

TECHNOLOGICAL INNOVATION - CHALLENGES IN THE INSURANCE INDUSTRY

Carmen TODERAȘCU

Alexandru Ioan Cuza University of Iași
Iași, Romania
carmenoderascu@gmail.com

Ovidiu STOFOR

Alexandru Ioan Cuza University of Iași
Iași, Romania
ovidiu.stofor@gmail.com

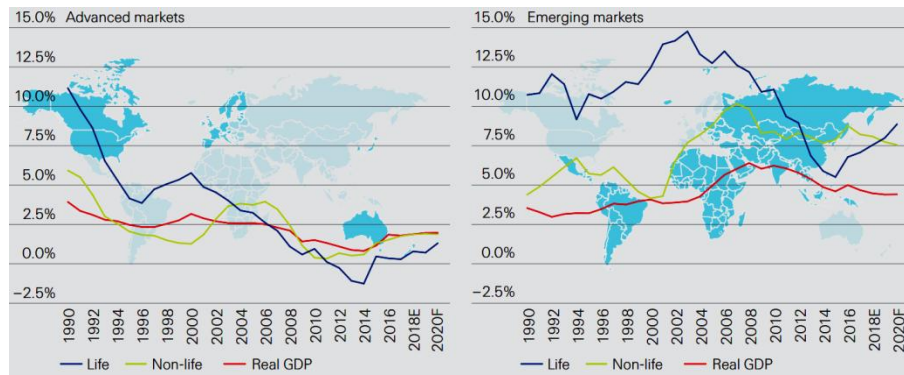
Abstract: *Nowadays, the global economy and digitalization have become two interdependent concepts; this connection could be syntactically named by the term Digi-globalization. Thus, technological innovation leads to economic stability and growth. Insurance companies are practically required to keep their technological developments up to date; in this context; we believe that the traditional "door to door" approach will never disappear, but it will migrate to the "virtual doors" of potential clients. Therefore, these economic entities must always modernize their business models and products to new technologies; otherwise they risk being even more boring for many consumers. An important role belongs to the supervisory authorities, which must ensure both an appropriate legislative and supervisory framework. Technological innovation provides facilities for personalizing the insurance, by identifying risks at an individual level; it will also lead to an easier and efficient way of understanding the insurance concept, its benefits, terms and conditions by the clients. In this paper our main aim is to identify the current stage and the new possibilities of development offered by information technologies in the insurance market.*

Keywords: *insurance, innovation, technology, risk, cyber insurance, Financial Supervisory Authority*

INTRODUCTION

In the globalized and digitalized economy, technological innovation is a source of stability and economic growth with an orientation towards the interests of the insured. The results of the technological innovation - artificial intelligence –have the potential to significantly develop the financial sector, including the insurance sector. The insurance market is not a place to be ignored in the macroeconomic perspective, having an important share in the Gross Domestic Product (GDP). Moreover, if we look at a comparison between the insurance market and the evolution of GDP, we can distinguish between the advanced and emerging markets of insurance, as shown in figure 1. If, in the first case, the two types of insurance (life and non-life) "escorts" quite close to the evolution of GDP, in the case of emerging markets it can be seen that for a few years there has been an approximation between the three mentioned indicators, the "alignment" occurring especially on the life insurance market.

Figure 1 Comparative evolution of life and non-life premiums compared to real GDP growth (7-year average)



Source: Swiss Re Institute, 2019, p.8

Technologies are also evolving rapidly in the insurance market; recently a robot was launched that uses artificial intelligence for damage. So, through an artificial interface can be sent photos, realizing the remote damages for CASCO, sending the money immediately to the account provided at the signing of the policy. And, as Călin Rangu, the president of the Institute of Financial Studies says, although it seems a little futuristic, such things happen in Romania of the year 2019 (Ciobanu, 2019). In this context, there are ambitious challenges for the insurance companies, which need to adapt their business models to new technologies, but also for the supervisory authorities, which must provide both an appropriate legislative and supervisory framework, focused on consumer protection and financial stability, allowing interested parties, including insured persons, to properly capitalize of the benefits of financial innovation.

Internationally, there is a special effervescence to discuss technological innovation in insurance. Insurers launch new innovative products and services. The reinsurers have developed specialized research centers to support technological developments. Recently, they even presented a robot that offers recommendations. The business models of the insurers and the consumer's experiences are in broad transformation due to the proliferation of technology and financial innovations.

