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## MANAGEMENT OF DIGITIZATION PROCESSES OF INSURANCE COMPANIES

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### Abstract

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**Keywords:** InsurTech, FinTech, Digitalization, Insurance, IT innovations, Innovation,

*This Recent developments in the insurance industry embrace various Insurance Technology (InsurTech) innovations. To date, there is a lack of structured assessments of InsurTech. Prior research on FinTech fails to clarify how InsurTech can be characterized and what capabilities are employed, and hence, to reveal implications for value creation on firm and industry level. We address this by inductively building a model of InsurTech innovation adopting the grounded theory method. Our empirical data includes 208 InsurTech innovations from a market analysis based on Twitter data and a multiple-case study. The resulting model comprises 52 characteristics and 14 transformational capabilities and is integrated with extant value networks and intermediation literature. The former explains how InsurTech affects firm-level value creation and suggests that disruptive potentials emerge from aligning the transformational capabilities along three interdependent activities. The latter explains the entrance of digital intermediaries and their roles in the personal insurance market.*

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## INTRODUCTION

In the current conditions of world financial and economic development, the role of insurance activities in the economy is becoming more important. The main means of realizing this will be the widespread introduction of information and communication technologies into the activity. It is the possession of reliable and up-to-date information, its collection, reshaping and effective use that serves as the basis for the successful functioning of any enterprise, organization, institutions. Hence, the future development and positive dynamics of the insurance market will largely depend on the improvement of the use of Information Communication Technologies in the operation of the insurance business. This imposition of the issue, that is, the need to improve the use of Information Communication Technologies in the management of the insurance business, assumes that

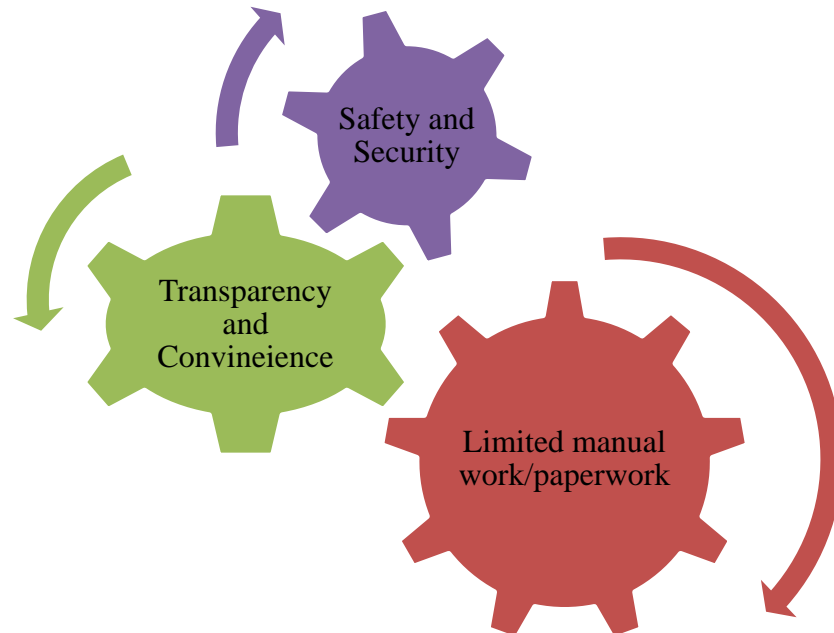
the basic methodological principles and practical directions of the economy depend on information systems. Therefore, the concept and characteristics of information products in the insurance business are an important factor in the informatization of this area. Automation of the main processes and functions in the activities of an insurance company creates the necessary conditions not only for the employee to increase labor productivity, but also for the more engaged in the main tasks of qualified specialists, the comprehensive introduction of marketing tools on the path of further business development. Formalized by concluding an insurance contract between the insurer and the insured, the main condition for concluding contracts is that the parties reach an agreement on financial conditions for risk insurance. The financial parameters of insurance can include insurance premiums, insurance tariffs, insurance sums, franchises and similar concepts. These concepts are at the same time, the basis for the methodological development of the information system of insurance activities. In general, the effective implementation of information and communication technologies can form the informatization of the insurance business in the modern way in the following way, depending on world practice:

- introduction of an Information System complex for automation of basic business processes;
- implementation of customer relationship management systems;
- internet insurance.

