

Business Model Theory

There are different perspectives on business models, including a more business or more technology focused perspective (Osterwalder et al., 2005). For insurance, it is increasingly important to take a technology centric perspective. Exploring a business model requires a broad perspective to understand all of the processes of an organization and then to focus on the most important ones. For insurance, it needs to be clear where the organization fits into the supply chain, how they add value, and where they have a competitive advantage over competitors. In this sector, the context is critical. For example, insurance is

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