

Chapter 12.

DIGITALIZATION IN INSURANCE DRIVEN BY CONSUMERS AND TECHNOLOGY

The prominent forces and trends have been impacting the insurance industry operations and performances in the past decade. Digital transformation is at the forefront of these forces, accompanied with the global environment, social and governance agenda and shift in the overall and economic environment triggered by, among other factors, COVID-19 crisis. In contrast with the ultra-low interest rates set by central banks following the 2008 financial crisis, when quantitative easing policy highlighted the stance of monetary policy, interest rates have recently risen rapidly and are expected to remain at elevated levels in the foreseeable future.

In general, digital transformation allows for developing virtual infrastructures and platforms that innovate business processes, services and customer products across different industries. By the manner of innovations, companies and industries periodically reinvent themselves and add to the wellbeing of the society. Customers with regard to the level of service excellence from companies in virtually all industries expect to integrate contemporary digital technologies within their operations and products offered. Many of these technologies have disruptive effects and insurance industry is not an exception.

1. CUSTOMER-CENTRIC DIGITALIZATION IN INSURANCE

Insurance industry features as a mature and stable industry where established business strategies and models proved resilient for the most of the time. A traditional business model “collect premiums and process claims if necessary” does not appear enough to please modern consumers. With the pace of digitization gaining momentum consumers started in big numbers to embrace digital technology, and some of them going as far as increasingly migrating to the virtual way of living through metaverse. Insurers have the ultimate task to adapt to the new technologies and use them to grow their business, instead of treating them as a pure threat to their existence.

Customers typically interact with their insurance carrier once or twice a year. This is in stark contrast with other financial-services industries such as banking, in which customer interactions take place ten to 20 times more often. The low

frequency of customer touchpoints in insurance means that it's extremely important to get each one right³⁹⁶.

It should be kept in mind that dominant distribution model in insurance is referred to as “business to business to consumers”, or B2B2C. There are usually intermediaries that stand between consumers and insurers. They provide a crucial role in the placement of insurance services and servicing end consumers.

Figure 1. Insurance distribution model



Therefore intermediaries such as agents, brokers and banks should be involved in digital transformation of insurance industry. Digital interaction among insurers and their intermediaries is also important. That interaction is especially fertile if it reinforces the role of intermediaries. On the opposite side, there is a chance that digital transformation can disintermediate the agents. Since agents have traditionally distributed insurance products to consumers, disposing of such a valuable sales force and “asset” may entail considerable risks. Instead, insurers can gain if they engage more with downstream partners that are closest to the consumers.

Belgian insurer AG is a good example of how to support agents’ digital transformation. It deployed services that assist agents’ physical and digital presence. AG helps agents’ activity on social media by creating content and developing focused campaigns. It also launched a mobile app (*Pronto*) through which it directs consumers to respective agents who further take care of their needs and thereby enhances up-sell and cross-sell efforts of agents.

The advent of new technologies that changed everyday life of people together with other relevant global trends, like demographics and climate change, set the ground for the response of insurance industry. As an outcome of new reality

³⁹⁶ McKinsey & Company (2023). *Elevating customer experience: A win-win for insurers and customers*, <https://www.mckinsey.com/industries/financial-services/our-insights/insurance/elevating-customer-experience-a-win-win-for-insurers-and-customers>, p. 3. (Accessed March 25, 2024)

insurers observe new risks and changed features of already familiar risks. Demand for insurance products and services spurs insurance companies to respond to the three important themes that grow in relevance for insureds.

Table 1. Trends influencing insurance revenues

Smart economy	Sharing economy	Emerging risks
Smart auto	Freelancer economy	Aging population
Smart health	Auto sharing	Climate
Smart home	Home sharing	Cyber
Smart buildings		Crisis management
Smart manufacturing		Autonomous vehicles
Small ticket		

Source: Accenture (2021). Insurance Revenue Landscape 2025: Innovate for Resilience. Dublin: Accenture, p. 8.

Insurers need to stay relevant in the eyes of the consumers. Consumers are more prone to make business with the companies that are the leaders in digital transformation (Big Tech) and seem ready to interact with them in many instances, even in the insurance industry realm. Apple, Alphabet, Amazon, Meta and Microsoft appear today as a preferable choice in the minds of consumers for obtaining many products and services.

Consumers have become accustomed to the convenience, personalization, simplicity, and speed of interacting digitally via social media services and mobile applications offered by players such as Amazon, Airbnb, Facebook, Google and Uber. As a result, consumers increasingly expect insurance companies to offer digital services with compelling user interfaces and experiences³⁹⁷.

According to Accenture survey³⁹⁸ the portion of consumers who say they are likely to consider buying insurance from online service providers like Amazon or Google is on the rise, from 22% to 27%. The option of buying insurance from a supermarket or retailer is also very likely for 24% of respondents in 2020, a jump from 18% in 2018.