### **MAIN DISCUSSIONS**

ERP - systems involving a complete set of insurance activities, such as registration of policies among insurers, maintaining insurance and reinsurance contracts, maintaining brokerage and agency contracts, accounting and employee list functions, are being used based on the requirements of the time. ERP-systems are widely introduced in order to collect initial information about insurance contracts, risks, premiums, payments of any insurance company, as well as other information necessary for the statistical and economic calculations of the company in the future. This system takes into account the fact that there are two-way information exchange systems between the blocks of Accounting, Insurance and reinsurance, establishing reference books, classifiers, maintaining insurance contracts and policies, maintaining reinsurance contracts, entering or calculating the main indicators of contracts, automating calculations on all contracts. Telemarketing, which allows customers to sell services through Information Communication Technologies, also applies to ERP-systems, and modern technologies of the call center relieve insurers of the problems of lack of human resources in the process of communicating with all customers, since all work on this technology is carried out in an automatic way. It would be advisable for insurance companies to use modulated accounting programs that automate the processes of billing insurance premiums and copying policies in order to reduce the time of purchase of insurance products. It is the introduction of modern Information Communication Technologies in the field of service to consumers of insurance services that gives additional advantages in the fight against competitors. SRM-strategies are implemented using a special set of technologies and software that allows you to automate and improve business processes in the field of customer service, sales and marketing. This makes it possible for companies to make lucrative offers to service customers over the optimal period of time, through the most convenient communication networks. One of the

main priorities of CRM-systems is to form effective approaches and attract customers in the development of plans to qualitatively establish a particular insurance company and its services. According to Russian statistics, a five-percent increase in the number of attracted and detained customers led to an increase in profit in the prospect by 84 percent.



**Figure 1. Digitalization of insurance policies**

In the international insurance market, many Insurance Information System products are offered, which we will briefly analyze. The products of TopFinSystems (TFS), a leading supplier of information systems for the Russian insurance industry, provide structured complex products:

- the number of employees of small and dynamically developing companies, consisting of 100-140 specialists, is calculated in accordance with the purpose of buying and introducing systems;
- effective operation of units engaged in sales, as well as the full — functionality-Galaxborot communication technology registration system necessary for units engaged in the implementation of the main business processes of insurance activity;
- for solving accounting and financial registration issues, as well as for Personnel Management —Galaxborot communication technology which is special in the structure of Progress-Galatika ERR system;

Mid-size companies with a sufficient number of customers, the number of employees of which is 200-300 specialists, are targeted to buy and introduce countable systems:

- full — functionality-Galaxborot communication technology registration system with a complete set of modules to ensure that all divisions within the company work effectively;
- has a complete set of modules and licenses that ensure the effective operation of the company's back-office units —Galatika ERR system;

The Connect Insurance Information System of Austria's famous FirstInEx Internet Services AG, a provider of software for insurance companies and banks, was developed in

order to improve the quality of customer service. This system allows the insurance company — timeto market – to modernize the system of sales of products, starting with the emergence of the idea of a new insurance product, and continuing according to the principled processes from bringing it to the market and without changing the existing IT structure in the company.

As with all financial internet services in the United States, the internet insurance market was the first to be launched. Currently, many American insurance companies that have opened their representative offices on the internet provide all the services they need to purchase and service insurance policies. The client can choose insurance products based on the type of services provided on-line advice, coverage on the internet. After that, it will be necessary to calculate insurance premiums and fill out web forms to conclude an insurance contract.

