



ANALYSES ET SYNTHÈSES

-  Survey on the digital revolution in the French insurance sector

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Authors: Nathalie Beaudemoulin, Pierre Bienvenu and Didier Warzee

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As the pace of change of the digital revolution quickens, the *Autorité de contrôle prudentiel et de résolution* (ACPR) conducted a survey on the challenges of the digital revolution in the French banking and insurance sectors. This cross-sectoral survey was conducted in the second half of 2017. It was made up of around 100 open-ended questions and was addressed to a representative sample of six banks¹ and eleven insurance companies² from the two French market sectors.

This issue of *Analyses et Synthèses* focuses on presenting the survey findings for the French insurance sector.

1. The digital revolution is a major structural shock: this observation is shared by all the French insurers surveyed

1.1. While the digital revolution may well be the latest in a historical series of technological innovations, it still represents a fundamentally new and significant challenge for French insurance companies

Irrespective of which past technological changes are used as examples by the sector players (the first telephones, the internet, enhanced computing power boosting actuarial capacities, etc.), the current digital revolution is considered to have several new characteristics:

- a far more rapid pace of change;
- the entire value chain is impacted compared with past innovations that were more focused;
- the customer aspect is particularly important and highly influenced by customer experience in other business sectors, such as with GAF³, which offer a fluid and reactive model that appears to be free and may have an effect on customers' expectations from insurers;
- the increasing importance of customer data and their use, which goes hand in hand with the previous observation.

The lessons learned from these experiences are quite similar and unsurprising: insurance companies stress the need to anticipate, to be organised, to be alert, to seek support through partnerships, to manage the human aspect and to make available the resources required to be active in tomorrow's insurance world. Insurers almost unanimously aim to accelerate the process of making all strategies customer-centric: the customer relationship framework must be made more flexible, responsive and ergonomic, must apply a multichannel or omnichannel model and at the same time must be personalised without intruding on people's private lives.

Consequently, companies have to undergo a cultural revolution, information systems need to be overhauled to support planned innovations and offerings and commercial practices must be adapted to the latest demands. The fundamental difficulty cited by the insurance companies surveyed is not so much making the changes but the pressure of making the changes before their current and future

¹ BNP Paribas, BPCE, Groupe Crédit Agricole, Groupe Crédit Mutuel, La Banque Postale and Société Générale.

² AG2R La Mondiale, Allianz, Aviva, AXA, CNP, Covéa, Crédit Agricole Assurance, Generali, Groupama, MACIF and MAIF.

³ The acronym GAF³ stands for Google, Apple, Facebook, Amazon, and is used to refer to major American digital corporations.

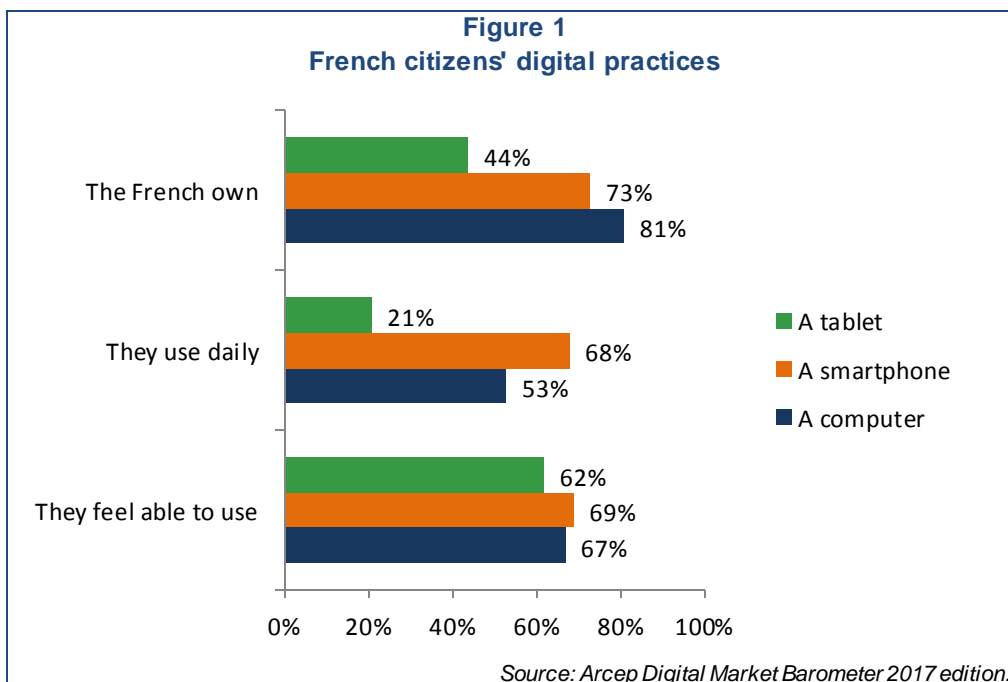
competitors do. We can therefore expect major investments and significant changes in working methods and structures.⁴

French insurers feel that in general the differences between the main European markets are not particularly significant. Differences from other countries or geographical areas are felt to stem from the maturity of the markets, and their regulation or their culture:

- Players in less mature markets have fewer legacy issues in terms of information systems, employees (workforce and profiles) and market position – Eastern European countries are cited as being comparatively more agile.
- French insurers feel that certain, mainly non-European, markets have a more flexible cultural and regulatory approach that offers less protection to the consumer and in terms of personal data use (China and the United States in particular).

