ARTIFICIAL INTELLIGENCE, INTEGRITY, AND OPPORTUNITY IN INSURTECH

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Abstract

As researchers and practitioners alike seek to identify new ways to solve business challenges, inspire financial innovation, and create and seize new opportunities, insurers around the world are increasingly teaming up with insurtechs, and other tech startups. However, combining the constant caution of traditional insurance with the fast-moving, fast-changing startup-tech of startup culture is rarely straightforward, especially from the perspective of fintech ethics. Insurers need to be well-prepared to ensure these partnerships work for everyone involved – and ultimately deliver significant value. There are many reasons why insurance companies are looking for partners in insurtech, and other technology areas. They usually want to overcome a challenge or solve a vexing problem. The reasons behind successful partnerships often focus on persistent business needs: to help reduce costs, increase revenue, or improve customer experience.

Partnerships between insurers and technology companies are increasingly common, especially because of the development of artificial intelligence applications (for example ChatGPT applications). Therefore, in this paper we propose, based on existing empirical studies, to highlight the financial trends in the insurtech field based on artificial intelligence applications and according to existing European regulations.

Keywords: artificial intelligence, integrity, insurtech, fintech, sustainability

JEL Classification: O31, P48 , G22, G23, Q56

1. Introduction

Generative artificial intelligence (AI) describes algorithms (such as ChatGPT) that can be used to create new content, including audio, code, images, text, simulations, and video [9]. It is worth noting that financial innovations in the field of insurtech have the potential to drastically change the way we approach the creation of content for the field of insurance,

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maintaining the principles of financial ethics, but the orientation being directly towards the optimization and development of fintech (insurtech) activity.

There are some questions that the specialists in the field ask in the studies [9], respectively: can we create innovative financial product content in insurtech by means of Generative Artificial Intelligence (AI)?

Currently, AI applications are increasingly being used to support the creation of content for innovative financial products in the insurtech field. Do tech partners understand what the insurance financial market needs? Do we have the tools to take our creativity to the next level? Can we create innovative financial product content in insurtech through Generative Artificial Intelligence (AI)?

This ingenious form of machine learning allows computers to generate all kinds of new and interesting content[7], from traditional financial products (depending on what we want the machine to define) to virtual worlds using insurtech products and services in the metaverse [3].And it's not just for interactivity – generative AI also has plenty of practical uses[9], such as creating new product models and optimizing business processes in insurtech.

Another concept and service that has been used more and more in recent months is the ChatGPT tool, and which could be successfully used in the insurtech field - GPT stands for pre-trained generative transformer - and currently there is more and more talk about the presence of this application in all industries. Moreover, a free chatbot that can generate an answer to almost any question asked. Developed by OpenAI and released for general public testing in November 2022, it is already considered the best AI chatbot ever. And it's popular too: over a million people signed up to use it in just five days. Fans of this app have posted examples of the chatbot producing computer code, college-level essays, and even financial product concepts. Others, among the wide range of people who make a living creating content, from advertising copywriters to tenured teachers, appreciate that these applications can take over a large part of the activities performed by these professional categories[9].