³⁹⁷ Muyelle, S., Standaert, W., Basu, A., Everaert, E., & Decraene, W. (2018). *Digital Innovation in the Belgian Insurance Market*. Ghent: Vlerick Business School.

³⁹⁸ Saldanha, K., Staehle, T., Schlieker, A., Mecca, F. A. & Schmittlein, G. (2021). *Guide insurance customers to safety and well-being*, <https://www.accenture.com/us-en/insights/insurance/guide-insurance-customers-safety-well-being>, p. 3. (Accessed March 25, 2024)

This means consumers are feeling more comfortable to switch to alternative distribution channels when it comes to insurance products, but leaves open question of whether that also includes switching to the alternative non-traditional insurance providers. This reasoning encompasses InsurTech firms as an alternative insurance provider as well.

Companies are now expected to engage via channels such as text, chat, voiceassistants, websites and mobile devices for customer acquisition and service. If a company does not offer a positive digital experience, many customers, particularly younger people, will move to industry competitors that offer better customer experiences digitally or they may turn to adjacent industries that offer the service as an “add on”³⁹⁹.

Pisoni (2021) argues that in order to embrace new technology insurers may be pushed to collaborate with insurance industry start-ups. Insurance companies may buy from startups, in effect purchasing their services to improve operations (e.g. software as a service). Another strategy is partnering with startups in a sense of bundling offers of parties involved. A partnership can be implemented along the customer value chain. Third option is to invest in startups. This strategy is common for big insurers (AXA, Allianz, AIG, Generali). Financially capable insurers commonly dedicate special funds for financing promising startups. Before investing, insurance company should have clear what the expected benefits and impact, startups will bring in terms of company operations.

Consumers are ready to go digital and in order to stay in line with them financial industry players (e.g. insurers) need to enhance digital capabilities⁴⁰⁰.

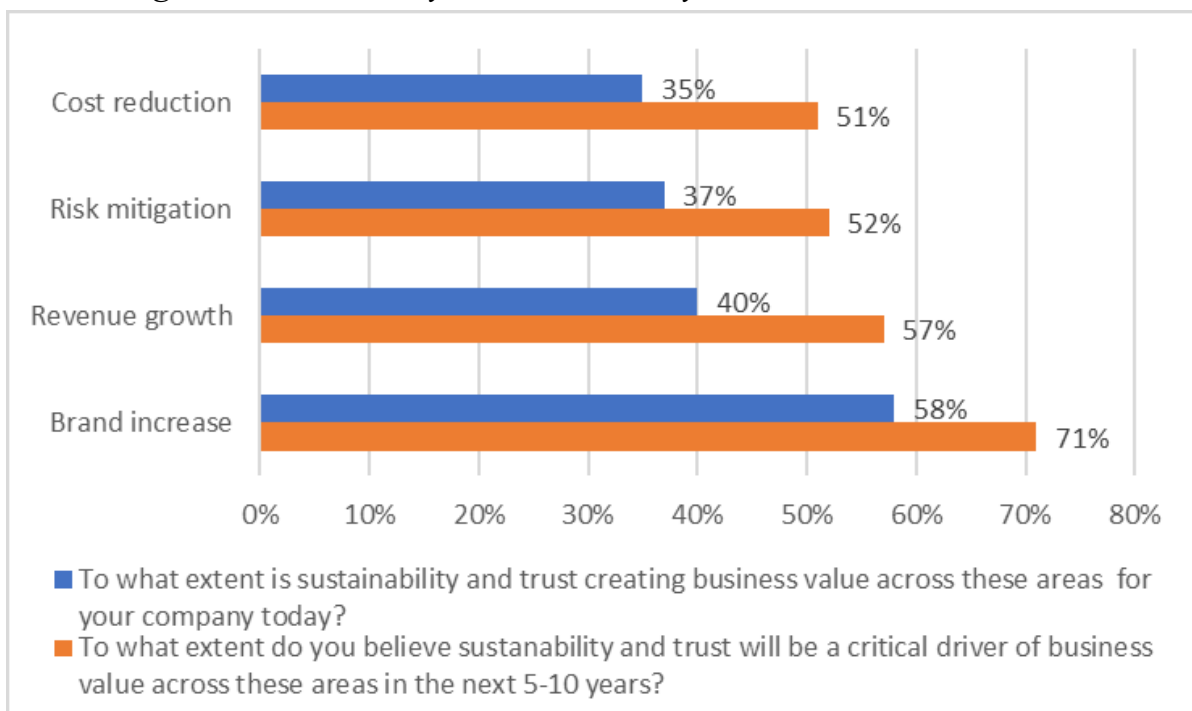
Segmentation of consumers according to their age conveys that different generations have a varying appetite towards digital insurance offerings. Millennials (consumers born between 1981-1996) and Generation Z (adults born after 1996) predominantly demand insurers to offer digital way of interacting. They also create demand for bundling digital offerings with supporting sustainability goals, for example with reference to the affirmation of the sustainable travel and shopping. These two groups are also interested in insurance products and services that steer them in the direction of safety, sustainability and comprehensive well-being (physical and financial).