As regard their own positioning within the French market, all of the insurers surveyed felt that they were "still in the race", but there are disparities between those that believe they are "in the lead" in this digital transition and those that think they are "well placed".

Generally, when insurers refer to their strengths with regard to the digital revolution, they begin by citing their financial muscle, then their image, their positioning and finally their customer base. For some, their legal form also has an influence, with, for example, the idea that a more long-term strategy, less affected by demands for short-term profitability, is easier for mutual insurance organisations. The constraints identified by insurers tend to be the downsides of these strengths and focus on their organisation's unwieldiness, their IT legacy, managing existing customers and, for mutual insurers, their governance, which is sometimes considered less reactive. Some insurers also stress the difficulties encountered in recruiting the skills required to adapt to the digital revolution.



⁴ Based on responses mainly from large insurance corporations, raising questions as to the ability of smaller organisations to invest the resources required.

1.2. The digital revolution requires an overhaul of the distribution model more than a redesign of insurance products

In order to understand the new customer requirements, insurance companies use feedback from the field (general comments from customers and agents), complaints analyses, customer satisfaction indicators such as the Net Promoter Score (NPS),⁵ which is quite commonly employed, and above all, several studies generated by external sources or internal data analysis tools (number and regularity of connections, use of online services, number of online transactions, monitoring of online claims declarations, etc.). Although social media are considered to be important for insurers, they are perceived more as a monitoring tool, particularly of their online reputation, than as a means of winning customers.

The growing use of digital portals and mobile applications put in place by insurance companies illustrates the increasing importance of digitalisation and mobile telephones (see Figure 1). Thanks to these applications, insurers are able to exploit usage data through digital analytics to understand and even predict customer behaviour.

All these studies agree on the escalation of digital exchanges, with fewer face-to-face visits, the significant upsurge in mobile telephone use at the expense of websites, and customers increasingly rating the quality of the service received based on their experience of that provided by the major digital platforms (e-commerce sites in particular). Nevertheless, according to the insurers, a relatively significant proportion of customers continue to be uncomfortable with digital tools, and insurers wish to retain this customer base. Therefore, digital solutions need to be sufficiently user-friendly to even allow all or part of these groups of people to subscribe.

These trends are more obvious for business that targets the general public rather than companies (although they too are experiencing rapid change). Of note too is the fact that while the internet and mobile telephones are used more and more to get in contact or to complete the first steps of a subscription, with customers becoming increasingly autonomous (the concept of "self-care"⁶), some customers still prefer physical contact for questions they feel are important (particularly life insurance subscriptions).

In terms of products, insurers mention the need for adjustment in order to adapt to societal changes such as the development of the sharing economy or the greater ecological or civic-mindedness of certain segments of society. However, this does not appear to be leading to an in-depth redesign of insurance products.

⁵ The Net Promoter Score (NPS) is a customer satisfaction indicator determined by subtracting the average probability of customers dissuading others from using a product or service from the average probability of customers recommending that product or service.

⁶ Providing customers with the tools needed to perform a certain number of tasks themselves, thus speeding up the handling of cases.

1.3. There is consensus on the inevitability of the digital revolution, with a shared vision of its consequences

Insurers interpret this digital revolution as a source of profound change, and stress that:

- Data will be central to future economic models, either for its commercial use or – more naturally in the insurance sector – for more effective pricing, and access to them must therefore be secured. French customers will only grant access to their data if they understand the importance and the benefits, and the data protection regulations in force in France⁷ and at the European level⁸ will guarantee that otherwise, the data cannot be used.
- Top level service in terms of customer or user experience ("UX") is becoming essential, which involves a frictionless, omnichannel customer relationship. Customers must be able to move effortlessly from one environment to another without there being any consequences in terms of the submitted information and quality of service.
- Even with this level of service, the very nature of insurance products means that contact is inevitably less frequent than in other sectors such as banking. Insurers will have to find a way to increase the frequency of positive (i.e. non claim-related) communication with customers if they are to ensure preferred contact status.

These findings generally prompt insurers to diversify their activities, both to increase the frequency of customer contacts in positive situations and to become the go-to player for certain issues that impact the life of customers by offering more qualitative support with solutions that are not always necessarily financial.⁹ This should help to consolidate customer trust and secure access to customer data, which are fundamental challenges for the insurance business.

Furthermore, the ever-greater expectations of customers in terms of speed and immediacy should not lead to standardised offerings, but rather a form of mass customisation that relies on digitalisation and innovation to be cost effective.

