accenture

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Accelerating Automation for Insurance

January 2021

Summary

1 Introduction

Over the past decades, the insurance industry has been one of the most profitable, surpassing $ 6 trillion dollars mark for the first time ever in 2019 for global direct premiums, keeping its financial soundness despite all the changes occurred in the market and that heavily impacted several businesses. Although total premiums expanded in both nominal and real terms, overall growth was slower than in 2018[1] and the trend seems to continue.

The global slowdown was caused by the concurrence of several factors such as a decline in global trade that affected insurance premium growth[2]. In this context, there have been large tech companies (e.g. Google, Tesla, Amazon) that tried to enter the market.

Moreover, industry scenario following Covid-19 outbreak is expected to become further challenging across main LOB (Line of Business), under the concurrence of several drivers:

- Lower income driven by weakened demand and decrease of in-person sales as a result of lockdown and social distancing.
- Increase incident of fraud on P&C (Property & Casualty), unfavorable litigation and life/ health insurance claims.
- Pressure on investment income due to quasi – zero rates.

Beyond ordinary responses, Insurance companies' reaction, is also fueled by rapid adoption of IA (Intelligent Automation) technologies with the expect the following consequences:

- Accelerated cost reduction across both distribution and operations.
- Usage of full omnichannel relationship with clients and both new, digital and virtual channels solutions, based on conversational AI technology.
- Adoption of cloud-native technologies, with a potential additional cost reduction and migration of applications.
- Spread out of Liquid workforce culture across the organization.
- Integration in the value chain of strategic partnership to transform key processes, increasing business resilience and flexing the cost curve.
- Protection improvement redefining the strategy of how products are "written and sold", through agile adoption of digital products and add-on services (e.g. remote diagnosis).

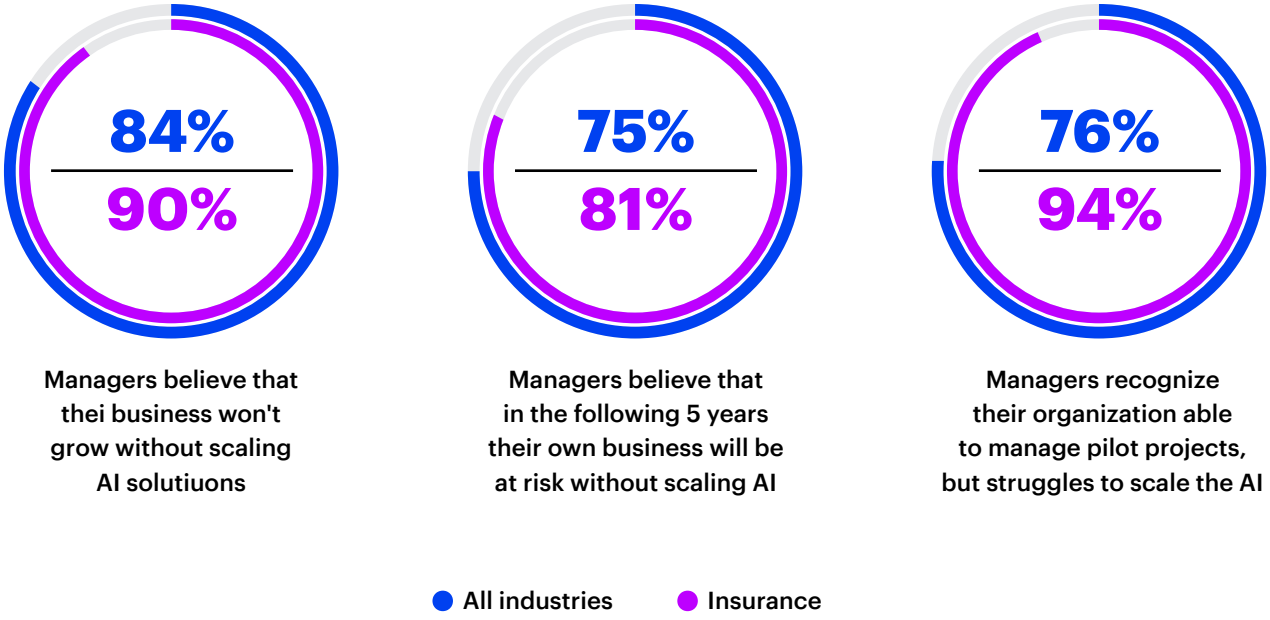
1-Accenture's research. The growth calculated in 2018 was 6,2% while in 2019 growth was 2,3%.

2-Other economics factors are the slowing employment growth, and other macroeconomics factors such as Brexit uncertainty and tensions between the US and China that will continue to weigh on global trade. In addition other factors have concurred to the slowdown too: increasing interest in the sector showed by large platform companies such as Google, Tencent, Rakuten and Softbank that are actively engaging in more and more Insurtech transactions (however, they have yet to make bold moves into the sector) and the entry of completely new players like Tesla and Amazon.