It can be said the Internet of Things (IoT), a connector between companies, products and consumers (Love, 2019) can facilitate the realization of connected devices and technologies that will play directly, both the risks and the opportunities that insurers can enjoy, on the one hand, and customers, on the other. If we also mentioned, in the beginning of this introduction, as stated in a report by a bigswiss reinsurer (Swiss Re Institute, 2019, p. 2), technological innovations will lead to a reduction of damages and, also, lower rates and premiums in car insurance (and not only, we would mention).

CONTROLLED DEVELOPMENT OF INNOVATION ACTIVITIES IN TECHNOLOGY SUPPORTED INSURANCE

Nowadays, the speed of information flow can define the success or failure of a transaction against competitors in that field of activity. Insurances, representing a

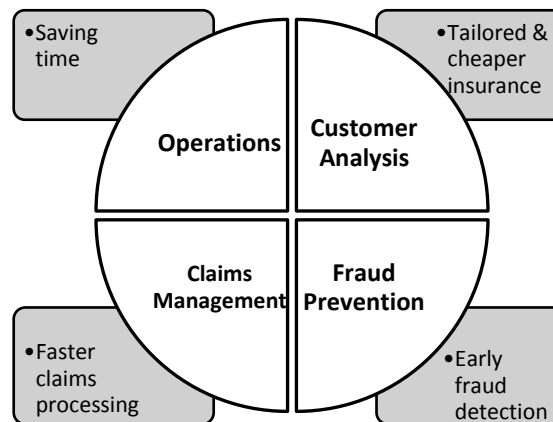
particular area of financial products, being sold mainly through the use of direct marketing, are sensitive to this speed of information.

That it is necessary for technological innovations in the insurance market to keep up generally with the technological evolution is well highlighted in a study (IIF, 2016), which refers to the fact that half the force of global work will be represented by millennials (those people considered "digital natives" who, from an early age, had a major exposure to digital technology and innovative platforms), by the end of this decade.

Artificial intelligence

It is enough to have a smartphone to feel the full of benefits of artificial intelligence. The same phone can be, at the same time, the platform on which the entire transaction between a company and its client begins or even takes place. In insurance, Artificial Intelligence involves both effective operations, generating efficient customer analyzes, damage management etc., as shown in Figure 2.

Figure 2 Benefits of using Artificial Intelligence in the Insurance Industry

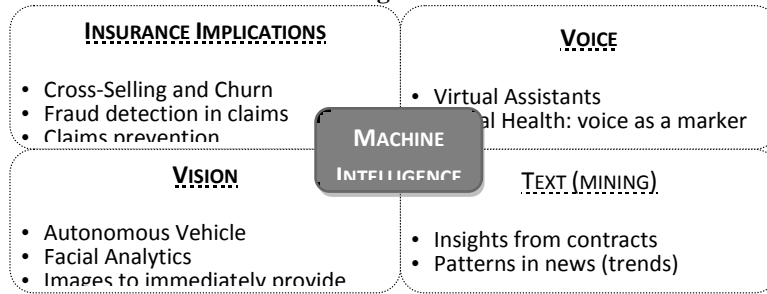


Source: Shroff, 2017

It is interesting the concept of Machine Intelligence (figure 3), which refers to the interaction between Artificial Intelligence, Machine Learning and Cognitive Computing - the three fields are very wide and the specific capabilities are not replaceable. Thus, according to Swiss Re (Marmier, 2017):

- Cognitive Computing refers to learning through interaction with people;
- Machine Learning identifies patterns and performs extrapolations for prediction;
- Artificial Intelligence, described above, uses data and predictions for decision-making judgments.