³⁹⁹ Pisoni, G. (2021). Going digital: case study of an Italian insurance company. *Journal of Business Strategy*, 42(2), p. 108.

⁴⁰⁰ Živković, A., Stankić, R., Marinković, S., & Lukić, V. (2022). *Bankarsko poslovanje i platni promet*. Belgrade: Faculty of Economics, University of Belgrade, p. 642.

Enterprises that carry out sustainable environment practices, take care about safety and well-being of their employees, contribute to their communities will be rewarded with consumers preferences going in their favor. Millennials are especially prone to be associated with companies that are good corporate citizens, in the sense of ESG metrics (Environmental, social and governance issues), when acting in distinctive roles as consumers, employees or investors. A prominent benefit of complying with ESG requirements is strengthening the company’s brand and raising loyalty among consumers. This benefit can then be easily translated into improved financial performance⁴⁰¹.

Figure 2. CEOs Study on sustainability and business value links



Source: *The United Nations Global Compact and Accenture Strategy (2019). CEO Study on Sustainability – The Decade to Deliver: A Call to Business Action. New York: United Nations, p. 37.*

Since digitally literate consumer is almost invariably a sustainability goals supporter, a digital savvy insurer is expected to be a sustainable insurer as well. It should reconcile the need for business growth with the sustainability goals and show commitment to building a sustainable future. At the end, one might argue that sustainability is good for business. In Figure 2. are summarized

⁴⁰¹ Lukić, V., Popović, S., & Živković, A. (2022). The impact of ESG policy on the financial sector. *Development of modern insurance market – constraints and possibilities*, Kočović, J., Jovanović Gavrilović, B., Stojanović, Ž., Mladenović, Z., Trifunović, D., Koprivica, M. (eds.), Belgrade: Faculty of Economics, University of Belgrade, p. 205.

responses of Chief Executive Officers relating to the potential benefits of pursuing sustainability in their way of doing business across four areas of interest.

Consumers aged over 55 years also express preference for digital servicing, like processing claims in the digital manner, using video or chat communications with insurers, instead of visiting insurers' office space to conduct claims representation.

1.1. Shared-value insurance concept

Consumers grasp benefits of digital technologies and using data. Acquiring a bulk of data related to persons' behavior and habits, as long as it is collected in the manner not colliding with protection of private data, allows insurers to personalize their offer in the interest of consumers. Consumers would not mind sharing personal data in exchange for better insurance pricing or prospective discounts. Rewards for data sharing could come in the form of reduced premium, perks or discounts on non-insurance products and services. Examples of data that may yield a wanted outcome for the consumers consists of health data and driving data. Health data reveals main health parameters about insured person that are collected in real time and on a continuous basis. It may verify a healthier way of life of person seeking a health related insurance products (life and health insurance), like doing regular exercises.

Customers' attitude with regard their personal data makes sense. They want to be rewarded for positive behavior. If they preserve their data for themselves, that will not earn them any value, in effect the data is worthless. Accordingly, they want to monetize value resided in their data and are demonstrating willingness to trade it for lower insurance prices and similar incentives.

Instructive examples of data sharing arrangements at mutual benefits between individuals, health and wellness companies and insurance companies abound. Vitality Health and Life Insurance, owned by financial services group Discovery, was among the pioneers to launch a shared-value business model in health and life insurance and offers special insurance plans linked to adherence to the rules of healthier life (Vitality Programmes).

Vitality describes itself as the world's largest behaviour change platform, which guides and incentivizes people toward better health⁴⁰². It has strong links with financial services industry and markets itself as a scientific venture that

⁴⁰² <https://www.discovery.co.za/vitality/what-is-vitality> (Accessed April 2, 2024)

combines insights from behavioural economics and clinical science. The main benefit for members is to better understand and improve their health. Vitality motivates members to get physically active, eat healthier food and do regular health checks. In return, it provides a variety of rewards the healthier lifestyle each member accomplishes.

A shared-value insurance model comprises positive effects not just on individual members but also on insurers and society. Insurers enjoy lower claims and better portfolio of clients. The odds for making negative selection, having as insured persons those that pose the largest risks, are significantly lowered. Whenever insurers employ personal data they can narrow risk pools more accurately. Lower claims and better selection together yield a better margins and cost savings for insurers that altogether translate into increased profits.

Vitality, as a health company, has been around for more than two decades and has learned that positive behavioral change is more effective when insurance and financial services products are integrated into its life habits changing programme. Vitality relies upon different wearables (smart watches, mobile phones) and other tech-induced devices and tools to measure and verify members' behavior and engagement with healthy habits.