While many have reacted to ChatGPT (and AI and machine learning more broadly) with reservations, machine learning clearly has the potential for good for everyone. In the years since its widespread implementation, machine learning has demonstrated impact in several industries, enabling things like medical imaging analysis and high-resolution weather forecasting and financial market connectivity. McKinsey's 2022 survey [9] and showing that AI adoption has doubled in the past five years and AI investment is growing rapidly. Generative AI tools like ChatGPT and DALL-E (a tool for AI-generated art) have the potential to change the way several tasks are performed. However, the full extent of this impact is still unknown, as are the risks [10]. Moreover, we know that insurances, regardless of which class or future applications we use, must respond to a varied palette of risks. Therefore, in the latest Global Risk Perception Study (GRPS) using different time intervals to be understood, as can also be seen in the figure below.
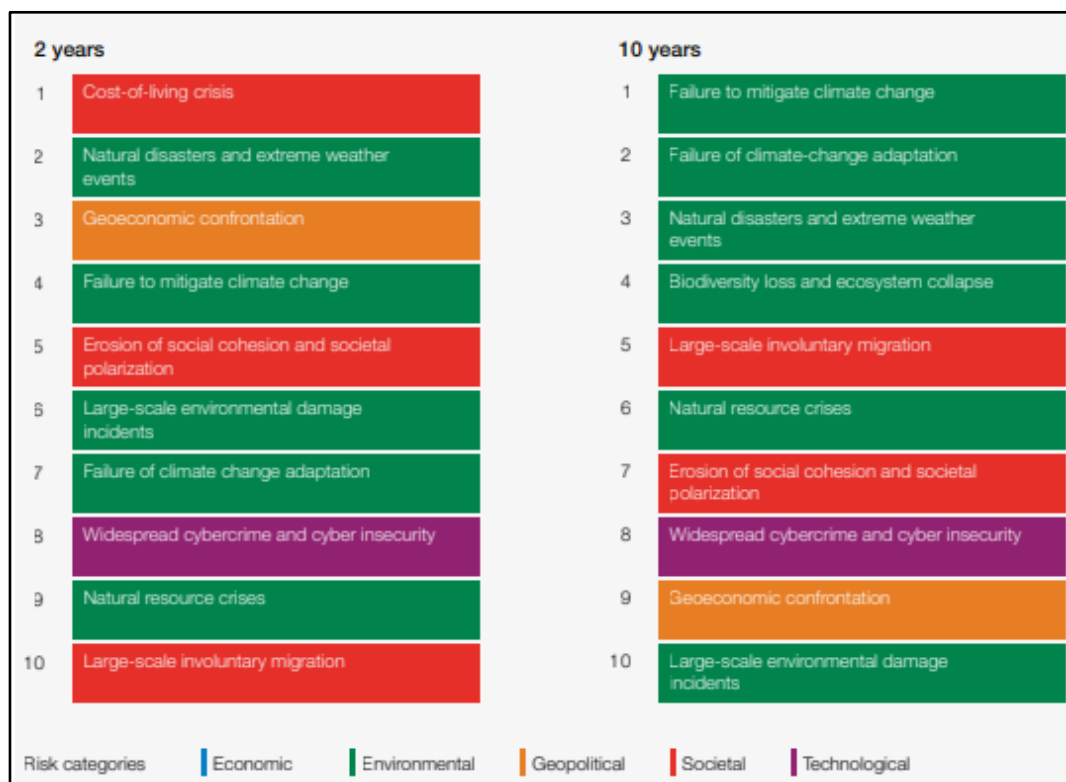
2 years		10 years	
1	Cost-of-living crisis	1	Failure to mitigate climate change
2	Natural disasters and extreme weather events	2	Failure of climate-change adaptation
3	Geoeconomic confrontation	3	Natural disasters and extreme weather events
4	Failure to mitigate climate change	4	Biodiversity loss and ecosystem collapse
5	Erosion of social cohesion and societal polarization	5	Large-scale involuntary migration
6	Large-scale environmental damage incidents	6	Natural resource crises
7	Failure of climate change adaptation	7	Erosion of social cohesion and societal polarization
8	Widespread cybercrime and cyber insecurity	8	Widespread cybercrime and cyber insecurity
9	Natural resource crises	9	Geoeconomic confrontation
10	Large-scale involuntary migration	10	Large-scale environmental damage incidents

Risk categories | Economic | Environmental | Geopolitical | Societal | Technological

Figure 1. Category of global risks that can be a source of innovation for insuretech [4]

It is very clear that artificial intelligence is taking over for many repetitive activities, but is it important to differentiate between machine learning and artificial intelligence?

Artificial intelligence is pretty much exactly what it sounds like – the practice of making machines imitate human intelligence to perform tasks. You've probably interacted with AI even if you don't realize it—voice assistants like Siri and Alexa rely on AI technology, as do customer service chatbots that pop up to help you navigate websites [9].

Machine learning is a type of artificial intelligence. Through machine learning, practitioners develop artificial intelligence through models that can "learn" from data patterns without human direction. The huge unmanageable volume and complexity of data (ingestible to humans, anyway) that is now being generated has increased the potential for machine learning, as well as the need for it [9].

Therefore, compared to the two conceptual definitions, it is useful to know which knowledge tool we can use successfully in the development and optimization of process

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[4] Source: World Economic Forum Global Risks Perception Survey 2022-2023.

activities within insurtechs. Machine learning and artificial intelligence are becoming complex and integrated tools used in the development of innovative insurtech tools.

Machine learning is based on a range of databases, starting with classical statistical techniques developed between the 18th and 20th centuries for small data sets. In the 1930s and 1940s, computing pioneers, including theoretical mathematician Alan Turing, began working on basic techniques for machine learning. But these techniques were confined to laboratories until the late 1970s, when scientists first developed computers powerful enough to mount them [9].