⁷ The law for a Digital Republic of 7 October 2016 creates new IT rights and freedoms and therefore allows individuals to better manage their personal data. It strengthens the powers of the CNIL to impose sanctions and entrusts it with new duties, and also contributes to improving the openness of public data.

⁸ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data. The GDPR (General Data Protection Regulation) is a new European regulation that takes effect on 25 May 2018. It aims to strengthen the rights of individuals, particularly by creating a right to data portability and through provisions specific to minors. It places responsibility on the shoulders of those processing the data (those in charge of handling and sub-contractors). Reinforced cooperation between data protection authorities, which will notably be able to adopt common decisions when data processing crosses borders, confers credibility on the regulation, which also provides for stronger penalties.

⁹ For example, home care services in the event of health problems or solutions for the actual repair and rehabilitation of a residence following water damage, rather than systematically providing financial compensation.

1.4. Insurance companies have common expectations in terms of an increasingly multifaceted competition, but there is no obvious scenario that gives a clearer picture of tomorrow's insurance landscape

1.4.1. Immediate competition from bancassurers

Competition from major digital players (such as GAFA in the United States or BAXT in China),¹⁰ technology firms and telecom providers is believed to represent a major potential threat but the main competitive threat in the short term is felt to come from bancassurers, particularly given the context of the Hamon Law.¹¹ All insurers are also aware that their current insurance competitors are working on overhauling their offering, processes and customer approaches in order to stay in or even lead the race. Therefore, to a fairly large extent, insurers feel that their current competitors will continue to be the source of competition in the future, at least in the short term.

1.4.2. A more distant and even hidden competition from the major digital players (GAFA and BAXT), which has led certain insurers to enter into partnerships with them

The insurers feel that the control over data and the customer approach of GAFA and BAXT will make them serious competitors in the future.

Their commercial and financial performance calms these fears however, as their economic model, which relies on user experience and the exploitation of their data, is already extremely profitable. In particular, the insurers point to the dominance of Google, whose revenues, derived from customers' clicks that are then billed to insurers, continue to grow. Consequently, the insurers feel that these major digital players do not necessarily need to penetrate the insurance sector, which is heavily regulated, given that their core business, for which they control the entire value chain, is already extremely profitable.

The insurers believe that the regulation on the use and protection of data will ultimately determine GAFA's positioning with regard to the insurance sector: while the new European GDPR¹² regulation certainly affects insurers and their own exploitation of data, it is also seen as a potential brake on the expansion and implantation of GAFA-type models in Europe. Insurance companies therefore mainly worry that this regulation will not be evenly applied.

Lastly, it should be noted that players with a direct relationship with the customer fear the entry of GAFA into the market far more than those without. Players that already commonly operate through intermediaries and partners to win customers see themselves a little less as "owners". Some of them even perceive these new entrants as potential future partners or sources of business, to which they could offer their expertise on carrying risk: as part of these partnerships, however, they would have to guarantee the all-important access to data.

¹⁰ GAFA (Google, Apple, Facebook, Amazon) refers to the major US digital players, to which Microsoft could also be added. BAXT (Baidu, Alibaba, Xiaomi, Tencent) refers to their Chinese equivalent.

¹¹ Law No. 2014-344 of 17 March 2014 on consumption (the "Hamon Law") introduced new rules to relax insurance contract cancellation procedures, with a right to terminate at will after the first year of subscription.

¹²General Data Protection Regulation. See footnote on previous page.

1.4.3. A new source of potential competition from suppliers and distributors of technological products

Insurance companies also worry that technology firms, such as driverless vehicle manufacturers, could begin to offer insurance products, whose terms and risks they could manage better than insurers, as add-on accessories to their technological products. Technology firms would then control the product's supply chain as well as the associated risk, and could capitalise on these competitive advantages to reduce the insurance policy to a simple product add-on. The insurer would then lose all contact with and knowledge of the customer. In addition to the issue of driverless vehicles, the same type of problematic also exists for new economy businesses, such as AirBnB, Uber and Blablacar, or on extended warranty products, like mobile phone insurance offered by telephone service providers.

1.4.4. An expected concentration in the brokerage sector

The insurers believe that the brokerage business is likely to experience quite significant concentration. They feel that brokers, whose expertise is essentially in sales and marketing, will have to invest heavily if they are to meet the digital expectations of customers and insurers. Only brokers that are able to offer real value-added in terms of advice to the customer relationship could potentially come out unscathed.

It should also be noted that it is this business sector that could see the emergence of innovative, technology-based distribution models. They could, for example, focus on distribution by finding packaged insurance risk carrying solutions, with its reinsurance or even part of its management passed on to accredited insurers – management could also be delegated to dedicated service providers.

1.4.5. InsurTechs are more generally perceived as partners rather than threats

Young insurance start-ups (often referred to as InsurTechs) are not seen as a threat but as an opportunity: through partnerships with these players, insurers can notably secure technological developments or approaches that they would not manage to rapidly develop internally due to a lack of responsiveness and agility. InsurTechs therefore help them to fight against competition from technology players and GAFAs more effectively. Those that work in the field of customer relations, such as players in automated investment advice ("robo-advisers"), can offer value-added to customers of insurers without really threatening the relationship between the customer and the insurer. However, the insurance companies surveyed are careful to stress that a level playing field between insurance players is vital, motivated for example by so-called collaborative insurance providers, even though they do not consider these economic models to be particularly viable.