In addition, a shared-value insurance model is beneficial to the society as a whole. The society gains, apart from being consisted of a vastly healthy people, also from reduced costs of healthcare and higher productivity of workforce (healthy people are more productive). In sum, material benefits that arise from the shared-value insurance model are divided across people (financial gains through lower prices and discounts), insurers (higher profits) and society (lower healthcare costs).

With shared-value insurance, client personally controls insurance premiums and insurance is no longer a pre-set protection mechanism against an insured event. Interestingly, a premium ceases to be determined by existing conditions at the time of insurance underwriting. Instead of a negative selection phenomenon that pervades insurance industry, opposite case is observed – positive selection in which client base comprises healthy and physically engaged people. Increased sale of insurance, which is normally observed when an insurance company adopts a shared-value insurance and Vitality has a vast network of insurance partners across the world, is driven by the best risks at the market, i.e. those clients that pose the least risk for the insurance company.

A fresh and technology driven innovative insurance products do not end with the health and life insurance. In the space of auto insurance there are possibilities to launch insurance products that were not feasible before due to the lack of devices allowing for monitoring of actual car usage and drivers' behavior.

In the manner similar to the Vitality program's impact on developing people's healthy habits, a combination of insurance product and driving behavior data analytics may induce change in the amount of motor vehicle insurance claims. A prudent driving behavior should be rewarded in parallel with savvy health behaviour. A good driving behavior characterizes less frequent sudden braking, strong accelerating and high speed driving, all of which may be recorded by telematics technology. Vehicle telematics is a combination of car installed telecommunication and informatics devices that provide recording and transmitting important vehicle data (speed, braking, location etc.).

Conceptually, decreased insurance risk and more favorable price of vehicle insurance need to be linked to the good driving behavior, and vice versa, prudentless driving behavior leads to the increased insurance risk and should be priced higher price of vehicle insurance. Insurers can not pursue this task alone and need to partner with other relevant companies to present to customers personalized offers based on behavioral data and analytics.

The insurers are at present capable of providing financial incentives, embedded in their products, that stimulate improvements of people's driving behaviour and bring about lower insurance claims costs. It seems fair to reward drivers for safe driving, since they reward insurers with lower claims. Vehicle insurance is another example of fertile application of shared-value concept and methodology where insurance meets digitization for the benefit of individuals and the society.

Electric vehicles are the best prepared for shared-value auto insurance due to rich set of advanced electronics installed in them. Tesla, as a global leader in electric vehicles, took a step forward with Tesla insurance⁴⁰³. Tesla launched its insurance solution for drivers in selected US states. The advantage of this special insurance is that it does not require installation of additional hardware in car. The moment the car has left an assembly line, it is ready for new type of insurance.

A conscientious and responsible driver likes to hear that her premium is based on how she drives, as opposed to basing premium on information that has little

⁴⁰³ <https://www.tesla.com/insurance> (Accessed April 4, 2024)

to do with her driving and on factors that are outside of the driver's control. The driver needs to install a Tesla app (available only at App Store) through which it communicates with insurance provider and has access to all the necessary parameters of interest for the policy and driver's safety score. The policy is being bought within application.

The premium is dependant on Safety Score^{BETA} as a benchmark for driving safety behaviour. Different metrics are used for calculation of Safety Score^{BETA}. Those metrics include eight factors: hard braking, aggressive turning, unsafe following, excessive speeding, late-night driving, unbuckled driving, forced autopilot disengagement and forward collision warnings per 1000 non-autopilot miles. All these data are collected using various Tesla car sensors and Autopilot software. Due to using these data one can draw an underlying driver's profile – how and how much she drives.

Safety Score^{BETA} is a proxy for the likelihood that driving behaviour may result in a traffic accident where a driver is blamed for causing it. Safety Score is calculated on a daily base, but for the sake of determining premium overall Safety Score is relevant. Daily Safety Scores are combined into the aggregated Safety Score, which is a mileage-weighted average of daily scores. Safety Score ranges from 0 to 100, where a higher score indicates safer driving. The overwhelming majority of drivers are expected to have a Safety Score of 80 or higher. The driver's initial Safety Score, after signing up for insurance, is set at 90.

Safety Score is updated at the end of each month (for each Tesla vehicle insured through Tesla App). So based on the driving behaviour in recent 30 days, Safety Score has been regularly recalculated which impacts driver's premium in the following month.

In parallel with bank credit products that are commonly offered with fixed and variable interest rates, insurance industry with telematics seizes the same chance and widens its auto insurance product range by offering fixed and variable premium's car insurance.