In such context, emerging technologies, if properly used, offer to companies the opportunity to react to the mark up erosion and therefore protect the sector profitability. Among them we believe that IA will play a pivotal role. Indeed, an Accenture global study involving 1,500 C-suite executives from 12 Countries shows that 84% of managers believe that leveraging artificial intelligence (AI) allows them to achieve their growth goals and almost each of them consider AI a strategic factor. This data is expected to increase further as a result of the new remote working methods and digital solutions that were adopted by the companies to deal with the Covid-19 emergency. The topical challenge for insurance companies in this period of transformations is to effectively select the solutions that best fit their need of renovation and to use them at the best of their potential.

The huge amount of information available create barriers in understanding which solutions are valuable and suitable for an insurance organization. Recognizing that **new technologies are key factor** for business growth is no longer enough, it is necessary instead to **identify which of the solutions are effective** for the insurance company. "Accenture global study" shows that 94% of the insurance's managers acknowledge that they have difficulty in doing so. In addition, three out of four managers believe that by not scaling AI in the next five years, they would put their business at risk.

Chart 1
Comparison of scaling IA in insurance with all industries



Instead of marrying with a specific mix of technologies tools, is even more critical to the success of the transition **"orchestration" of a whole Accelerating Automation Ecosystem.** One of the purposes of this document is to provide a synthetic description of the **opportunities offered by the IA technologies** that have now reached an adequate maturity which allow them to be implemented, scaled up and combined to build ecosystems. The current cost-opportunity of the mentioned Intelligent Automation solutions enable organizations to **reinvent their core internal processes** improving efficiency, time-to-market and accuracy or just implement them in specific processes in order to achieve defined results. The value of the Accelerating Automation Ecosystem has been shown even in the extreme emergency due to Covid-19. In fact, the processes already automated have not been affected by the complications related to the need for physical presence of the operators and have therefore guaranteed business operations continuity. In the same way, it has been possible to carry on the automation of processes still under development, as IA solutions can be remotely delivered. In particular, the focus is on **Intelligent Automation (IA) solutions** (Optical Character Recognition "OCR", Natural Language Processing "NLP", Natural Language Understanding "NLU", Machine Learning "ML", Internet of Things "IoT", Robotic Process Automation "RPA", Conversational AI), while also describing other top tech-trends such as Big Data and Blockchain, that, considered as a whole, create the so-called "Accelerating Automation Ecosys-

Chart 2

The Accelerating Automation Ecosystem as a set of technologies needed to shape the future of an Insurance Company

Optical Character Recognition

Natural Language Processing and Understanding

Image recognition

Conversational AI

Machine Learning

Robot Process Automation

Quantum Computing

Internet of Things

Advanced Analytics

Blockchain

Biometrics

Telematics

2

Top trends in advanced automation

In today's insurance market several technologies trends are emerging such-as user-friendly software to develop AI solutions, increased adoption of **Conversational AI and solutions that leverage on other technologies to create ecosystems and boost the benefits reached by Intelligent Automation in terms of earnings and the quality of the services provided**. In parallel, there have been several new applications of that Intelligent Automation technologies (e.g. innovative solutions for medical consulting, new technology system in order to approve or refuse insurance contract following an automatic eligibility review, a technologically advanced process for an automatic settling of roof and property claims based on building-3d-model via smartphone camera) and a spread of new trends in the market as a whole.

2.1 A closer look across the industry

2.1.1 User friendly-AI

Empirical observation suggests that Artificial Intelligence journey is following a path similar to that followed by pure Robotics RPA in the past years. The spread of RPA solutions has spiked when they reached an adequate level of ease of development and, therefore, also cost and accuracy. Likewise, **AI solutions** are becoming just as easy to develop, with more **user-friendly interfaces and cheaper software**, that enable some use cases implementation without the need of a deep knowledge of traditional programming languages. These tools use images to be aligned to create sequences in which each block represents an AI algorithm already trained, open-sourced or available for a small fee, supplied by HiTech companies and allow to develop customized solutions in an easy way. Another feature for example is the possibility to teach to these tools by making the user giving them simple examples (like images) rather than many and complex instructions written in a programming language, as presented by Google AI specialist and Chief Decision Scientist Cassie Kozyrkov in WebSummit 2019 in Lisbon.

An additional benefit is the fact that, being the AI algorithms already trained, these solutions will often relieve companies from the task of collecting **huge amount of data to train their own algorithms**, while in the meantime guaranteeing an adequate **level of accuracy**. This evolution will allow firms that are facing difficulties on scale their AI solutions up to leverage on new vendors that offer cheaper and user-friendly tools useful to go from AI pilots to business as usual.