Figure 3 Various fields where the Machine Intelligence can be used



Source: Marmier, 2017

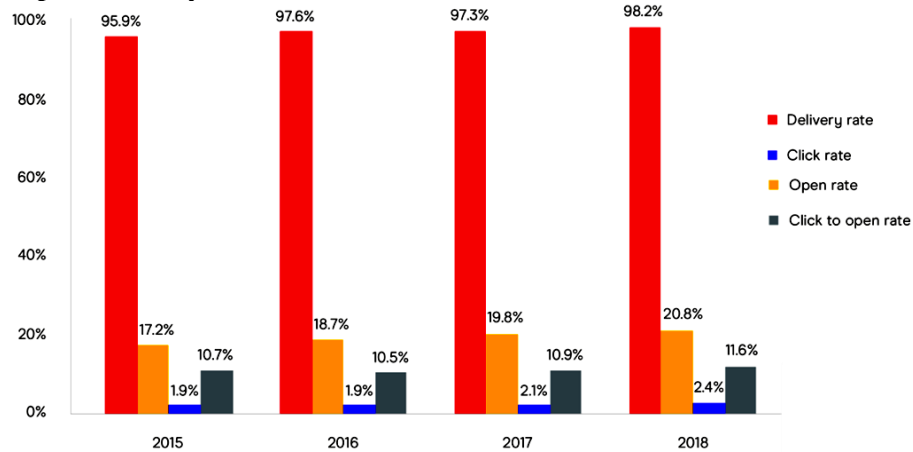
Real-time information

It may be useful for this purpose, the Feed Reader service, developed by RSS - open protocol for publishing information on the Web. An RSS (Rich Site Summary) feed is an XML file that describes the content of a site and is updated at the same time. RSS is important because it allows information about online resource updates without the use of emails or Newsletters, thus reducing the possibility of receiving spam or viruses. The information can be done in real-time, currently, and by accepting Push Notifications information; usually, they appear at the first access to the site that has such an application installed, in the form of a form with the options "Allow", but also obviously "Block".

Insurance and email marketing

Email marketing has become a real industry, with many integrators of automated email marketing campaigns. Some platforms used in such campaigns are HubSpot, Mautic, BlueMail, Eloqua; even the giant Oracle is a provider of such applications. Although it is a relatively convenient way, email marketing involves analyzing of the delivery actions, opening/clicking of the email, if and how many of the persons from target market unsubscribe or make complaints. Even if the current evolution of information technologies would provide more practical alternatives, the responses to the email were relatively constant, as you can see in a report by the UK Direct Marketing Association (DMA), shown in Figure 4 (Chaffey, 2019). Although the big difference between the percentage of sending the offers by e-mail and the click rates to open them is obvious, it is not discouraging the continuation of such campaigns for various reasons, being still a quite effective method.

Figure 4 Comparative analyses of reactions to email



Source: Chaffey, 2019

The same study shows, for Q1 of 2018, an analysis of the reactions for marketing through email, extracting for example the values regarding the insurance business (Table 1).

Table 1 Percentage values regarding the type of action for an email marketing campaign

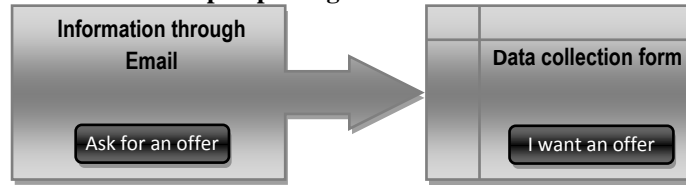
Action Type	Value (%)
Open Rate	20,99%
Click Rate	2,09%
Soft Bounce	0,75%
Hard Bounce	0,72%
Abuse Rate	0,02%
Unsubscribe Rate	0,25%

Source: Chaffey, 2019

As we mentioned above, the big difference between the opening rate and the unsubscribe rate, for example, is encouraging to continue this type of activity, even if the actual clicks are not very many. It can also be noticed that the loss rates caused by the delivery of email due to deeper reasons (hard bounces), such as the absence of the email address or the domain, or the blocking of the email server or temporary reasons (soft bounces) that involve filling the mailbox, too big emails, etc.

Therefore, insurances benefit from such options, as shown in the example from figure 5, where a health insurance campaign is drawn up, carried out automatically by e-mail. So, by clicking on the "Get offer!" button, the customer will reach a page on the "click-and-mortar" principle, fill out a form, the collected data is useful for subsequent contact.