Until recently, machine learning was largely limited to predictive models, used to spot and classify patterns in content. For example, a classic machine learning problem is to start with an image or multiple images of, say, financial innovation icons. The program would then identify patterns among the images and then sift through the random images for those that would match the adorable pattern of the innovative financial instrument icon. Generative artificial intelligence was a breakthrough. Instead of simply perceiving and classifying a photo of an innovative financial instrument, machine learning is now able to create an image or text description of the financial innovation on demand.

2. Research methodology

Based on the data provided by those identified in the specialized empirical studies from academic databases, as well as from research institutions based on interviews/questionnaires applied to the business environment in the financial field, the authors present arguments supported by analytical materials regarding the need to to approach and develop sustainable partnerships in the insurtech field, as well as to define artificial intelligence concepts and solutions in the financial field. At the same time, it makes a general analysis of the problem of the insurtech system, and the risks identified at the international level.

In this study, research methods were applied such as: monograph, data comparison and the graphic method that determines the whole process of financial insurtech innovation in the context of the accelerated development of tech industries in the financial field.

3. Results obtained and discussion

From the beginning of the paper, we emphasized that the partnership between insurtechs and other startups is helping a growing number of insurers to leverage innovative thinking to drive growth, improve customer experience and tackle difficult business problems. In order to make the most of these partnerships, it is important that insurers develop their innovative products according to the needs of the target group, as well as through a comprehensive risk analysis at global level, so that they prepare their business accordingly.

By establishing a solid foundation for success early on, insurers will be well positioned to unlock new paths to success. Among the elements related to supporting a successful insurtech partnership, we identified the following: Pat Kneeland, Manager, Innovation & Enterprise Solutions at KPMG in the US and Kabir Sadarangani, Senior Associate at KPMG Innovation Labs at KPMG in the US. At KPMG's Innovation Lab, Pat and Kabir help insurance carriers understand how their industry and customers are changing and determine where and how to assess, structure, and measure organic (internal) and inorganic (partnership and investment) opportunities) to innovate throughout the business [8] and [9].

Figure 2. Strategic tech partnerships by (re)insurers are growing[5]
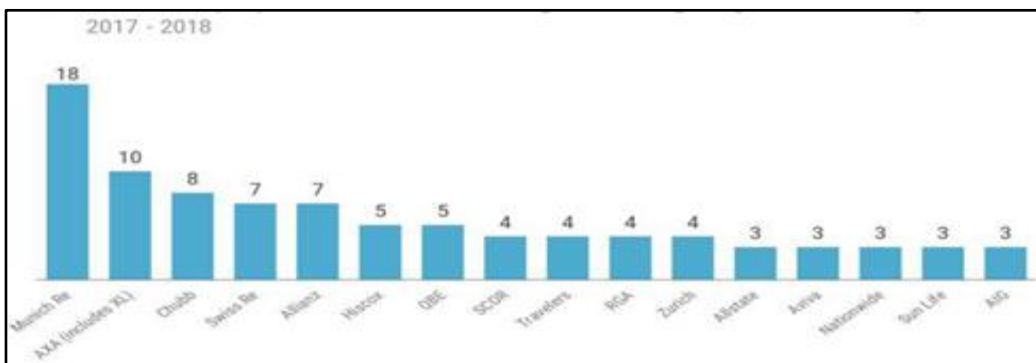
Figure 3. Active (re)insurers striking strategic partnerships[6]

At the same time, following the deterioration of the global economic situation, perspectives bring decisions at the government level, and which decisions face competing social, environmental and security concerns, investments in resilience must focus on solutions that address several risks, such as be the financing of adaptation measures that come with climate mitigation co-benefits or investments in areas that strengthen human capital and

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[5] cbinsingths.com
[6] cbinsingths.com