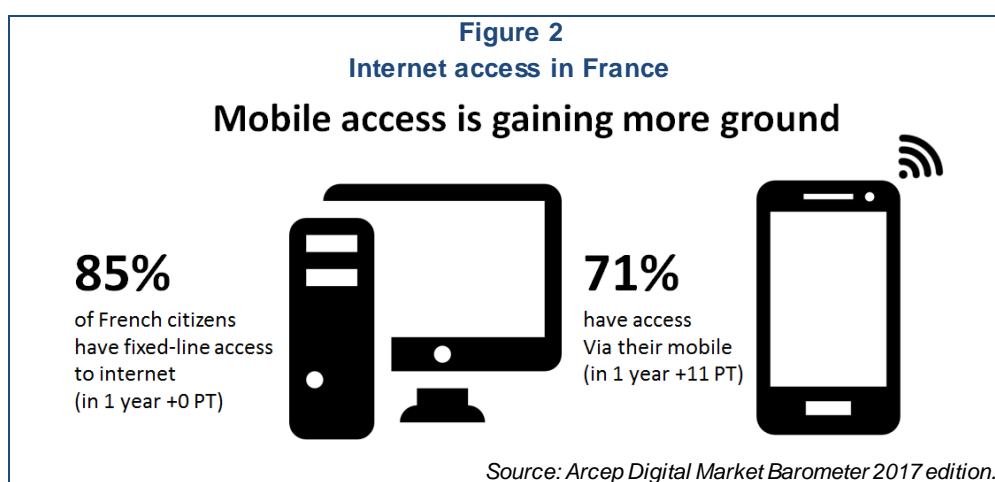
1.4.6. Perceptions of insurance market developments are contrasting and largely uncertain

Opinion on the form that the insurance market of tomorrow will take is generally quite uncertain. The majority of insurers feel that they and their competitors have taken the measure of the digital revolution and that their initiatives should guarantee the predominance of current players in the future. During the transition, their partners and offerings will probably change however, to provide more ancillary services, for example.

1.5. Insurers are exploring the potential of numerous technologies, from the smartphone to artificial intelligence and blockchain, that are at varying levels of development

1.5.1. The smartphone and multichannel solutions: certainties

The insurers systematically concentrate their responses on their ability to manage a multichannel customer relationship effectively against the backdrop of widespread smartphone use (see Figure 2). All insurers accept that the customer experience has to become multichannel – with the smartphone central to it –, frictionless and entirely consistent, while providing rapid and flexible processes. While the majority of players have already studied process optimisations for each of their channels, the multichannel aspect remains the key challenge. It would involve, in the case of declaring and following a claim for example, enabling a customer to seamlessly move from using the internet on a computer, to calling on a telephone, to using a smartphone application.



1.5.2. Big data and the Internet of Things: technologies already in use or being introduced

Big data and the Internet of Things are often interlinked given the significant volume of data that can be generated by connected objects. Insurers are convinced of the potential that connected objects have to offer and are therefore conducting trials on and even rolling out certain solutions, often in tandem with InsurTechs. How exactly they will be used has yet to be clearly defined. Connected objects associated with car insurance, such as the black box telematics devices that measure driving performances, are felt to be the most advanced usage so far. Stages of development vary from country to country, with Italy, for example, considered to be the leader on this market. For housing-related uses, the question of the economic model seems to be more difficult to resolve, with doubts surrounding who should pay for the equipment – the supplier, the insurer or the customer. With regard to health-related uses, due to the legal and ethical minefield associated with pricing strategies based on further individualisation of risk, insurers mainly envisage approaches centred on prevention or support.

Connected objects often provoke the question of reliability and security of information, and the absence of defined responsibilities between manufacturers, users and data recipients further complicates the legal framework and safeguards associated with their use. Furthermore, the use of sensitive data, such as medical details, raises specific issues in France, particularly with regard to the accreditation

of health data hosting providers. Therefore, while health insurance-related services exist, they are currently limited.

Big data applications are already underway, and are generally associated with developments in artificial intelligence, which can help to optimise a number of tasks (handling complaints emails, identifying fraud, optimising fee structures through dynamic pricing, enhancing sales targeting and related communications, chatbots, etc.).

In addition to these opportunities, insurers also point out a number of risks involved in using big data and connected objects, mainly related to the significant volume of data handled and their level of sensitivity. This leads to data protection issues in terms of security against cyber-risk and compliance with regulations governing their use (GDPR). For example, cyber-risk is mentioned in the case of driverless vehicles, which present a serial claims risk that could be triggered by a cyberterrorist attack.

More generally, the heightening sophistication of algorithms could increase the risk of "black boxes" and contribute to the development of unethical behaviour. Risks mentioned include the possibility of discrimination if a moral baseline is not integrated into the machine learning of algorithms or the danger of excessive individualisation of risks, disregarding the inclusive and supportive aspect of insurance.