2.1.2 Conversational AI

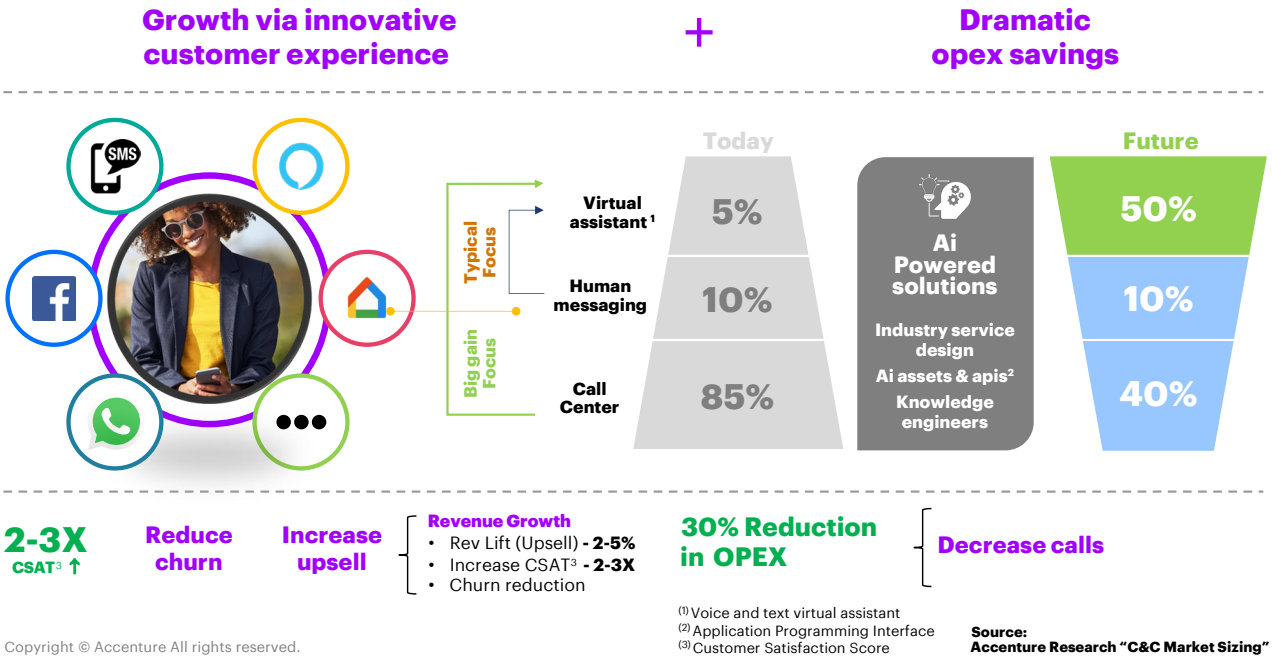
Voice search traffic on web powered by AI solutions has recently seen an astonishing increase. In 2014 voice search traffic was negligible (near 0% of the world's traffic) but it now sees 200 billion searches per month, equal to 10% of the world's traffic and it is expected to reach the 15% of customer's interactions by 2021 with an improvement of 400% respect to 2017[3]. This dizzying **improvement in the use of Conversational AI solutions** can be explained with the spread of **voice assistants** from both large and small white label players applied to customer operations in order to speed up customers interaction by increasing their satisfaction as shown in the chart below, and with the ever-increasing integration of these solutions with other devices available in the latest generation cars.

Indeed, the use of these solutions reduces the need for physical operators because the AI solutions can be used to assess the most frequent and easy request implying a significant reduction on operators involved in the process. It was estimated that a Conversational AI solution can reduce the inbound inquiries to contact centers reaching an FTEs saving up to 20% of the total that, for a medium-sized insurance company, is equal to 3 million € per year. In addition, there would be an improvement in customer services with a user-friendly experiences available 24 hours per day that can be either used as a new channel for commercial campaigns.

Such a trend is strictly connected to the change of customers behaviors who prefers to use devices with a more natural, engaging and responsive interaction without typing on a