development [9], [10]. Some of the risks described in this year's report [10] are close to a tipping point. Therefore, it is very important that innovative fintech (insurtech) solutions are in line with the priorities for a more positive, inclusive life and stable world [10].
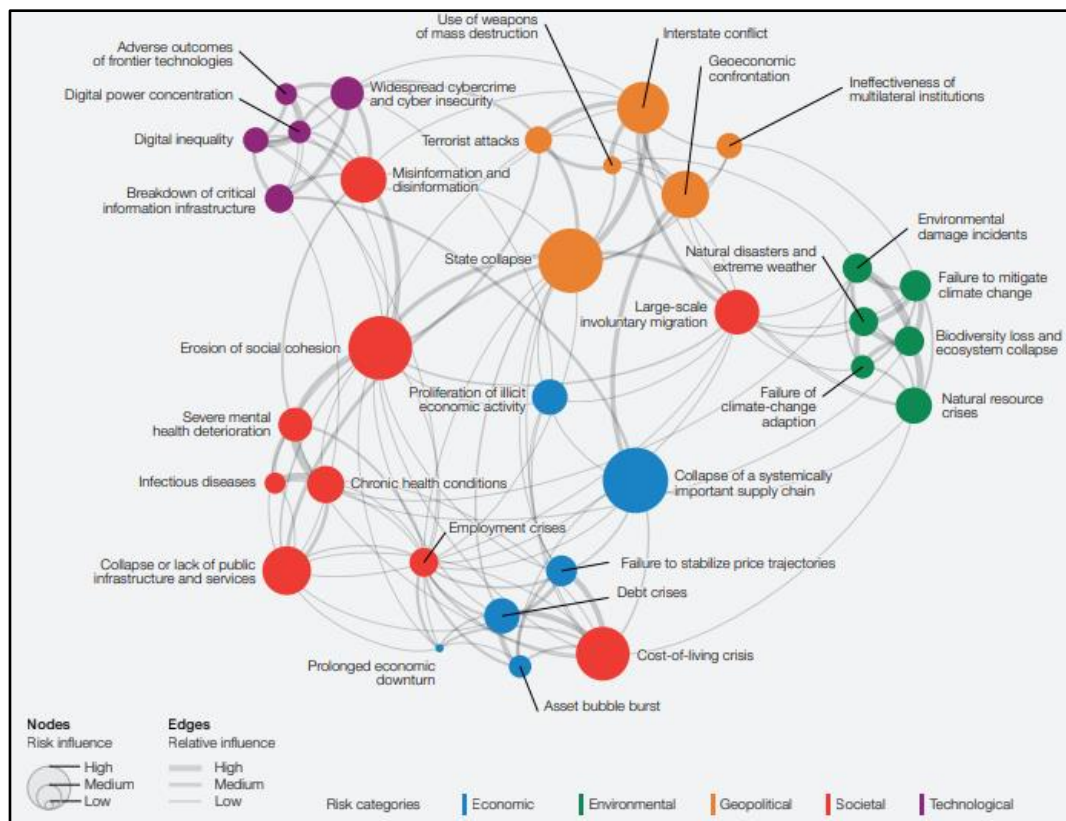

Figure 4. Global risks and their interconnection[7]

The metaverse and insurtech

How should insurtech/finctech founders view the metaverse? Is it a great opportunity or a great risk, how is the metaverse perceived in the context of the global risks mentioned above? From the point of view of financial innovation and the whole process within a fintech (insurtech), the metaverse is an enormous opportunity, and the risk for it can be limited. The IT companies that are involved in building the metaverse have claimed and claim that this is a new stage of the Internet. And as with any technology so vast and all-encompassing (it's like AI in its scope), the potential is enormous. According to research in the field, it is estimated that the metaverse could generate a value of 4 trillion dollars to 5 trillion dollars by 2030[9].

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[7] Source: World Economic Forum Global Risks Perception Survey 2022-2023.

In the McKinsey survey and according to the April 2022 McKinsey Global Private Markets Review 2023 study, approximately 95% of business leaders expect the metaverse to have a positive impact on their industry within five to ten years, and 61% expect for it to change the way their industry works. When the market value of the metaverse business was estimated in June 2022, it was calculated to be between $200 billion and $300 billion. Now it's bigger, and in about eight years it could be from $4 trillion to $5 trillion (exhibit), which is roughly the size of Japan's economy, the world's third largest. Exponential growth is possible due to the alignment of several forces: the appeal of the metaverse spans genres, geographies, and generations; consumers have already shown that they are ready to spend on metaverse assets; are open to adopting new technologies; companies invest massively in the necessary infrastructure; and brands that experience the metaverse find that customers are delighted [7] and [10].
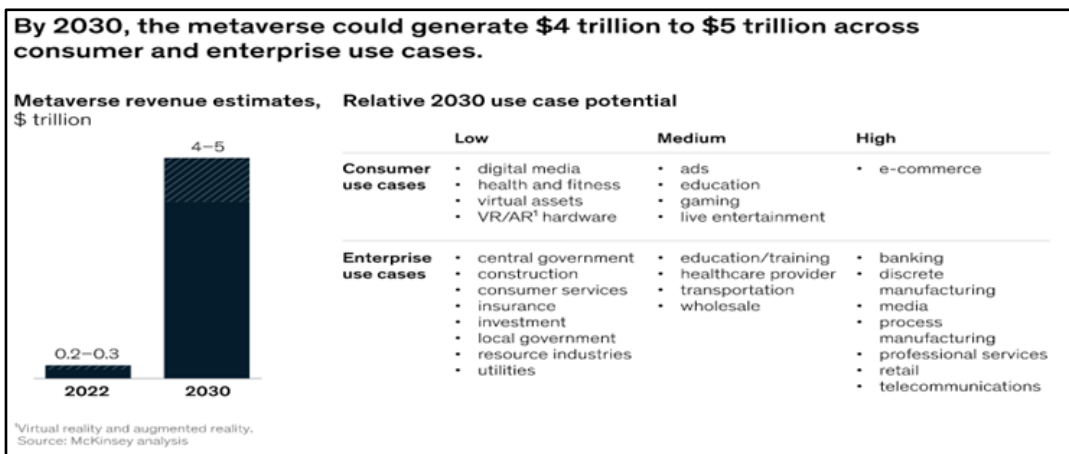