1.5.3. Artificial intelligence: insurers state that some applications are imminent, while others still require further development, depending on the type of AI

The majority of insurance companies believe that artificial intelligence (AI) is an extremely promising area of development, although enthusiasm and the opportunities it offers vary depending on its usage. For example, some insurers anticipate its use in the field of driverless vehicles over horizons ranging from 2025 to 2035, but only after the crucial questions surrounding the determination of legal responsibility have been resolved.

Furthermore, along with process optimisations related to digitalisation, AI could affect back-office working conditions. Consequently, insurers point out the need to rethink the forward-looking management of jobs and careers in order to incorporate the training required in the use of these new tools.

The widespread introduction of other AI applications is expected over a shorter time horizon of five to ten years (see [Figure 3](#)), and concerns widely contrasting fields such as customer acquisition and relations via chatbots, the implementation of tools designed to detect faint signs of potential contract terminations, claims handling with the identification of documents or even appraisals based on photographic evidence, or security and combating fraud. The development of some of these usages is already quite advanced, with applications undergoing trials and even in production.

Figure 3
AI applications in the insurance sector

Process	AI applications in development
Customer first contact	<ul style="list-style-type: none"> - Creation of more personalised products - Enhanced operations during onboarding process - Assistance for advice to customers and its formalisation - Optimisation of pricing, dynamic modelling
Customer relations	<ul style="list-style-type: none"> - Analysis and appropriate transmission of customer emails - Chatbots offering 24/7 online support - Modelling of churn risk - Enhanced cross-selling
Claims handling	<ul style="list-style-type: none"> - Identification of fraud - Automated checking of certain documents - Automated management of certain services - Image analysis for claims classification (or more)
Compliance and security	<ul style="list-style-type: none"> - Identification and knowledge of customers (KYC) - Assistance in the identification of fraud and money-laundering networks - Analysis tools for regulations and virtual assistance - Optimisation of reporting mechanisms - Improved cybersecurity

1.5.4. Blockchain is a technology that can often lead to confusion and a wait-and-see approach, even if some insurers are convinced of its potential

The technological development that causes most confusion and differences of opinion among insurers is blockchain. Some insurers are quite enthusiastic about its development potential, subject to the definition of a suitable regulatory framework, and are actively testing internally, while others seem to have adopted a wait-and-see attitude for the moment. It should be noted that a certain number of players also participate in market projects such as the trials sponsored by the *Fédération française de l'assurance* (FFA – the French insurance federation) on the possibilities for enhancing flows between insurers in the context of the Hamon Law or the "LaBChain" market initiative launched by the *Caisse des dépôts et des consignations*. Several players believe that blockchain – in its private form¹³ – could be a useful tool to optimise shared processes between insurers. One example is the work of the B3i consortium, which aims to use blockchain to improve the operational efficiency of flows between insurers and reinsurers.

All the insurers are of the opinion that these innovations create risks and opportunities in relation to the greater openness of systems: even if blockchain is perceived as an opportunity to optimise internal processes and processes shared between players, it is still regarded as an immature technology, particularly with respect to its legal aspects and the resources needed to keep it functioning (the existence of an IT ecosystem enabling the secure development of applications).

Consequently, for the majority of players in the insurance sector, the BtoC usages that would be open to customers are not foreseeable in the short term.¹⁴ The few

¹³ Due to the problems related to governance, responsibility and territoriality associated with public blockchains.

¹⁴ In any event, not for complex products such as car insurance, comprehensive home insurance and civil liability insurance. Only extended warranty products are under consideration.

insurers who are considering BtoC applications would like to see an experimentation framework that would protect them against regulatory and legal risks by conferring legal value on *smartcontracts* in particular.¹⁵

All these new technologies are vectors for openness and bring about greater interconnectedness between information systems. While this openness is deemed necessary to enable the creation of commercial and technology partnerships, it also escalates the challenges associated with cybersecurity.

2. French insurers pursue similar strategic responses to the digital revolution, although their approaches sometimes differ

Figure 3
The digital revolution's main opportunities and threats for the French insurance sector

Main opportunities	Main threats
<ul style="list-style-type: none"> - Reduction in costs and number of claims (optimised pricing) - Differentiation from competitors (new offers, personalised services) - Improved customer retention (through enhanced customer experience) - Additional income from new risks guaranteed and ecosystems covered - New value propositions, new positioning in a more global service 	<ul style="list-style-type: none"> - Pressure on margins at a time of major IT investment - Loss of market share with the entry of new players with less legacy issues - IT security: cyber-risk, data protection - Increase in number of claims due to inadequate control over new risks covered - Loss of access to customer data by becoming a provider of capital only

2.1 Quite contrasting partnership strategies ranging from an open innovation policy to safeguarding technological expertise internally

FinTechs and InsurTechs are, of course, often seen as accelerators of innovation, the "goads" of digitalisation, but partnership strategies are generally put in place by the insurance companies, which are trying to come up with the best way to make the most of InsurTechs' strengths (agility, technology) while remaining unscathed from their perceived weaknesses (financial fragility, operational risks).