Figure 5 Capturing the attention and prospecting for the offer

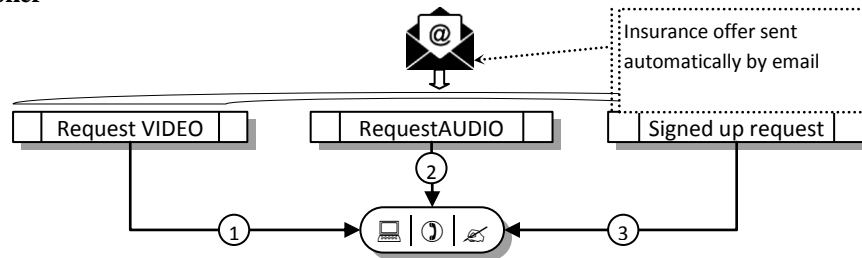


Since May 25, 2018, when the General Data Protection Regulation (GDPR) is applied, any form that retains data involving a text informing the client about the intention to collect and use the data, giving him the possibility of refusing to keep them given by the collector.

In Figure 6 we have sketched an example of a click-only offer, where the recipient receives an e-mail in which he is invited to follow some steps for RCA or travel insurance. Moreover, in addition to the documentation regarding the insurance products offered, the targeting of the respective site offers the (potential) client the possibility to interact with a consultant of that broker, thus not being dependent on the physical meeting, especially if it is about different localities. And, to dose the degree of confidence, as can be noticed, the dialogue can be:

- ① video– similar to Skype dialogue; The great advantage of video interaction would be that it helps to increase confidence faster, as the two interlocutors can see their facial reactions (it is very well known that non-verbal impact is the most important in communication - about 55%, as psychology professor Albert Mehrabian appreciated). The conversation might be a little uncomfortable if it is a modest connection;
- ② audio– talk all through the site; even if the vocal impact is not as great as the non-verbal one (only 38%, according to the same study by Mehrabian), it can confer a higher dose of confidence than the third variant.
- ③ text– chat. Convincing a potential client, using only written messages, is quite difficult; closing the "circle" of professor Mehrabian, only 7% can be help create the conviction to buy. Thus, it is advisable especially in communicating with existing clients when the details of the renewal of the policy are established, since too much convincing work is not required.

Figure 6 Online interaction possibilities of the client / potential client, with the broker



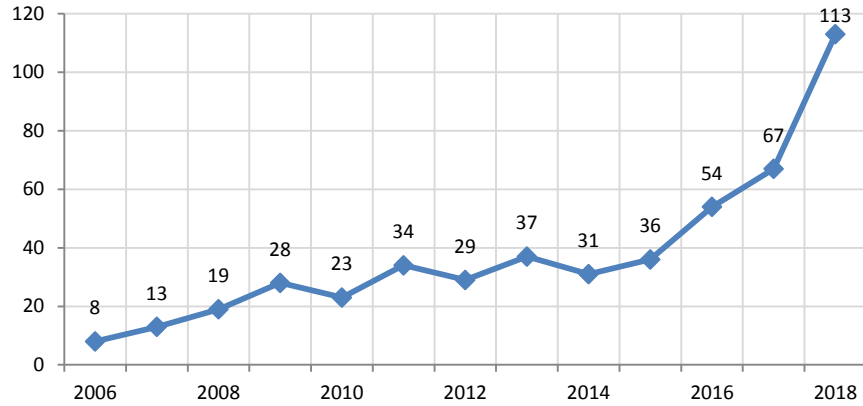
It should be mentioned that, in all three variants, there is the possibility of instant exchange of documents, which saves time, but also the financial resources involved in meeting with the consultant.

CYBERNETIC RISKS AND LIMITATION POSSIBILITIES

From the perspective of cyber risk prevention, the Financial Supervisory Authority (ASF) has taken measures since 2015 by issuing the Norm regarding the management of operational risks generated by IT through which the insurers have to apply processes with very well defined control points for the correct and healthy implementation of the IT technologies (Rangu, 2017). As mentioned by the same source, the possibility of biometric solutions has been regulated since 2015. In 2018, through ASF's care, InsurTech Hub was set up - a working group whose main purpose is to support the technological innovation in the insurance field (ASF Romania, 2018; ASF Romania, 2019), to support the insurance market to support the needs of alignment with the European trends of implementation of technological innovations, but also of consumers. It should be mentioned that "Insurtech" has become established as a term used to describe new technologies with the potential to bring innovation to the insurance sector, having an impact on regulatory practices on the insurance market (OECD, 2017).