Application of digitization and technology in vehicle insurance extends to other cases as well. Selected consumers prefer to receive a personalized offers with personalized pricing in the form of "pay-as-you-drive" auto insurance. If some drivers foresee to drive less in the near future than they did on average before, than personalized offer that takes into account usage-based determined premium makes sense for both driver and insurer. Of course, this reasoning from the insurer's standpoint reciprocally implies that the premium reduction

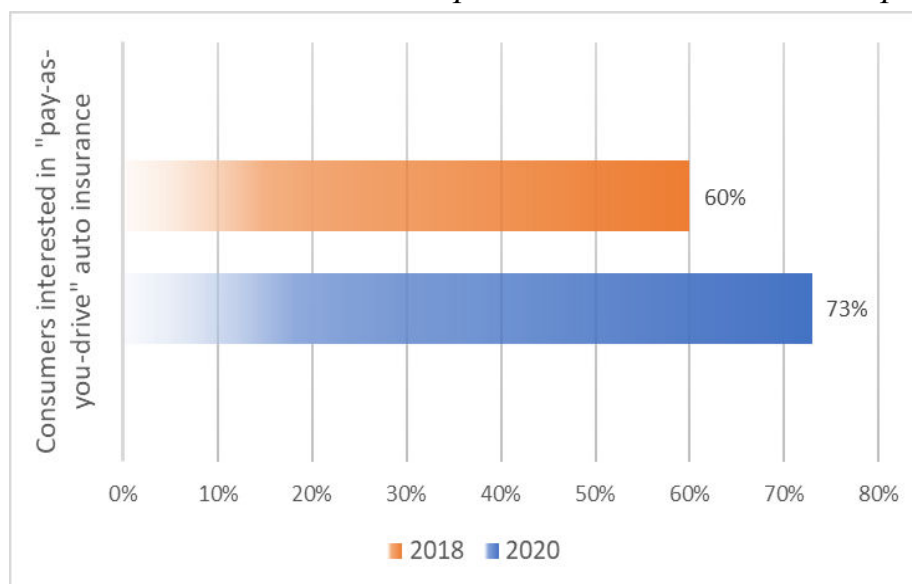
from less used cars should be offset by increased revenue from more intensively used cars, just like from all other assets that are constituent of the sharing economy.

In the shared-value model, insurance coverage is projected to become more customized to actual risk as insurers learn more about the way consumers live, take care of themselves and drive.

Shared-value insurance in a full sense underlines merits of digitization and digital interaction between insurers and their clients.

Figure 3. displays overwhelming evidence that consumers demand personalized auto insurance pricing as a model of insurance.

Figure 3. Consumers interested in personalized auto insurance pricing



Source: Saldanha et al. (2021), op. cit., p. 7.

The issue of trust is the main factor that may hinder the application of shared-value insurance in practice. The portion of consumers that put a lot of trust in insurers to look after their data (32%) is twice lower than their portion that stands ready to share significant data on their health, exercise and driving habits (69%). This may come as a byproduct result of a lot of public and media covered cases of data breaches in many domains and news of cyber attacks on insurers being reported along with plenty of attacks on other industries' companies. When it comes to age demographics, older consumers are more sceptic about sharing their data and find it annoying and unpleasant.

On the larger scale, it seems that consumers have recently become increasingly aware of two data security breach risks. First, that their private data may unintentionally leak out of insurers to third parties due to malicious cyber attack. Second, that with the consent of insurers their data may be shared with third parties connected with insurer beyond their knowledge. Consumers understand that once their data has been shared, maintaining full control over it becomes almost elusive aim.

If consumers continued to persist with insisting on protecting their data and refusing to share it, it could undermine the expansion of personalized insurance pricing and providing personalized advice and service. In a current state of affairs, it appears that consumers' propensity to get more personalized service has prevailed over data security concerns.

Providers of insurance can provide assurance that they will take care about customer privacy and her/his data. Tesla insurance argues that it does not share your data or monitor your location, and that personal data stays with consumer. Driving behavior data is used exclusively for calculation of Safety Score^{BETA}.

2. DIGITAL TECHNOLOGIES AS ENABLERS OF DIGITALIZATION IN INSURANCE

In a today's world of proliferation of new technologies it is challenging to pinpoint the most relevant technologies for specific industries, and close to undoable to list all the use cases of their application. Eckert and Osterrieder (2020) include big data, artificial intelligence, the internet of things, cloud computing and the distributed ledger technology with blockchain as a major digital technologies that are expected to shape the digital future of insurance industry. Figure 4. describes main features of specific technologies and opportunities for application they provide to insurers.

Each company is prone to get know better its customers and tends to collect as much information about them as possible in order to draw their the most precise profile. That is what big data technology serves to. In contrast with traditional processing of solely structured data, big data allows processing and analyzing of both semi-structured and unstructured data. It provides insurer with a variety of data on customer from different sources that complement each other. Collected data is qualified for further analysis and investigation that sheds new light on customer behaviour. Furthermore, insights that stem from variables embedded in data may be drawn despite their correlated nature, which is not the case with conventional quantitative analysis in which problem of multicollinearity exists.