In this regard, insurers' responses are quite contrasting, ranging from groups that venture wholeheartedly into all partnership possibilities via different funds and structures to others that adopt a more selective strategy, mainly concentrating on technology partnerships.

Consequently, some insurers feel that if those innovative players were getting too close to them due to an excessive push towards integration, it could affect negatively their dynamism. They consider that it is preferable and more profitable to develop the new applications they require themselves. By contrast, others favour relying on the agility of these innovation players to speed up their internal

¹⁵ These companies take the example of blockchain technology to say that a "sandbox approach" would be appropriate.

developments and acquire disruptive technologies or models at a lower cost. They therefore try to build cooperative frameworks that will not smother the innovative capacity of their InsurTech partners.

The criteria for selecting new InsurTech partners are (i) their ability to provide, or help to provide, improved, industrialised customer service, (ii) their control over data and their security, and finally (iii) the quality of their project managers. Lastly, the different insurers use – and often combine – four approaches to cooperation in varying proportions:

- **Commercial partnerships:** insurers wish to benefit from the responsiveness and agility of the InsurTechs proposing new customer services or offering commercial differentiation that would fit with their strategic target, but that they are unable to rapidly put in place at this time.
- **Technology partnerships:** these partnerships do not directly concern commercial aspects but rather touch upon expertise, prevention and combating fraud. This approach can also be adopted when the insurer wants to retain control over customer relationships. It thus uses a technology service provider that supplies a white-label product in order to benefit from the technology while safeguarding its customer relationship.
- **Acquiring minority stakes:** insurers thus generally aim at having some influence over the governance and development of InsurTechs without interfering to the extent that the start-up spirit of the partner would be affected.
- **Takeovers:** these can often stem from the desire to invest in a "nugget", in which the insurance company has sufficient faith to provide it with all the resources, and particularly the financial resources, needed for it to grow, or to secure essential technological expertise by controlling it entirely. In either case, the issue arises of integrating these start-ups in large insurance corporations without strangling their agility.

2.2. Insurance companies also turn to technological innovations to improve the operational efficiency of their internal processes

These improvements affect both the back office and the front office. The digitalisation of processes already enables the automation of certain tasks and even their delegation to customers in an environment that aims to increase their autonomy (the concept of "self-care").

Artificial intelligence technologies should allow for improved fraud detection and photo-based claims assessments in particular, while blockchain could help to reduce human handling in processes shared with partners and competitors. Overall, this should contribute to reducing the arduous nature of certain tasks that are repetitive or low value-added and/or still require extensive manual processing.

Digitalisation should also impact the support functions such as actuarial services, finance and IT via the tools used and also via the very nature of the tasks assigned to them. Management control will have to develop indicators and the required expertise to assess innovation partners and internal projects developed using agile methods. Actuarial services will have to further develop the skills needed to handle large volumes of new data (data science) and to adapt pricing policies to customers' and commercial partners' new demands. The IT department is obviously acknowledged as being particularly affected by digitalisation as it has to upgrade the information system, while at the same time opening it up to the exterior, giving it greater responsiveness and agility and maintaining and even improving its level of security.

2.3. Major financial investments but comparisons are difficult

All insurers are fully aware that the digital revolution is irreversible and integral to the future development of their company and their sector and have therefore already incorporated these transformation challenges into their internal governance frameworks at the very highest level. All companies' strategic plans target an adaptation to digital technology and changes in governance and the associated budgets, with explicit responsibility allocated at executive committee level to a specific person – generally a Chief Digital Officer or equivalent.

With regard to the amounts invested, making comparisons between companies is not easy as budgets can include spending on information system improvements that would have been made irrespective of the digital revolution.

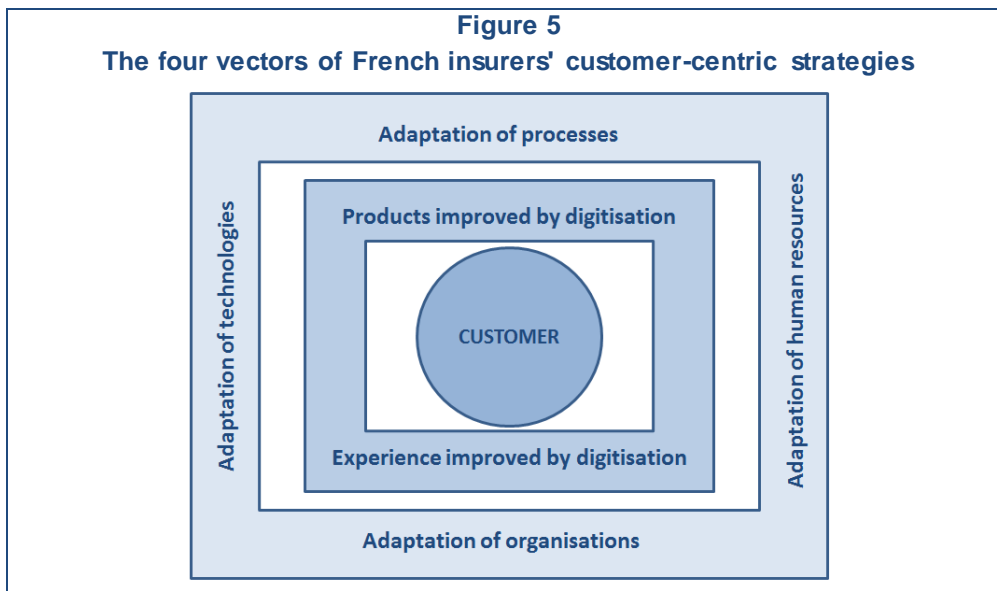
Furthermore, the generally substantial investments that are anticipated cast doubts on the ability of more moderately sized structures, with more limited potential for cost pooling across companies and geographical areas, to invest the sums needed in technology and innovation. These players therefore could see greater advantages in grouping together, which could fuel a trend that had already started with Solvency II.