Figure 6. The metaverse and insurtech [8]

Among the main uses of the metaverse in the insurtech field, we can mention the following, namely that the emerging uses of the metaverse are both for policyholders (consumers of insurance financial products) and for insurtechs (insurers and reinsurers). Soon, insurtechs will offer innovative insurtech products, as well as an experience of selecting these products and services unprecedented in the metaverse, all accessed directly and in 3-D format. For now, to understand the potential, consider two of the biggest and most advanced uses, one for consumer businesses and one for B2B companies: Brand Marketing and Consumer Engagement. Many companies have already added the metaverse to their omnichannel marketing mix, considering a presence in virtual worlds such as Roblox, Fortnite and Sandbox. Some are already finding success. Nike hosted more than 26 million visitors to Nikeland, its Roblox space, and sold more than $185 million in NFTs for digital sneakers and related products. And its digital division tripled revenue to surpass $10 billion, almost a quarter of the company's total [6] and [9]. Now, companies are moving into the next wave

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[8] McKinsey analysis, 2023

of opportunities, including gamification, virtual reality (VR) and augmented reality (AR) [5].

The metaverse plan will depend on the type of products and services in the insurtech 3600 field. As these solutions are presented, the metaverse appears to have the greatest potential to change sectors in the insurance and reinsurance field with all the supporting partnerships. It is very important for the management of insurtech companies to position their financial innovation as best as possible for the situation in which it will move with all activities into the metaverse.
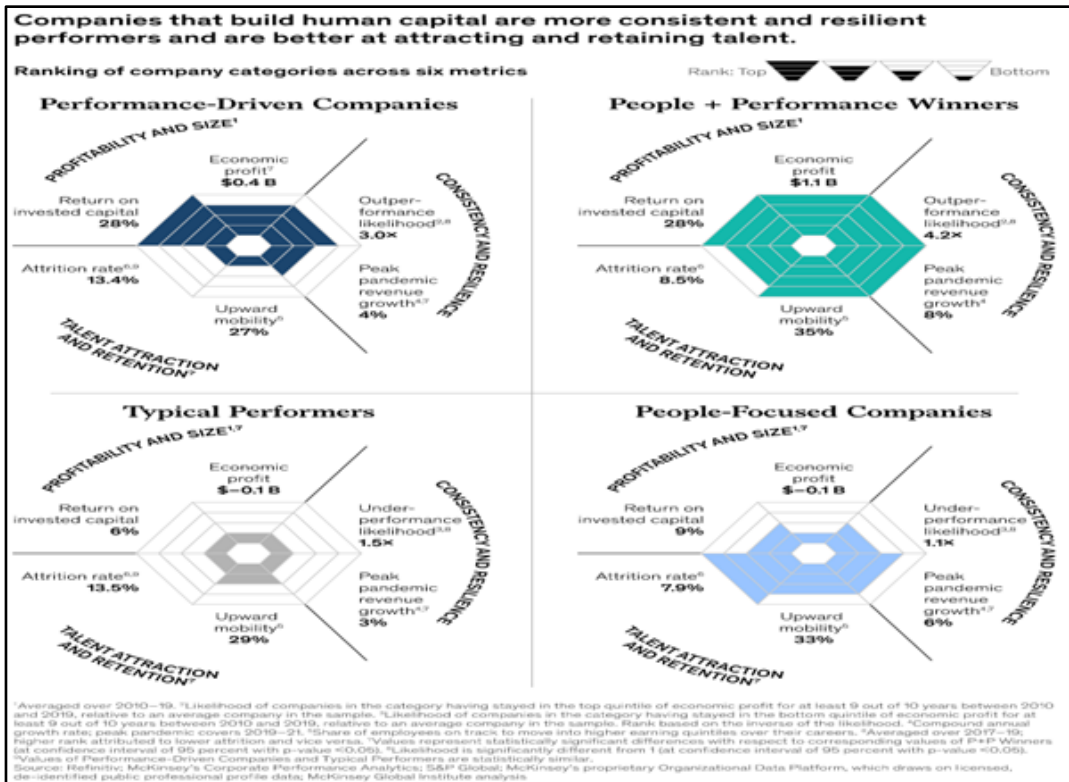