Chart 3

Example of application of Conversational AI solution



3-Gartner: Market Guide for Conversational Platforms

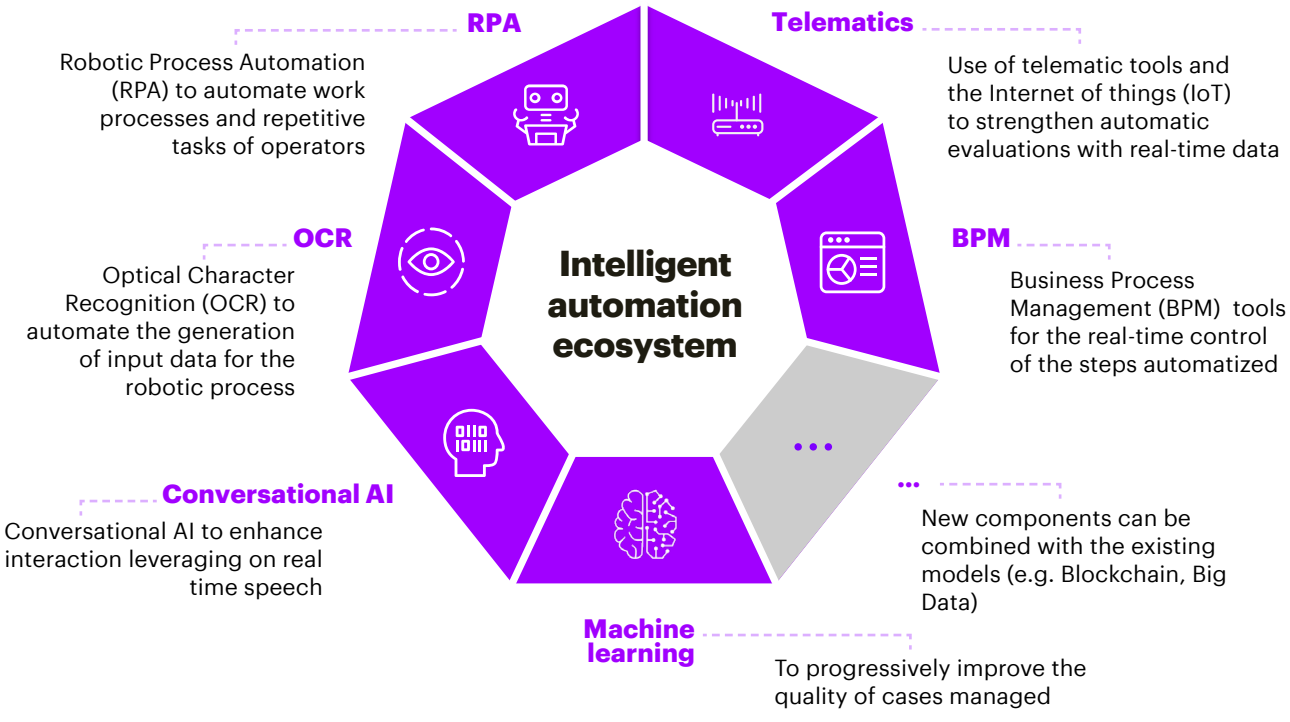
screen. Today, many insurance companies are moving towards an increasing use of technologies in the compilation of **car accidents** such as digital compilation of documentation through apps, reading data from documents, or virtual assistant to help the filling work. These solutions, combined with an increasingly strong **customer engagement** thanks to Conversational AI, will result in the creation of tools able to fill the documents up just using the voice directly in the car assuring, at the same time, an high quality level of the documents produced, reducing the settlement time and any possible contentious costs.

2.1.3 Ecosystem of technological enablers (IA + Other)

One of the emerging trends in the insurance market is the creation of new ecosystems through the convergence of different **technologies**. No single solution can bring transformation on its own, so insurance companies should instead become active players of the **Accelerating Automation Ecosystem to orchestrate and combine different technologies** such as Business Process Management (BPM) tools, Blockchain and Distributed Ledger (DLT), Telematics, Artificial Intelligence with all its shapes such as Conversational AI (that includes Natural Language Processing and Understanding), Optical Character Recognition (OCR) tools to exploit their full potential and achieve benefits both in terms of costs reduction and services offered (both to internal users and customers). The next step that companies should reach is the ability to scale combined technologies, but to do this they need access to a data ecosystem characterized by a set of infrastructures and analytics that processes and generates data in order to produce useful insights and thus to respond to the needs of customers and to expand the range of services offered.

Chart 4

Technological enablers characterizing the IA ecosystem



The combinational effects of Intelligent Automation and other several technologies (e.g. Blockchain, Telematics, NLP, Big data) and the logarithmic cost reduction is creating the opportunity of use cases unimaginable just few years ago. Looking forward, this technology mix will take on enormous dimensions, thanks to four key drivers:

- Decreasing of cost storage.
- Exponential growth of data.
- Open Source frameworks and platforms.
- Virtually unlimited computing power in cloud.

In order to correctly combine the AI algorithms with other technologies, insurance companies will need to **orchestrate a large amount of data, not always available in their database but also captured from different actors** (e.g. insurance experts, car manufacturer, counterparts, hospitals) with privacy, security and trust issues between the parties. All these drivers will allow the development of increasingly complex artificial intelligence algorithms based on connections with other technologies to benefit from the advantages offered by the entire technological landscape.

To achieve the full potential of the technology mix, insurance companies need data for algorithm training, often creating relationships with third parties in the value chain. In this context of trust between the parties, data protection will be a central issue. **The orchestration of disruptive technologies combined with the insurance business process knowledge**, enables a system to be trained and act upon trustworthy data, thus going beyond the trust issues of companies that limit the amount of information available. There are very interesting scenarios that have been spreading in recent years to solve this problem, such as increasing use of **telematics data**[4], trends of **federated learning**[5] and the **decentralized AI marketplace**[6].

Orchestrating different technologies must always be accompanied by responsive and responsible management of them, which means assessing and addressing the risks associated with the adoption of the technologies and providing standards that manage cyber risk (e.g. cyberattacks or unauthorized accesses) or any other risk associated with these solutions such as the risk that AI should be unethical or should provide results that do not take into account the management of diversity (e.g. automatic assignment of subscribers' risk profile based on gender or ethnicity); so companies must therefore take all the necessary measures to implement solutions that are responsible IA.

4-Telematics data: using real-time recorded data directly from IoT devices it can be possible to ensure greater accuracy and promptness of the data to speed up the automation solutions both under development and in production phases.

5-Federated Learning: using of blockchain and machine learning collaborative approach with decentralized training data, uses telematics and shared server/ databases in order to aggregate inputs from different actors and provide a secured tamper-proof traceability of processes (e.g. a distributed ledger of data from insurance companies, experts, hospitals in which control and ownership of their data are embedded in the protocol).