The products of Fido —business LLC and the Russian-IC Company, which have successfully introduced integrated information systems from domestic manufacturers to the banking system in the Insurance Information Systems Market of Uzbekistan, are gaining success. The launch of the internet insurance service by insurance companies is at an early stage, and the internet portal is used only as an informational advertisement. In the Republic, there are few Information Communication Technology Developments covering all activities in the insurance industry, and they are mainly introduced in small companies, and Insurance Information Communication Technology Systems developed by existing local firms in the Republic cannot meet the requirements of large companies. At the same time, information and communication technologies introduced into the activities of insurance companies are aimed not at the level of full coverage of insurance activities, but at the implementation of certain functions of the activity. For example, acquaintance with the practice of informatization of the complex of insurance data applied to the activities of Capital Insurance JSC showed that in this company, at present, the mutual obligations of insurance entities, that is, only the information of the insurer related to these obligations, form the basis of the information system. All this testifies to the fact that information systems and technologies are not fully applied to the insurance industry. At the moment, the issue of improving the activities of the insurer with the help of information and Communication Technologies has not been put. At the same time, in the existing information and Communication Technology Market in the insurance industry, excellent products prepared by domestic manufacturers have not been offered so far.

An electronic insurance account is an effective and reliable way to keep an insurance policy in one place and safely. It has various advantages and is protected from being lost, corrupted or stolen as the data is stored electronically in an electronic insurance account. An electronic insurance account can be accessed at any time and anywhere, simply put, there is an opportunity to check the information about the insurance policy at any time. An electronic insurance account is very convenient and flexible, which allows you to safely maintain any insurance policy. Online insurance premium payments can also be easily made through an electronic insurance account. If customer information or address has changed, the electronic insurance account can be updated, and this change is also automatically recorded in the insurance policy. It does not deny the fact that life without a life insurance policy is no less than gambling. This is a risky move not only for the

financial security of the insurer, but also for the life that depends on it. It is worth considering buying a life insurance policy as soon as you start earning, without spending a lot of precious years. Today, the electronic insurance policy is becoming the main need during the period of rapid technological development, it is considered useful and effective not only in terms of saving time and distance, but also economically. For a generation that is well versed in technology that wants to do its job by clicking the mouse, rather than visiting the insurer's office or manually filling out contract forms, it will do without problems. Electronic insurance has advantages and disadvantages. Before highlighting the disadvantages of e-insurance, let's first dwell on the advantages of e-insurance. One of the biggest advantages of electronic insurance is that under one platform, several types of insurance policies, that is, insurance services, can be selected. Customers can compare the prices of services provided by various insurance companies, choose the optimal one for themselves and, at the same time, receive all the information that interests them. This makes it possible for customers to make the right decision, that is, not only to win several insurance policies and realize the difference in rates of services, but also to be able to assess the pros and cons of this system and choose only the best for themselves. In addition to the advantages of choosing electronic insurance, it is necessary to describe its sluggish side. The online insurance policy cannot be adjusted to suit the requirements and wishes of customers. This is perhaps the biggest drawback of e-insurance programs. Customers do not have the ability to configure the program, it is time-consuming. Another disadvantage associated with e-Insurance Plans is that it does not allow customers to implement an insurance premium agreement. Since there is no agent involved in the process, it is impossible to discuss the cost of premiums. Also today, several insurance policies provide additional benefits such as health coverage, accident benefits, disability benefits, etc. The electronic insurance policy does not provide these benefits. These proposals will be predetermined and there will be no way to make changes. Having an e-insurance policy is a cost-effective way to rid individuals of excess documentation. It also acts as a protection against theft or loss of the police. An e-insurance account refers to an account in which all e-insurance policies can be stored in digital form. Individuals can choose both, the insurance company or the database itself, to open an electronic insurance account. There are 5 authorized databases for opening an electronic insurance account, which are:

- NSDL Database Management Limited Company;
- Central Insurance base limited Company;
- CAMS Repository Services Limited Company;
- Karvy Insurance Repository Limited Company;
- SHCIL Projects Limited Company.
- Below are the useful aspects of an electronic insurance account:
- opening an electronic insurance account is completely free;
- the digitally shaped insurance policy prevents it from being lost and stolen, and at the same time allows access to its insurance policy at any time, anywhere, with just a few clicks;
- all insurance policies can be tracked on one account;
- the insurance premium can be paid via the internet instead of standing in line to pay, paying by cash, spending time.