Figure 7. Redefining fintech activity in the metaverse-insurtech context[9]

It is obvious that more and more we can naturally ask ourselves what is the future of work?

Like the world at large, the world of work changes and changes over time. The future of work is about an informed perspective on what businesses and other organizations need to know about how work might change (given digitization and other trends), plus how the workforce and jobs are changing. they can prepare for those changes, big and small[9]. Although we cannot know the future with absolute certainty, it is clear that the jobs of the future are changing, just as society as a whole is changing. Looking ahead to how work,

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[9] McKinsey&Company, 2023

work ethics will change, along with the trends affecting the workforce and jobs, it is very important that both in terms of knowledge and the use of financial tools and innovations in insurtech, so that from the point of view of the initiation and development of such companies specialized in insurtech, they are as well understood and applied as possible, so as to generate stability and sustainable business.

To map the future of work at the highest levels, the McKinsey Global Institute considers potential labor demand, the mix of occupations and the workforce skills that will be needed for those jobs. Analysis, McKinsey looks at eight countries (China, France, Germany, India, Japan, Spain, the United Kingdom and the United States) with diverse economic and labor market models, which together account for almost half the world's population and more than 60% of GDP- his The study presented shows that the future of work could be defined as follows: one in 16 workers may have to change their occupation by 2030. That is more than 100 million workers in the eight economies studied – and the pandemic has accelerated the expected transitions of the labor force [9].

What is the future of work?

What is the future of remote work? What about the hybrid version?

Five success factors common across DEI Lighthouse initiatives

1. Nuanced understanding of root causes	2. Meaningful definition of success	3. Accountable and invested business leaders	4. Solution designed for context	5. Rigorous tracking and course correction
Understand the problem with a deep fact base	Set clear and quantifiable aspirations (what and by when)	Set initiative as a core business priority	Develop solutions that address the root causes, with scalability in mind	Define KPIs and implement rigorous tracking process
Identify the root causes	Articulate a clear case for change that moves employees to action	Hold senior leaders accountable for outcomes, not just inputs or activities	Integrate changes into key processes and ways of working, so impact is sustained	Use data and feedback to course-correct as needed
Get input from the target population, initially and throughout		Model and lead desired change, starting with the CEO and senior leaders	Equip and encourage employees to contribute	
Prioritize and sequence problem areas		Ensure resources for longevity in the budget, expertise and timeline		

5. Conclusions

The rapid evolution of the industry will be fueled by the widespread adoption and integration of automation, deep learning, and external data ecosystems, as well as AI solutions (e.g., metaverse and ChatGPT). While no one can predict exactly what insurance might look like in 2030, carriers can take some steps now to prepare for change.

1. Smartly adapt to AI technologies and trends

The tectonic challenges in the industry will be technology focused, addressing them is not the domain of the IT team. Instead, members of management and customer experience teams should invest the time and resources to build a deep knowledge and understanding

of these AI-related technologies. For example, insurers are unlikely to gain much insight from small-scale IoT pilots in certain parts of the business. Instead, they must proceed with the purpose and understanding of how their organization could participate in the IoT ecosystem at scale. Pilots and proof-of-concept (POC) projects should be designed to test not only how a technology, but also how successfully the operator could operate in a particular role in a data-driven ecosystem or IoT [3] and [6].