Artificial intelligence (AI) can be explained as capability of machines to mimic human mental processes. Learning and reasoning have been long perceived as processes exclusively linked to the humans. For instance, voice assistants Siri (Apple) and Alexa (Amazon) are based on AI and they interact with users as if they were a real persons. AI has advanced and presently rests on algorithms that help discern patterns in data so as to allow machines to learn without human intervention and guidance.

Figure 4. Description of major technologies for the insurers with related use cases

Digital technology	Use cases
Big data	Underwriting and pricing, Customer lifetime calculation, Customer segmentation, Customer targeting, Fraud detection, Cross- and up-selling recommendations, Process optimization
Artificial intelligence	Customer segmentation, Cross- and up-selling recommendations, Ratemaking and underwriting, Fraud detection, Increasing quality of the customer experience with regard to sales and service processes, Chatbots, Digital assistants and advisors
Internet of things	Ratemaking and underwriting, Digital monitoring and usage-based insurance, Customer targeting, Holistic insurance platforms, Cross- and up-selling recommendations, Fraud detection, Digital notification of loss with automated assistance service
Cloud computing	Increasing quality of the customer experience, Cross- and up-selling due to cloud-based insurance products which can be increasingly customer-oriented, Implementation of partnering models to foster the collaboration
Distributed ledger	Smart contracts, Risk assessment and insurance ratemaking, Fraude detection, on-demand insurance/parametric insurance, Peer-to-peer insurance

Source: Eckert, C., & Osterrieder, K. (2020). *How digitalization affects insurance companies: overview and use cases of digital technologies*. *Zeitschrift für die gesamte Versicherungswissenschaft*, 109(5), pp. 336-340.

The first AI models to work with text were trained by humans to classify various inputs according to labels set by researchers. One example is a model trained to label social media posts as either positive or negative⁴⁰⁴. In this context a human “teaches” the model what to do, so AI is not autonomous. It turned out that huge volume of data is unmanageable by humans and that only

⁴⁰⁴ McKinsey & Company (2024). *What is generative AI*, <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-generative-ai#/> (Accessed April 1, 2024)

machines have capability to address this data burden. As a result computers can behave as humans and continually and fastly improve their capabilities and performance.

Internet of things opens new avenues for insurance industry through enhanced connectivity of vast array of devices. Without it novelties such as usage-based insurance or insurance on-demand would never realize. In essence, internet of things is important for expanding array of insurance products.

Internet of things starts with small devices that are connected to the internet (wearables, smartphones), grows to bigger devices (home appliances and home as a unique object) and ends with big geographies such as “smart” cities. All included objects transmit data and build a wide web of digital monitoring of insureds and their assets in the interest of insurers. IoT sensors are creating new ways to track, price and promote health, home safety and security and auto insurance.

Each time a networked object transmits relevant data may be observed as a moment of customer interaction. The customer interaction should not be viewed as a one-way communication, since the crucial benefits of internet of things may stem from communication going from insurer to insureds. Insurers may take a route of notifying insureds on how to improve loss prevention or reduce losses based on acquired data from connected devices.

Cloud computing is centered around sharing storage and computing resources. Using cloud computing combines flexible scalability with availability of on-demand service. There are four major cloud service models: Software as a Service (SaaS), Platform as a Service (PaaS), Infrastructure as a Service (IaaS), and Database as a Service (DBaaS).

Cloud computing is a good example of well thought outsourcing where insurer saves on the cost of acquisition of hardware and software, and their installation and maintenance at the same time. SaaS provides access to the state-of-the-art software. Cloud computing lays ground for implementation of internet of things technology where large volume of data is generated and needs to be timely processed. Cloud computing facilitates partnering with other companies where collaboration is accompanied with exchanging data and interoperability of information systems. Customers may benefit from cloud computing by pursuing self-servicing that adds to satisfactory customer experience.

Distributed ledger technology deals with databases and underlies unparalleled method of recording data and transactions⁴⁰⁵. Blockchain is the most notable example of distributed ledger technology. It is argued that blockchain is forgery-proof system due to cryptographic elements in authenticating data that enters database. The relevant data may relate to the transactions, identities, contracts etc.

Blockchain eliminates role of the intermediary and derives trust upon special algorithm. Distributed ledger is suited to both within organization transactions and processes, and in connection with external parties.

Distributed ledger may be adequate for processing claims related to health insurance in which a decent number of subjects participates; such as a hospital, general physician, doctor specialist, patient and pharmacy. Information flow among all these subjects may be streamlined by relying on distributed ledger technology.

Smart contracts seem appealing to the insurance industry. Whenever a predefined conditions occur vis-à-vis an insurance contract, a payment may be triggered so as to settle claim.