An e-insurance subscriber does not need to provide his document every time he buys a new insurance policy. To carry out this process, it is necessary to enter an online insurance account. Individuals must upload, fill out and send an application form to any insurance base of their choice, along with a document confirming their identity and address and the necessary documents that they have approved as a canceled check. The best thing about opening an electronic insurance account is that the digital form limits the overuse of documents and carries out the process without problems. Customers can keep all their electronic insurance policies, including health, life and other insurance policies, in one account.

On December 10, 2021, a video chat organized by representatives of the Ukrainian companies “Innovative insurance capital” and “Chisw Development” for those responsible for the insurance market development agency under the Ministry of Finance and specialists of insurance companies held a presentation on the work carried out to digitize insurance services, as well as the results achieved. At the 3rd session of the II international financial and banking forum in Tashkent, dedicated to the field of insurance and reinsurance, an online format meeting was organized due to the interest of the participants of the presentation forum, which was demonstrated by representatives of this company. In the video report, the agency officials informed the participants about the positive changes taking place in the insurance market of Uzbekistan, the essence of the content of the newly adopted regulatory legal acts aimed at digitizing the industry. In particular, by the decision of the head of state, it was noted that from January 1, 2023, the practice of formalizing insurance policies on all types of compulsory insurance on paper blanks will be abolished, and electronic policies will be introduced in their place. It was also reported that the electronic process of drawing up insurance contracts and processing claims under the Information System “Inrisk”, developed by representatives of the insurance company of Ukraine, serves as a convenience for customers. It was announced that customer identification would be achieved by sending the IMEI code of the telephone hardware as well as the verification code to the number included in the contract, saving service time. During the video interview, participants received answers to questions of interest and it was noted that by introducing digital insurance services, it is possible to increase the number of customers of the company and increase transparency in reports.

It goes without saying that financial processes is modernizing day by day and of course it is common question, how insurance industry is digitizing. Actually, the term “digital insurance” was first used to refer to disruptive insurance business models, most companies in the sector chose a different path to digitizing. They streamlined their efforts on automation, processes optimization, and improving customer experience. Companies in conservative industries like insurance, or financial services are historically hesitant to pursue digital transformation. However, in recent years, insurance carriers adopted a pragmatic agile approach and started a massive leverage of technologies. This trend accelerated during the first months of the Covid-19 pandemic, when all-digital trends sped up quickly. According to recent research by Gartner, a small number of insurers have already achieved digital maturity, but the majority is still catching up. Only 50% of insurance companies are currently scaling or refining their digital initiatives, and only 11% believe they are effectively harvesting results from digitization. After the pandemic subsides, it will be increasingly important to be agile and operationally nimble. The digital



insurance services market is rapidly growing, which means it is more important than ever to have the support of experienced technology vendors.

Insurance companies are setting ambitious goals, including improved service, a better omnichannel experience for customers, better use of analytics and data-driven insights, and automation of routine processes. But some insurers still have a long way to go before they achieve these goals. Oftentimes, the source of these insurers' problems are their bulky legacy systems, which can hinder a digital transformation.