The work groups are responsible for analyzing the technological phenomena and the activities generated by them in areas such as cyber risks, Big Data, IoT, Blockchain, telematics, the use of robots for recommendations, Artificial Intelligence etc. Telematics systems are, in essence, the technique of connection, geolocation, transmission and automatic processing of information over long distances using modern communication procedures (Stefan, 2016). The insurances made using telematics systems are called UBI ("Usage-Based Insurance") and are based on the use of the machine, in real-time (Radu, 2016). The basic idea of the UBI is to monitor the driver's behavior directly while the person is driving, allowing insurers to more closely align the driving behaviors with the premium rates (NAIC, 2019). It was expected that, with the development of information technologies and the interest of the evil-doers, they would become more intense, and all kinds of ways of breaking the privacy and property of the individual would appear. As mentioned by Badea and Rangu (2019), cyber threats in Romania are increasing, an aspect also reflected in figure 7.

Figure 7 The annual evolution of the number of cyber attacks between 2006 and 2018

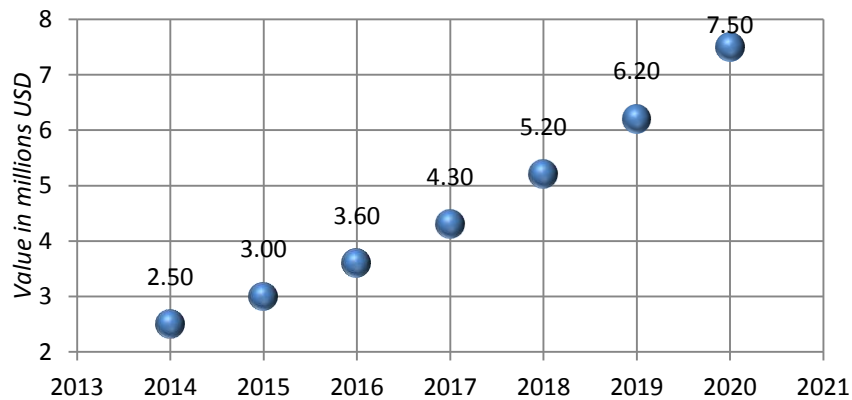


Source: Badea et al, 2019

Cyber-attacks, assuming potential risks of data loss, generate enough concern to have someone think about the possibility of providing such situations; thus, they can also be insured. It can be easy to guess that cyber insurance is very difficult to subscribe to. For insurers, cyber risk has a long reverse. The real cost of a significant breach can easily reach hundreds of millions. As stated Torsten Jeworrek, a member of the board of directors at Munich Re quoted by Forbes (2019) “cyber risks are one of the biggest threats to the network economy”.

Given the above circumstances, worldwide, there is a significant increase in the premium values subscribed for cyber risk insurance, as shown in figure 8.

Figure 8 Estimated values of the premiums subscribed for cyber risk insurance 2014-2020 (USD billion)



Source: Statista 2019 cited in (Badea et al, 2019)

Regarding our country, ASF Romania (2019 p. 9) mentions that the insurance market from us requires support in the development of cyber insurance products, both through national and sectoral policies.

CONCLUSIONS

The speed with which activities are carried out, both human and non-human (at least, if we think about climate change) requires speed in decision-making, but also the possibility that these decisions can be carried out. Insurances can represent a guarantee of the achievement of human wishes, even when the events caused by anticipated risks occur.

Information technologies provide the support that can generate a competitive advantage, if they are used in a properly manner. The way they are used depends on the financial possibilities - sometimes, such applications can cost quite a lot - but also on the vision of the one they would like to use - which is very modern and useful now, it can become extremely outdated (how many people still remember pager, for example?) Note: even though automation simplifies the steps and ensures the speed of compensation, such an example is still delicate in the area of civil liability insurance, where the client seeks the company with the offers. The cheapest, even if it is in bankruptcy; Thus situations arise, as are concrete cases on the Romanian market, with companies that draw up RCA insurance, but are not able to compensate.

Another important aspect is cyber-security. Exposing data and information in the online environment also offers vulnerabilities; therefore, as it turns out, it is necessary to involve the Financial Supervisory Authority. The business models of insurance companies will change in the coming years, starting with the introduction of telematics systems and culminating with the insurance of autonomous vehicles. There are increasingly ambitious challenges for insurance companies, which need to adapt their business models to new technologies.

We can conclude, in a metaphorical way, saying the "door to door" sales we mentioned in the abstract are increasingly changing the "door" type, adapting dynamically to new technological concepts.

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