Digital applications in insurance that result from new technologies have a reflection on customer satisfaction. Customer satisfaction drives customer loyalty and retention rates. Eckert, Neunsinger and Osterrieder (2022) illustrate the opportunities to increase customer satisfaction and emphasise digital applications' impact on insurers at four major customer touch points: contract conclusion, contract modifications, the event of damage and further contacts. They contribute by identifying and analysing a set of digital applications and distinguish between front-end and back-end functionalities and assess the opportunities of these applications at the major customer touch points. Their main finding is that the set of digital applications strengthens the position of sales and marketing, simplifying and accelerating (standard) processes, along with creating intuitive processes for customers, increasing efficiency and enhancing the density of customer interaction. However, due to financial limitations and high costs, it is impossible for any insurance company to develop a full set of digital applications in its digital strategy

Technology trends may be categorized in many ways. Capgemini (2024) sliced innovations in six containers that encompass users' digital experience,

⁴⁰⁵ Stankić, R., Lukić, V., & Popović, S. (2023). *Elektronski platni sistemi*. Belgrade: Faculty of Economics, University of Belgrade, p. 330.

comprehensive modes of collaboration, transformation of data landscape, excelling in processes flows, applications portfolio modernization and rethinking of infrastructure.

3. LOCAL DEVELOPMENTS IN THE DIGITALISATION OF INSURANCE

Insurance as an industry suffers from a lack of knowledge and understanding of its products in the general public. Insurance is pervaded with inherent complexity. Buying insurance appears frequently as an unsettling act for customers, due to which very often final purchase of insurance does not occur. Customers find themselves confused and need to learn about different insurance products in order to make an informed decision. In the process of learning customers lean onto agents, whom they visit and take an advise from on several times, before reaching final decision. Even after the purchase customers are still missing important insights into the value insurance provides. This customer behaviour and reliance on direct communication and human advice is not unique only for insurance services but for the banking too. For example, in dealing with complex banking products, like mortgages and auto loans, consumers favor visiting branches and communicating face to face with bank officers. On the other hand, simple and routine tasks like bill payments or checking account balance are far more conveniently executed via mobile banking channel⁴⁰⁶.

The everlasting task of insurers community is to educate their customers. In emerging countries, which do not have a longlasting culture and habits of using insurance products other from those that are mandated by law, a matter of insurers' social responsibility is to provide the education needed about insurance. Thereby, insurers are devising new ways to raise awareness of insurance offerings. Education is a convenient path to strengthen engagement with consumers and prospective entrance into consumers' daily lives.

Educating people about savings is a good start. In Serbia and other South-east European countries the percentage of savers is low. While on average in Central, Eastern and Southeastern Europe (CESE) the percentage of individuals who save is 40%, in Serbia it is somewhat below 25%⁴⁰⁷. In addition,

⁴⁰⁶ Lukić, V., Čolić, L., & Prica, I. (2019). Perspectives and adoption of mobile banking in Serbia: The case of young adults. *Ekonomika preduzeća*, 67(5-6), p. 342.

⁴⁰⁷ Beckmann, E. (2019). Household Savings in Central Eastern and Southeastern Europe: How Do Poorer Households Save? *World Bank Policy Research Working Paper*, No. 8751, Washington, DC: World Bank.

percentage of individuals who save through formal savings instruments (banks, contractual savings, capital market savings), as opposed to cash savings, is below 20% in Serbia. Out of a quarter population in Serbia that has some savings, three out of four savers hold bank accounts (current account or savings deposits). Contractual savings (pension funds and life insurance) in CESE is held by 23% of savers. In comparison to neighbouring countries: Bulgaria, Romania, Bosnia and Herzegovina, North Macedonia and Albania; Serbia is the only country that has percentage of savers with life insurance above 10%.

Furthermore, a feature that dates back to the transition period of 1990s in East Europe is that savings is commonly held or denominated in foreign currency. On average, 44% of savings deposits and 60% of cash savings is denominated in non-domestic currency. Though, for Serbia respective percentages are 95%, and are far above those percentages for other countries.

Dynamic Life programme, created by Generali Insurance, presents itself as a novel method of savings in the form of life insurance. Dynamic Life may be perceived as a startup that belongs to InsurTechs subcategory of startups. Customers can build insurance coverage whenever they spend money at selected retailers or purchase products of partner companies. Funds are contributed in the form of rebates (cashbacks) from retailers and participating companies. After each purchase with partners, a customer gets a cashback that goes towards purchasing of life insurance coverage. In order to join Dynamic Life programme a person needs to install a mobile app with which it can generate a QR code to be scanned at the point of sale (in the case a retailer is participant) or scan a bill separately through mobile app to confirm that bought items are included in the program (in the case retailer is not participant).

The Dynamic Life programme is appealing to customers because it seems like customers keep going with their life and purchases as usual, while at the same time they are obtaining “add-on” value in the form of life insurance. The customers are building coverage without paying for it, and it turns out as if they have been getting free insurance coverage from partners.