6-Decentralized AI marketplace: computational power or training data for AI/ ML scopes are exchanged between parties protecting sensible information thanks to Blockchain.

2.2 IA innovative solutions in the insurance market

The health ecosystem could bring several benefits to insurance companies. Indeed, scaling up this solution, would allow to **increase the services offered to customers** related to their insurance policy and even a reduction in costs for the reimbursement of medical services provided to healthcare facilities or professionals.

Recently, several innovative solutions have been launched within the insurance industry providing benefits such as reducing costs or increasing customer services. Among them, one of the most valuable is the solution provided by a healthcare platform that shows how leveraging AI ecosystem, the company has managed AI and mobile health to provide an **innovative solution for medical consulting**. These clinics, powered by virtual doctors, have been trained with more than 300 million data and are able to diagnose 2.000 common diseases. When a customer gets in one of these clinics, the virtual doctor collects all the symptoms supplying, to a physical doctor, a preliminary diagnostic suggestion with an international standard accuracy level. Then the physical doctor makes a diagnosis with the related treatment and medicines to be acquired directly in the virtual clinic supplied with more than 100 common medicines or, buy from one of the pharmacies affiliated. These clinics are available 24 hours per day offering an easy and complete medical service from the diagnosis to sale of medicines.

Another innovative solution was a technology able to approve or refuse insurance contracts based on an automatic eligibility review. This new technological system uses AI to automatically assess and, when needed, accept policy applications across a wide range of products using screening criteria such as pre-existing conditions and medical history, as well as many other terms and conditions. The system helps sale consultants on saving time in reviewing insurance subscription requests and uses natural language processing (NLP) to provide sale consultants with real-time responses to underwriting queries.

Finally, a more efficient process was realized for scoping and settling roof and property-related claims. This innovative solution is combined by a patented technology based on building-3d-model via smartphone camera with on-site inspection activity to produce a highly accurate estimate of roof and property damage saving up to 50% of typical costs and several hours a day. The increased property information has enabled carriers to reduce the time needed to resolve claims, giving policyholders a superior experience.

3

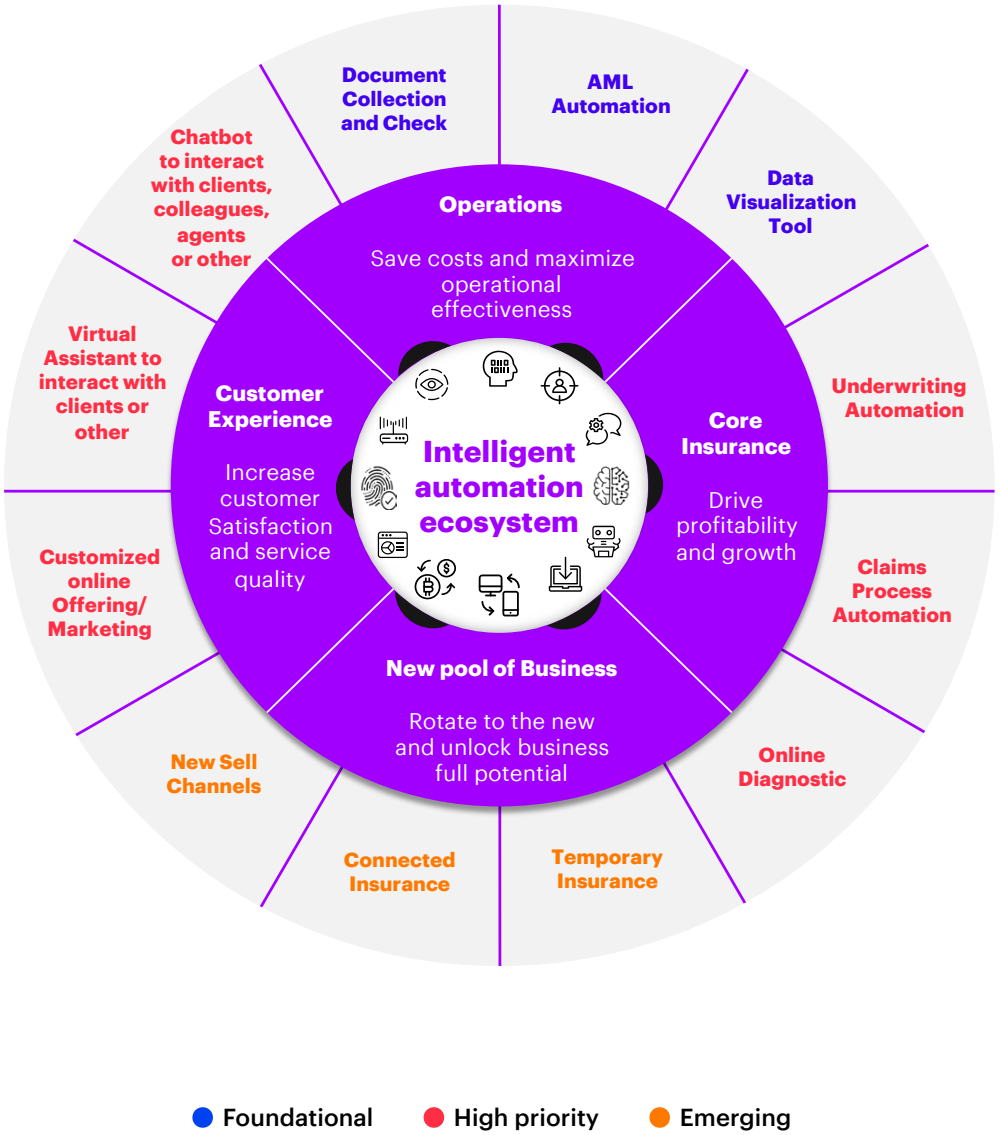
IA applied at insurance value chain and selected use cases