Carriers should partner with a technology company that has deep domain expertise and a broad technological outlook. This company can advise the carrier on the best combination of tools for their digitizing journey. Here are a few examples of insurance vendors that formed these partnerships and are already reaping the benefits. Selective Insurance, one of the highest ranked P&C insurance companies in the U.S., partnered with a custom software vendor to complete a massive digital transformation of its legacy platforms. It developed an automated system for policy reviews and demand management, which helped Selective Insurance rationalize and optimize its underwriting processes. Automation of repetitive routine efforts of the underwriting team resulted in a 60-70% improvement in efficiency. Genworth Financial is a S&P 400 insurance provider that has been helping its clients prepare for the financial challenges of aging for more than 150 years. A few years ago, the company embarked on a digital transformation with the help of a tech partner. The insurance vendor invested in a modern system called Genworth Smart Hub, which meets its business and customer needs and consolidates data across systems. As a part of its transformation journey, Genworth Financial also implemented RPA for some manual processes in its financial department, including reporting, reconciliation, auditing, and data processing. As a result, the company expects to save up to 50,000 hours of manual work every year. When Symetra Life Insurance Company, an American financial group, offering retirement, annuities and life insurance, planned a digital transformation of a core platform, its key priorities were flexibility and rapid TTM for new digital products. The vendor also sought to provide more efficient data processes and better availability for its customers. To accelerate these initiatives, Symetra opted for Socotra, a cloud-based platform for technology-driven insurers. Socotra's future-proof, cloud-native technologies and agnosticism to distribution channels help Symetra rapidly expand product offerings, while maintaining a relatively low TCO. DataArt has many years of experience in insurance software development and integrations. We have helped many clients transition their existing architectures to platforms like Socotra and BriteCore. As a part of its pandemic-driven digital transformation journey, Liberty Mutual Insurance, the world's sixth-largest property and casualty insurer, accelerated the use of cloud technologies and processes automation with AI and ML algorithms. The company is on its way toward digitizing everyday operations along the customer journey and the experience of in-house employees and brokers and agents. The insurer is performing an in-depth data transformation that will eventually turn Liberty Mutual into an "intelligent insurer," a company that uses advanced data and analytics for its strategic business decisions. How DataArt Helps Insurance Companies to Innovate? For years, DataArt has been offering insurance software development services, including re-engineering of legacy systems, development of custom document and claims management platforms, and implementing blockchain technologies for insurance ecosystems. DataArt partnered with Legal & General, one of the largest providers of insurance and investment management services in the U.K., to build a global-first solution for reinsurance. Using blockchain technology, the DataArt team automated calculations and made transactions more secure and transparent, while meeting all compliance regulations. As a result, the complexity and costs of bulk pension risk transfers were reduced, and process speeds increased drastically — from

months to minutes. The labor costs saved by the newly developed, revenue-generating technology now allow L&G to scale operations and engage even more clients.

Legacy insurance claims systems, which are still in use at many companies in the industry, adversely impact insurers' ability to digitize and innovate. These systems become more expensive to maintain every year, even if the carriers already invest in some form of automation. These systems also come with a host of side effects, including resource and capital drain. They still rely on lots of manual processes, resulting in delayed payouts, unsatisfied customers, and improper use of customer data. To optimize manual, inefficient and time-consuming processes of dealing with insurance claims, DataArt built a data and claims accelerator that serves the needs of adjusters in most insurance companies.

One of DataArt's recent clients, a large warranty provider distributing vehicle service contracts, had reached the capacity limit on its platform. It was too hard to maintain and upgrade, and the tools company management used for decision making were constantly delayed. To eliminate the risk of business losses and violation of critical non-functional requirements, the DataArt team started refactoring the data warehouse, modifying the legacy system, and enhancing analytic reporting. The project required modification and support of legacy Oracle databases, functions, procedures, packages and more. This involved:

- documenting the existing functionalities
- supporting and administrating all current services
- investigating and researching activities to build new BI reports
- creating a new DWH system using new principles and methods

In the course of the project, data processing times were aligned with operational time, and the "single point of truth" principle was restored, which facilitated better decision-making in the company. By meeting all requirements for a modern warranty management platform, the DataArt team enhanced security and compliance components, promoting further business development for the client. Insurers often prefer technology vendors to their own in-house IT teams when planning a digital transformation because vendors can provide development speed and experience with the latest technological innovations.

Tech providers maintain a rich talent pool, meaning that it usually takes only a few weeks for them to staff a dedicated engineering team. Hiring and on-boarding an in-house engineer often takes much longer. Custom software development companies also have broad experience in integrating off-the-shelf products, platforms, and solutions for the insurance sector. This allows carriers to carefully plan a transformation roadmap and control how much it costs to move from one milestone to the next.