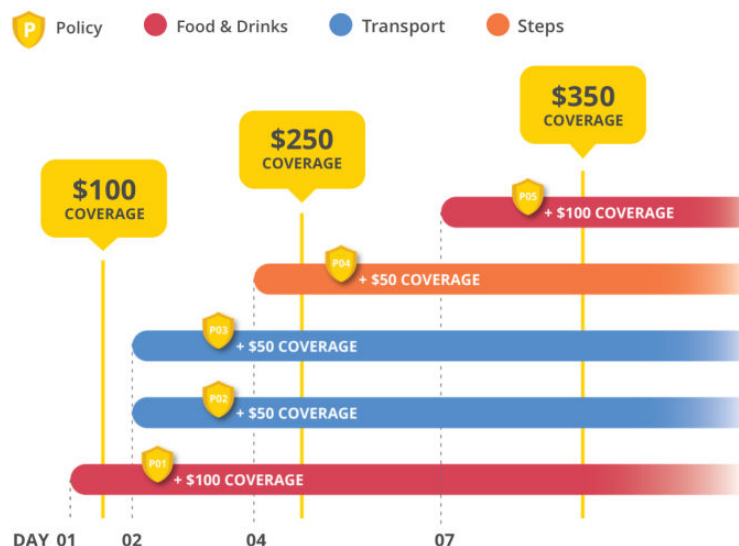
Dynamic Life App has everything that is needed to penetrate everyday’s life of customers. The customers are expected to use app on a daily basis and become closely familiar with insurance products value and spectrum. Loyalty to insurance carrier is also expected, since Generali should be their first choice when looking for other insurance products. The monthly premium is flexible and can range from 2000 to 8000 dinars. The maximum yearly premium is 96000 dinars, and any amount over that sum is refunded to the customer. In the case customer does not accumulate enough contributions through purchases to

fund monthly premium, he can make payments on its own to compensate for missing amount. There is also an option of personal contribution by triggering a micro sized contribution payment by rounding bill amount with partners. Duration of insurance coverage is set at 15 years.

A platform with commensurate idea can be found in Singapore, where NTUC Income and Visa card have launched Snackup App. The difference is that partners effectively buy insurance coverage for consumers in precise amount (50\$, 100\$, 200\$, 500\$ etc.), whenever consumers spend with partners. Also, customer can choose between three different types of insurance: term life, critical illness or personal accident, or make combination of some of them, or choose all of three. The free insurance coverage lasts for 360 days, starting from the date of policy issuance (respective purchase). As long as customer is active and obeys to his regular buying habits, he may count on never expiring coverage, because as one policy expires the others remain in place. That way the insurance coverage has been immanently revolving. Snackup, besides micro insurance, offers a micro investment-linked plan (ILP) contributed also by merchants, that allows making investments in investments units in amount as low as 1\$.

The Snackup platform introduces for the first time a concept of continuous underwriting which may become an important element in the future of underwriting.

Figure 5. Example of insurance coverage increase on the Snackup platform



Source: <https://www.snackbyincome.sg> (Accessed April 10, 2024)

Snackup is focused on devising micro insurance products with premiums starting as low as 0.3\$ (0.5\$, 0,7\$) stemming from which are micro insurance policies issued. Everytime a customer performs predetermined lifestyle activity,

a purchase of chosen insurance coverage is carried out. There are eight designated lifestyle activities: Food & Drinks, Transport, Groceries, Retail, Utilities, Entertainment, Petrol and Steps. A customer can link a particular lifestyle activity to the specific micro insurance product (e.g. Transport to the SNACK-Accident). Steps is a special trigger for purchasing (acquiring) insurance coverage which does not imply any spending of monetary value. It is validated by Fitbit/Garmin/Apple Health services as a trusted activity source. Each time customer hits 5000 steps recorded at Fitbit/Garmin/Apple Health account, a micro insurance coverage will be issued.

Apart from examples of retail insurance offerings discussed above, one can detect digitalization impact in other areas of business, like agriculture. DDOR TERRA is a unique technological solution intended for all agricultural producers who insured their crops and fruits in DDOR Insurance⁴⁰⁸. DDOR Terra as an interface with customers uses mobile app (currently restricted to the Google Play store).

It serves two purposes: 1. Access to the active insurance policies, and 2. Reporting incidents that result in damages to crops and fruits. Mobile app should streamline the processing claims, with improved transparency, simplification and speed of processing, that accelerates claim assessment and settlement. The need for direct contact between agricultural producers and those involved in claim assessment and settlement is reduced. DDOR TERRA solution was developed through the partnership with the Biosense Institute that employs a geographical information system models. Complete DDOR TERRA solution comprises web app that is intended for the assessors of crops and fruit claims to better estimate the cause and degree of loss. Serbian Ministry of Agriculture, Forestry and Water Management has been approving a bulk of requests (close to 30 000) for subsidizing agricultural insurance; in order to incentivize agricultural producers towards using agricultural insurance and remove a burden from a state funds when bad weather takes its toll onto land and crops.

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⁴⁰⁸ <https://www.ddor.rs/en/your-land-always-in-the-palm-of-your-hand/> (Accessed April 12, 2024)