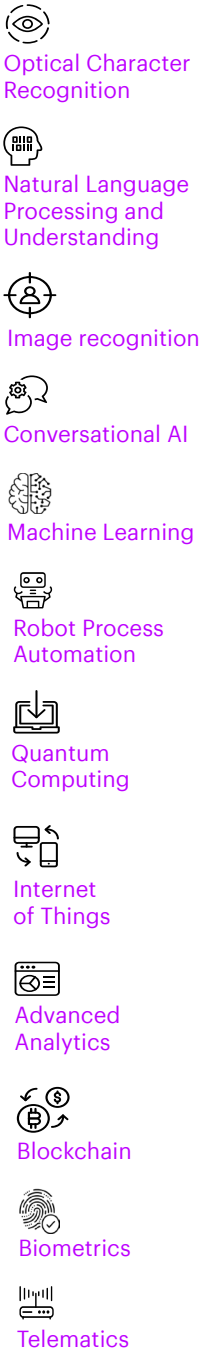
At a time when the industry is suffering from increasing competitiveness (banking, new incumbent, Insurtech), erosion of margins (ROE and decreasing profit), stagnation of the market (economic crisis, Covid-19), insurance companies can rely on the **Accelerating Automation Ecosystem to defend their competitive advantage and market share**. By scaling IA, companies can transform the costs structure by drastically reducing it, save FTEs for higher value-added activities, improve the level of service, reduce time-to-market, improve customer satisfaction, restructure critical processes to make them safer.

From our point of view, these benefits can be achieved by combining the right mix of technologies and applying them to the most suitable processes.

Chart 5

The Accelerating Automation Ecosystem as a set of technologies applied at insurance value chain





Based on the characteristics of the processes, the main areas of Intelligent Automation application along the insurance value chain can be identified in the following:

1. Operations.
2. Core Insurance.
3. New pool of Business.
4. Customer Experience.

Each of these areas intertwines with the insurance value chain, leading to processes with greater automation potential that will be followed up with selected cases as shown in the following table (each solution can be customized and applied also to different areas):

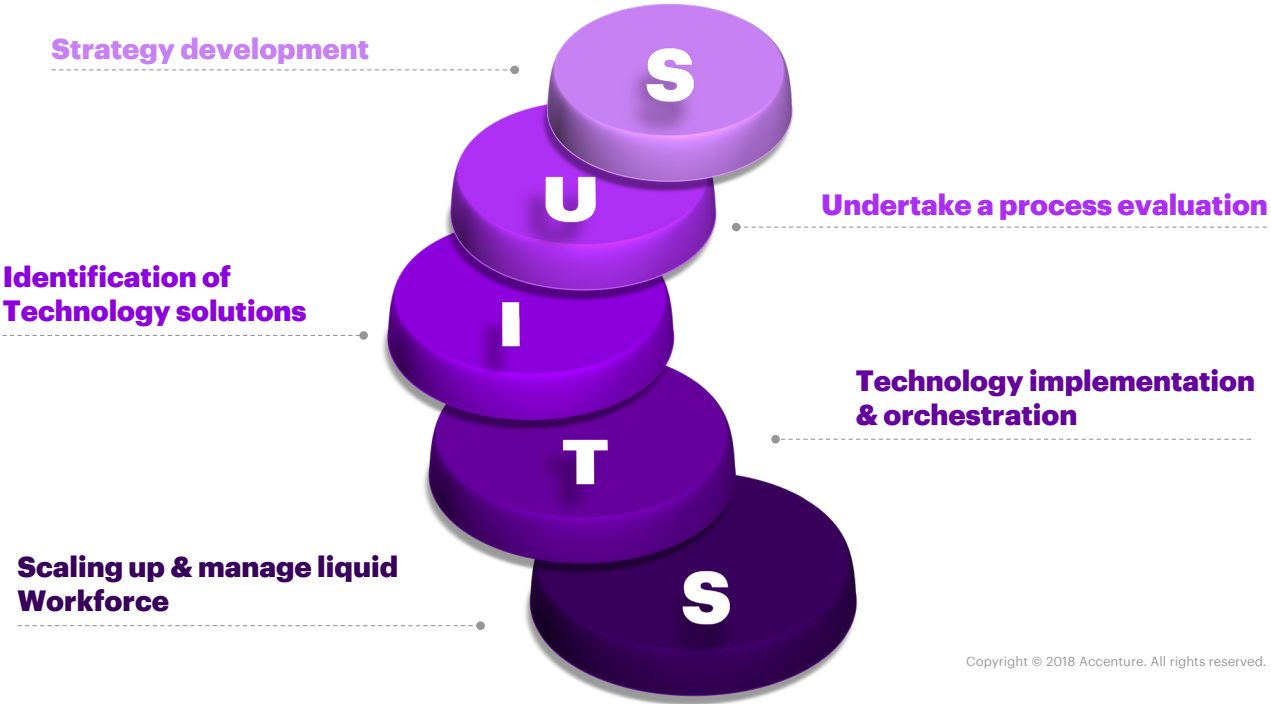
Title	Impact Areas	Technologies Involved	Description	Key Benefit
IA applied at claim processes	**Claims**	AI (NLP, NLU, OCR, Machine Learning)/ RPA	*Digitalization of the car accident form and automatic inbound data within the insurance company's application*	> **Time reduction up to 75%** > **Cost reduction** > **Improvement of accuracy**
Accurate definition of the customer's risk profile	**Underwriting**	AI (NLP, OCR)/ OCR/ Blockchain/ Telematics	*AI applied to analyze the documentation received by customers to define more accurately the risk profile and the respective premium*	> **Improvement in the definition of the risk profile and insurance premium pricing**
Underwriting Derogation	**Underwriting**	RPA/ Machine Learning	*Derogation taken in charge and managed almost in real time to improve the efficiency of the evaluation process*	> **Cost and time reduction** > **Improvement of accuracy** > **Process safety**
PAYD (Pay-As-You-Drive) or PAYL (Pay-As-You-Live)	**P&C**	IoT and Telematics/ AI/ Blockchain/ Advance Analytics	*Accelerating Automation Ecosystem used to unlock value outside of the insurance value chain. Technologies used to offer new products to the customers*	> **Customization of the product offering**
Virtual Agent	**Customer Operations**	AI (NLU, NLP, Speech to Text)	*Virtual Agent powered by AI used to provide answers to clients' general questions*	> **Improvement in customer service (availability 24/7)** > **Costs reduction** > **Improvement of service quality**
Procurement – From vendor qualification to project proposition approval	**Operations**	AI (OCR)/ RPA	*Extraction of information and documents uploading for vendor's qualification*	> **90% of time execution reduction** > **130 automated daily control for every vendor**
Regulatory compliance	**Compliance**	AI/ RPA	*Virtual workforce to automatically carry out activities such as customer due diligence, monitoring of money laundering transactions and high-risk customers*	> **Compliance with the regulation** > **Improved time to market**