Software development vendors are familiar with most recent technology innovations and trends. They have often used these tools in prior projects, and know which tools and tech stacks work better than others. In-house IT teams, while proficient in software already in use by an organization, often lack a broader technological knowledge base. Tech companies have a proven vision of how technology is implemented in the insurance sector today because of their prior experience in similar projects.

## CONCLUSIONS

Given the lack of empirical research on InsurTech and the novelty of topic, we strived to advance the understanding of InsurTech and its impact on firm-level value creation and insurance industry structure. To do so, we applied grounded theory methodology to develop theory inductively from rich empirical data. Our contribution to theory is twofold: First, our results advance literature on FinTech by contributing a



systematic understanding of InsurTech through the presented model comprising 52 characteristics and 14 transformational capabilities. Drawing on value network literature, we demonstrate how the identified transformational capabilities (i.e., sources of competitive advantage) relate to the three interdependent primary activities infrastructure operations, service provisioning, and network promotion. This particularly emphasizes the relevance of aligning these primary activities and their respective transformational capabilities to understand firm-level value creation in the light of InsurTech. Second, by relating our results to the roles of intermediaries (i.e., aggregation, facilitation, matching and trust), we elaborate on the impact of InsurTech on the industry structure. Namely the rise of novel digital intermediaries in the personal insurance market. For practitioners, the identified characteristics and transformational capabilities serve as building blocks, which can be combined to plan, discuss and compare InsurTech initiatives. Informing strategic positioning and competitive analyses, the model provides a foundation for deciding where to strive for possessing a competitive advantage and where to give up sovereignty.

There are several limitations in the light of which our results have to be interpreted: Contingent on the qualitative and interpretive nature of our research, exhaustiveness cannot be ensured. In spite of the iterative data collection, InsurTech is continuously evolving and might demand future changes of our model. In addition, the results might suffer from sample bias, because not every InsurTech innovation is posted on Twitter. Finally, we have to emphasize that literature on value networks, FinTech and intermediation might not be the only research fields worth to relate our emergent model to in the course of theoretical integration.

In particular, we would like to emphasize two main areas of future research. First, future work should investigate InsurTech from a customer's perspective in terms of trust, perceived value, and motives. For example, Milanova and Maas studied the motives to participate in peer-to-peer insurance. Second, as the nature of value creation shifts towards integrating and applying resources in networks of factors, it seems fruitful to investigate the emergent network structures in more detail (i.e., analyzing the exchanged operand and operant resources between actors such as reinsurance, primary insurance, service providers, and intermediaries). As such, literature on actor-network theory, value co-creation and service-dominant logic could inform future analyses.

## REFERENCES

- Haiss, P., & Sümegi, K. (2008). The relationship between insurance and economic growth in Europe: a theoretical and empirical analysis. *Empirica*, 35(4), 405-431.
- Höller, J., Hoepner, A. G., & Schopohl, L. (2020). ESG integration in insurance underwriting: A review of the academic literature. *The Geneva Papers on Risk and Insurance - Issues and Practice*, 45(3), 307-338.
- IAIS. (2019). Global Insurance Capital Standard (ICS) Version 2.0. International Association of Insurance Supervisors. Retrieved from <https://www.iaisweb.org/page/supervisory-material/insurance-capital-standard>
- Krahn, J. P., & Schierenbeck, H. (2014). The low interest rate environment, the Dutch pension system, and the credit supply. *SAFE White Paper Series*, 25.
- Millo, Y., & MacKenzie, D. (2009). The usefulness of inaccurate models: Towards an understanding of the emergence of financial risk management. *Accounting, Organizations and Society*, 34(5), 638-653.

NAIC. (2015). Risk-Based Capital (RBC) for Insurers Model Act. National Association of Insurance Commissioners. Retrieved from <https://www.naic.org/store/free/MDL-312.pdf>

Swiss Re Institute. (2020). Insurance in a world of climate extremes: what latest science tells us. Swiss Re Sigma, 2/2020.

Swiss Re Institute. (2020). Global insurance review 2020 and outlook 2021/22. SwissReSigma, 6/2020.