2.4. Ultimately, the strategies of French insurers are very similar and all focus on the customer experience

Generally, the responses provided during the survey give the impression that the strategies defined by the various French insurance companies are very similar (see [Figure 5](#)). They involve implementing a wide-ranging digital transformation, investing heavily in innovation and information systems and reviewing procedures and working methods accordingly, both internally and with partners. These different levers must also enable the companies to set the highest standards in terms of customer experience and thereby lock in customer loyalty and guarantee the access to their data that is essential to conducting insurance business.

The aim of insurers is therefore to "stay one step ahead" of GAFA, which still operate in a wide range of sectors, by taking advantage of their own expertise in selection, risk management and product relevance and by challenging potential competitors on their own technology and expertise (big data, AI, etc.) by matching their level and even surpassing them in terms of customer service.

While the strategies are very similar, they differ in their implementation and the resources involved.



2.5. In order to carry out this strategy, institutions must consider their own characteristics – their information systems, human resources and customer base – all of which serve as transformation levers

Insurance companies believe that they will have to manage three legacy issues if they are to digitalise in such a way as to establish a position of strength over their current and future competitors in the digital economy:

- 1) First, **the IT legacy**. In order to address the acceleration of time associated with the digital revolution and to foster integration or interoperability with their partners, insurers are re-urbanising their information systems and adopting so-called "agile" project methods. Digital transformation plans therefore programme shorter project times with regular deliverables to reduce time to market. At a time of considerable uncertainty, with longer investment payback periods than before, the challenge is to identify the appropriate level of investment and to separate genuine innovation projects from gimmicky trends.

- 2) Second, **the HR legacy** requires a minimum transition period for digitalisation and equally significant financial investment. In this context, it is not only about the acculturation of people to digital technology – the corporate culture must also evolve. The Human Resources departments are therefore working hard to ensure that employees adapt to digitalisation and its requirements, through raising awareness and training staff at all levels and in all business lines of the company and by recruiting from the digital sector (telecommunications, web agencies, etc.). Insurers state that they have committed considerable resources to convincing scarce and essential digital profiles to join the companies concerned. These new business needs correspond to all highly-skilled professions such as IT engineers, data processing and unstructured data analysis experts, UX-UI (user experience-user interface) customer experience marketing specialists or online reputation specialists. Different skills and soft-skills profiles also become a requirement with the capabilities expected in agile project management and collaborative working. Staff management is obviously a key point and the natural attrition associated with an ageing

employee structure is generally highlighted as a fairly significant adjustment factor.

- 3) Lastly, **the legacy associated with customer relations processes**. As the customer relationship becomes even more crucial, the customer experience has to become seamless and company employees therefore have to contribute to the perfect consistency and fluidity of customers' processes and operations. Against this backdrop, institutions have to acquire customers in ever greater numbers who are comfortable with and even insist on digital services while retaining their current customer base.

3. The digital revolution contributes to the emergence and escalation of new and existing risks that are determined and taken into consideration by the insurance companies

3.1. Insurers would like to have a digital identity to withstand the risks associated with anti-money laundering and countering the financing of terrorism (AML/CFT)

The boom in digital practices and particularly remote customer subscription is perceived as a factor increasing the risks related to money laundering and terrorist financing. Insurers are going to exploit the possibilities offered by the European Regulation on identification and electronic signatures¹⁶ – that many are rolling out between 2017 and 2018 – but feel that a usable digital identity for financial players would be a real advantage for the French insurance sector.

3.2. The risk associated with inadequate information systems

Digitalisation is seen rather as a factor of operational risk reduction thanks to the automation of manual tasks and the monitoring that it enables. However, some feel digitalisation could create new forms of fraud that organisations have not yet had to deal with and for which they are consequently less well prepared. For example, image forgery techniques could be introduced to fool the image recognition tools used to estimate damages.