4
How accelerate the automation with the “suits” model

The approach to achieve a technological transformation and apply Intelligent Automation solutions is not standardized but should be tailored to the needs of the individual company, considering the type of customer portfolio and the market in which it operates.

Chart 6

The Accelerating Automation Ecosystem as a set of technologies applied at insurance value chain



Accenture's "SUITS" model supports insurance companies in the Intelligent Automation journey, from strategic definition to scalability, ensuring the achievement of the objectives and maximizing the benefits of the company. Accelerating IA implies a journey that, to be successful, should follow 5 main pillars:

1. Strategy development

The starting point of the "SUITS" approach consists in defining the strategic business area in which to apply IA solutions. To do so, Accenture leverage on the following KPIs cluster:

- Analysis of company starting point and technological context (e.g. number of artificial intelligence projects already implemented, number of resources with skill on IA, IA architecture and software already in place at the company, data aggregation level).

- Cost baseline analysis (e.g. back office FTEs/ total FTEs, claim settlement costs/ total claim costs).
- Customer portfolio analysis (e.g. external vs internal market share, non-life vs life business penetration, online vs independent agent channels performance).

The above KPIs, market positioning, allocated budget and time constraints, are the key element to identify the most strategic business area to accelerate the Intelligent Automation adoption.

2. Undertake a process evaluation

Selection of the strategic business areas should be performed through deep dive their processes leveraging on IA trained tools. This is the preliminary step to find out the best processes in which to use the automation and achieve substantial benefits like increase in revenues, costs' reduction, increase in customer satisfaction, prompt compliance with regulations and increase time to market. Based on IA defined strategy and on key identified business area for IA adoption, the selection process that suits for the automation is finalized leveraging on **Intelligent Automation Index**, that will be calculated through the combination of 10 different drivers (e.g. accuracy, end-to-end cycle time, number of IT system involved) belonging to 4 specific areas (e.g. economic potential, complexity level).

The **Prioritization Matrix** help both to prioritize process and identify, if applicable, key action to be taken before automation (e.g. process restructuring). IA Roadmap will be defined to maximize benefits from priority process Automation.

3. Identification of technology solution and approach

Once selected the business areas and the processes in which to invest, insurance companies should select the most suitable technologies to maximize the IA benefits. After the technology's selection, they should choose the most adequate vendors. In this process it is essential to adopt a "neutral" approach, focusing on the cost benefit analysis. Accenture, to identify the technologies uses:

- conducts a detailed technology assessment on the company systems impacted by the automation.
- defines the key elements for the IA infrastructure.
- design the guidelines to select the most suitable IA software for the identified solutions (open source vs licensing, managed services vs as-a-service, cloud vs on premise).