2. Develop and start implementing a coherent strategic plan at your Fintech (insurtech) level

Based on insights from AI explorations, industries benefiting from insurtech must decide how to use the technology to support their business strategy. The leadership team's long-term strategic plan will require a multi-year transformation across operations, talent, and technology [1]. Insurers should develop insight into the areas they want to invest in to meet or beat the market and what strategic approach – for example, forming a new entity or building internal strategic capabilities – is best for their organisation. In addition to being able to understand and implement AI technologies, industries must also develop strategic responses to future macro-level changes [2]. As many lines move to a "predict and prevent" methodology, for example carriers will need to rethink their customer engagement and branding, product design and bottom-line earnings. Car accidents will be reduced using self-driving vehicles, home flooding will be prevented through IoT devices, buildings will be rewired after a natural disaster, and lives will be saved and extended through improved healthcare. All these efforts can produce a coherent analytics and technology strategy that addresses all aspects of the business, with a keen eye on both value creation and differentiation [3] and [6].

3. Create and execute a strategy based on blocks of data

Data is quickly becoming one of the most – if not the most – important assets for any organization. The insurance industry is no different: how carriers identify, quantify, place, and manage risk depends on the volume and quality of data they acquire throughout the life cycle of a policy. Most AI technologies will work best when they have a large volume of data from a variety of sources. As such, carriers must develop a well-structured and actionable strategy regarding both internal and external data. Internal data will need to be organized in ways that enable and support the agile development of new insights and analytics capabilities. With external data, carriers must focus on securing access to data that enriches and complements their internal data sets. The real challenge will be gaining access in a cost-effective way. As the external data ecosystem continues to expand, it will likely remain highly fragmented, making it quite difficult to identify high-quality data at a reasonable cost. In general, the data strategy will need to include a variety of ways to obtain and secure access to external data, as well as ways to combine this data with internal

sources. Carriers should be prepared to have a multi-faceted procurement strategy that could include direct acquisition of data assets and providers, licensing of data sources, use of data APIs, and partnerships with data brokers [3].

4. ***Develop insurtechs based on financial innovation and the right technological infrastructure***

The insurance organization (insurtech) of the future will require talent with the right mindset and skills. The next generation of successful insurance workers will be increasingly in demand and must possess a unique mix of followers technological, creative, and eager to work on something that will not be a static process, but rather a mixture of semi-automated and machine-supported tasks that is continuously evolving. Generating value from the AI use cases of the future will require carriers to integrate skills, technology and information from across the organization to deliver unique and holistic customer experiences. This will require a conscious culture change for most operators who will rely on executive suite buy-in and leadership. Developing an aggressive strategy to attract, cultivate, and retain a variety of workers with critical skill sets will be critical to keeping pace [3]. These roles will include data engineers, data scientists, technologists, cloud computing specialists and experience designers. To retain knowledge while ensuring the business has the new skills and capabilities needed to compete, many organizations will design and implement reskilling programs [3]. As a final component of new workforce development, organizations will identify external resources and partners to enhance internal capabilities that will help carriers provide the necessary support for business evolution and execution.

Acknowledgment

References

[1] D'Amico Alex, Combles de Nayves Henri, Ellingrud Kweilin, Kotanko Bernhard, *The future of insurance: Creating value, finding focus*, McKinsey & Company, available at https://www.mckinsey.com/industries/financial-services/our-insights/the-future-of-insurance-creating-value-finding-focus, 2022

[2] D'Amico Alex, *Guides clients to create long-term value by setting enterprise strategy and pursuing rapid performance improvement while strengthening organizational health*, McKinsey & Company, available at https://www.mckinsey.com/industries, 2023

[3] Balasubramanian Ramnath, et all, *Insurance-2030-the-impact-of-ai-on-the-future-of-insurance*, McKinsey Groupe, 2023

[4,] Gelb Jay, *Works with insurers to link their strategy to value creation and the investor story*, McKinsey & Company, available at https://www.mckinsey.com/industries, 2023;

[5] Kaesler Simon, *Advises insurance companies on digital strategy, distribution, and everything around insurtech*. McKinsey Group, available at https://www.mckinsey.com/industries, 2023

[6] Manta Otilia, *Financial instruments (FinI) - important pillar in supporting economic sustainability at European level*, LAP LAMBERT Academic Publishing, ISBN 9786203580730, 2021

[7] Manta Otilia, Militaru Iuliana, Croitoru Lucia, *Financial instruments InsurTech on the financial market in the current global context,* available at SSRN: https://ssrn.com/abstract=3801096 or http://dx.doi.org/10.2139/ssrn.3801096, 2021

[8] Zane Williams, *Advises financial institutions on capital markets, valuation, investor communications, and strategy topics*, available at https://www.mckinsey.com/industries/financial-services/our-insights/insurance-blog/a-better-investor-story-for-insurers 2023

[9] *Global Private Markets Review Report*, McKinsey&Company, available at https://www.mckinsey.com/industries/private-equity-and-principal-investors/our-insights/mckinseys-private-markets-annual-review, 2023.