With regard to operational risk, with the obvious exception of cyber-risks, the dangers associated with information systems not being upgraded are currently the most pressing. The respondents stress the importance of modernising IT tools, which demands project management that is consistent and pragmatic. However, the difficulty facing companies is twofold: (i) given the age of information systems, the IT projects to replace them are often time consuming and expensive without offering any guarantee of success; and (ii) uncertainties persist as to the level of maturity of different technologies and which technologies will ultimately create value.

The use of cloud computing is a subject that brings out a range of quite varied positions, from outright rejection of public cloud computing for some to targeted use and finally quite substantial use for others. In any event, the risks associated with cloud computing and the measures to be taken in consequence seem to have

¹⁶ Regulation (EU) No. 910/2014 of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market (eIDAS Regulation).

been determined. This issue is still the subject of occasional internal debates within the insurers concerned.

3.3. A very rapid growth in cyber-risk that calls for substantial investment

Quite naturally, the opening up of information systems via application programming interfaces to interconnect insurers with their technology and commercial partners leads to escalating cyber-risks and associated costs. At the same time, the entry into force of the GDPR in May 2018 is making insurers even more uneasy about data protection. Insurers consider that if they cannot prevent cyber-attacks, the fact of having a suitable security framework should encourage cyber-attackers to favour "soft targets" out of pure pragmatism. An area that must be closely monitored is the development of connected objects, whose flaws were the subject of warnings from the ANSSI, notably in its 2016 annual report.¹⁷ Driverless vehicles are also a security challenge given the potential for serial risk triggered by a cyber-attack.

3.4. Institutions continue to demonstrate a certain degree of caution in relation to insurance product offerings to cover the new risks

Insurance against cyber-risk is perceived as an opportunity for the years to come. Insurers feel that this type of risk presents certain similarities with the risk of natural disasters and that consequently reinsurance will be essential for the development of a cyber-insurance offering. Many feel that the creation of a risk pool-type mechanism¹⁸ – potentially similar to the *Caisse centrale de réassurance* (CCR – the French central reinsurance fund for natural disasters) – would be beneficial to help insurers that agree to offer substantial cover for cyber-risks to limit their exposure.

However, in addition to the cyber-risk directly related to the digitalisation of the economy and stricter data regulations, other risks arise:

- Risks accompanying societal changes such as the development of the sharing economy as an alternative to the ownership economy. Car insurance risk could be very different depending on the owner's participation in these forms of leasing.
- Insurers also worry about embedded insurance models included as an accessory to another product (car insurance directly included with a driverless vehicle or insurance against breakage included with products sold on e-commerce sites, for example) as they result in the loss of access to the data needed to determine an appropriate pricing model.

3.5. The actuarial function will be more sophisticated

The actuarial function will have to incorporate new tools, new methods and new human skills to modernise the collection and handling of data (big data combined with advanced analytics techniques). Actuarial functions are currently aiming to achieve several objectives: improving the understanding and appreciation of the quality of the data used; adapting and expanding the parameters incorporated into models; improving the dynamic modelling of behaviour; and analysing changes in

¹⁷ *Agence nationale de la sécurité des systèmes d'information* (ANSSI – the French national cybersecurity agency), 2016 activity report.

¹⁸ Like the GAREAT structure created in France in 2002 whose vocation is to manage the reinsurance of the risks of attacks and acts of terrorism.

claims trends. Ultimately, the critical issue will be guaranteeing the quality of the additional data used.

Insurers are also aiming to improve the segmentation of their prices to better adapt them to individual customer profiles. More specifically, real-time use of data could even lead to the introduction of pricing models that also operate in real time. The next developments will probably concern the economic potential of customers (in terms of claims, but also additional sales or cross-selling and therefore, essentially, profitability). Another objective is to identify as much as possible the risks of anti-selection for non-standard profiles and the problems associated with risk concentrations.

In this respect, the exploitation of more abundant data, particularly collected through connected objects, could certainly allow for better risk anticipation through the detection of faint signs of fraud, for example. With regard to fraud by intermediaries (such as fraudulent declarations), the automation of tasks should also help to improve the detection of anomalies.

3.6. A need for discernment when selecting the innovations and projects that deserve industrialisation from the huge variety on offer

Digitalisation requires significant, and often urgent, investment in information systems. However, the return on investment on these projects still remains uncertain. The ability to distinguish gimmicky trends from genuine value-creating concepts will be essential to making the choices forced upon insurers by limited financial capacities. Furthermore, the switch from the trial phase to the industrialisation phase for companies' most promising innovations represents a significant challenge for insurance companies for the years to come.

3.7. A transformation that has to cope with the sensitive management of human resources and related social challenges

The issue of human resources is another focus of attention. Indeed, even if the responses provided by insurance companies are generally optimistic and proactive in this respect, the impacts of new technologies (digitalisation of customer contracts, process automation and artificial intelligence, for example), if rolled out on a wide scale, will have to be more closely assessed.



61, rue Taitbout
75009 Paris
Téléphone : 01 49 95 40 00
Télécopie : 01 49 95 40 48
Site internet : www.acpr.banque-france.fr