[10] *Global Risks Report*, *World Economic Forum Global Risks Perception Survey 2022-2023*, World Economic Forum, available at https://www.weforum.org/reports/global-risks-report-2023/in-full/appendix-a-technical-notes-global-risks-perception-survey-2022-20232023.

Bibliography

Communication from the Commission to the European Parliament, (2020), the Council, the European Economic and Social Committee and the Committee of the Regions - "Now is Europe's time: repairing the damage caused by the crisis and preparing the future for the new generation", COM (2020) 456 final, 27.5. 2020.

Communication from the Commission to the European Parliament, (2020), the Council, the European Economic and Social Committee and the Committee of the Regions - "A

strategy for SMEs for a sustainable and digital Europe", COM(2020) 103, 10.3.2020, https://eur-lex.europa.eu/legal-content/RO/TXT/HTML/?uri=CELEX:52020DC0103&from=EN,https://ec.europa.eu/info/publications/cmu-high-level-forum_en

Communication from the Commission to the European Parliament (2020), the Council, the European Economic and Social Committee and the Committee of the Regions on an EU strategy on retail payments, COM (2020) 592.

Communication from the Commission to the European Parliament, (2020), the Council, the European Economic and Social Committee and the Committee of the Regions on an EU strategy on retail payments, COM (2020) 592.

Databases of the National Bank of Romania (from the National Financial Accounts, (2007 – 2019), and the monthly bulletins from 2007 - 2020) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2020, Monthly Statistical Bulletin from December 2007 - 2019)

Digital Finance Strategy, (2020), https://ec.europa.eu/info/publications/digital-finance-outreach-2020_en

Digital Europe Program, (2020), https://ec.europa.eu/info/funding-tenders/find-funding/eu-funding-programmes/digital-europe-programme_ro

Digital Services Act, (2021), https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12417-Digital-Services-Act-deepening-the-Internal-Market-and-clarifying-responsibilities-for-digital-services

European Financial Data Space Expert Register, (2022);

Global Banking Research Report (2022),

https://www.publicissapient.com/industries/financial-services/global-banking-benchmark-study-2022

JPMorgan, (2022), https://finbold.com/jpmorgan-acquires-cloud-payment-tech-firm-to-stay-at-the-forefront-of-payment-innovation/

Mizuho Group, (2022), https://finbold.com/banking-giant-mizuho-issues-japans-largest-ever-eur-pegged-e800-million-green-bond/

Open Finance, (2022), https://ec.europa.eu/competition/consultations/open.html

Press release Will McCurdy (2022), 15 September 2022

Regulation (EU) 2022/858 of the European Parliament, (2022), Regulations (EU) no. 600/2014 and (EU) no. 909/2014 and Directive 2014/65/EU, hereinafter referred to as the Regulation on the pilot regime for financial market infrastructures based on DLT or the DLT Regulation

Regulation (EU) no. 910/2014 on electronic identification and trust services for electronic transactions on the internal market and repealing, (2014), Directive 1999/93/EC, OJ L 257, 28.8.2014, p. 73-114.

Regulation (EU) no. 910/2014 on electronic identification and trust services for electronic transactions on the internal market and repealing, (2014), Directive 1999/93/EC, OJ L 257, 28.8.2014, p. 73-114.

Report containing recommendations to the Commission - "Digital finance: emerging risks in crypto-assets - regulatory and supervisory challenges in financial services, institutions and markets", (2020), [2020/2034(INL)],

https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2020/2034(INL)&l=en On 13 December 2019, the Expert Group on Regulatory Obstacles to Financial Innovation, established by the European Commission in June 2018, published its recommendations on how to create an enabling environment for the provision of technology-based financial services.

Report expert group regulatory obstacles financial innovation, (2020), https://ec.europa.eu/info/publications/191113-report-expert-group-regulatory-obstacles-financial-innovation_en

Report from the Commission to the European Parliament, (2017), and the Council on the assessment of money laundering and terrorist financing risks affecting the internal market and linked to cross-border activities. COM (2017)340 final, 26.6.2017

Structural Reform Support Program, (2020), https://ec.europa.eu/info/departments/structural-reform-support_ro.