4. Technology implementation and orchestration

Insurance companies should adopt an approach that enables them to implement selected technologies and orchestrate the most suitable IA solutions available on the market to unleash their full power and adapt the right technology to the processes to be automated. The structure proposed by Accenture consists in:

- Engaging all the stakeholders involved, both internal and external, managing

their interests in the solution.

- Collecting the functional and technical requirements to design the solution and the architecture.
- Combining the different technologies that make up the solution based on the specific characteristics collected (e.g. type of document, type of data).
- Implementing the tool and the rules to orchestrate the different technologies.
- Monitoring the solutions assuring its full potential operation.

The peculiarity of AI solutions is that allow to integrate the most suitable IA solutions available on the market (e.g. NLP, NLU, OCR, RPA) without impacts on the IT company systems.

5. Scaling up and manage liquid workforce

In order to leverage IA ecosystem and to obtain the greatest possible benefits, the technological ecosystem must be able to be used by the insurance company based on the previously defined strategy by exploiting its full potential and scaling up. To optimize the ecosystem created it is possible for example to:

- Make synergies between different processes (e.g. reuse parts of codes already developed).
- Fully use the licenses capacity (e.g. use the same license for several processes).
- Fully use the Virtual Machines capacity (e.g. use the same Virtual Machine).
- Redesign the workforce structure.

The last point is strategic: the adoption of an IA ecosystem needs to be accompanied by the understanding of the new skills and competences needed. New roles will be covered and therefore it is necessary to draw in a timely manner the features of the new work force. In order to take full advantage of the capabilities of the work force, a new a training path is needed, and new types of teams will be created, integrating IA technologies (like robots), IT strategy and business capabilities in the same team.

5
Closing remarks

The insurance sector is facing new challenges, both endogenous like the arising of new competitors and the decline in insurance premium growth, and exogenous like the Covid-19 pandemic. To come out winners, the insurance companies should accelerate the implementation of Intelligent Automation solutions now more reliable and low-cost. In a medium-sized insurance company[7] the IA adoption could bring to:

- An improvement of the combined ratio[8] up to 10 pt.
- An increase up to 6% of revenues (~ € 60Mln), thanks to the improvement in the effectiveness of selling channels and to the widening of products offered.
- A reduction in operating expenses from a minimum of 10% (~ € 10Mln) to a maximum of 30% (~ € 30Mln) thanks to the increase in efficiency.
- A reduction in the claims incurred and costs up to 5% (~ € 25Mln).
- An increase in accuracy, customer & employees' satisfaction, remote working enablement and in minimization of process handling time.

The solutions once considered pioneering are now a "must have" and their orchestration within IA ecosystem represent a key success element. The "SUITS" Accenture's model can help companies in their journey through the scaling up of Intelligent Automation solutions such as Conversational AI, Underwriting Automation and Virtual Agent.

7-For a medium-sized insurance company that reports approximately €1 billion
8-Is the ratio between overhead expenses and claims costs on premium income

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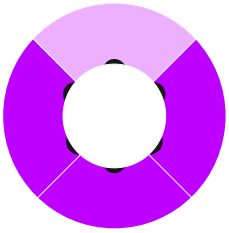
Use Cases Attachments

1. Operations. Procurement - From vendor qualification to project proposition approval



Each vendor that would like to start a collaboration with a Company as supplier of products or services, must submit to the Company's dedicated team specific documents that have to be controlled. Once uploaded all the documentation, the suppliers have to update it periodically. Moreover, when the suppliers would like to start some projects with the Company, they will upload in the same tool a Statement of Work (SoW).

Whole process was automatized[9] by a mix of IA technologies:

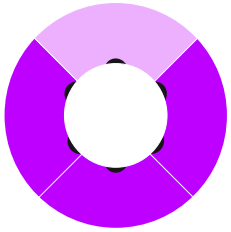
- **RPA** to verify weekly if the suppliers have uploaded into the tool all the documents required and:

  - If not, to send reminder e-mails to ask for the missing ones.

  - If yes, to verify if the documents are valid (since they have an expiration date).

- **OCR** and **RPA** to extract the information from the documents once uploaded and perform some controls on their correctness.

The challenge was to manage a high volume of vendors to be qualified, and therefore high volumes of documents to be checked and a huge numbers of reminder e-mails to be sent during the process. Thanks to this automation most part of the checks related to the vendor documents is performed **during the night**. Moreover, for the vendors that do not need to upload documents, the qualification is performed nearly real time, and so it is the SoWs check. The automation allows to perform **130 controls for every vendor**, while, in the meantime, **reducing the execution time** for the vendor qualification **of 90%**.



2. Operations. Compliance

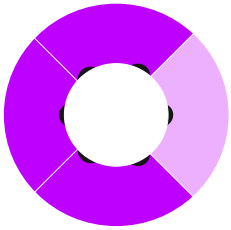
The regulatory framework for insurance is very complex and constantly updated, which means that the sector periodically needs to review its processes to adapt to new developments. The IA Ecosystem can support insurance companies in defining new processes in the compliance area

9-Solution already implemented by Accenture strategy and consulting

with the aim of reducing the costs necessary to ensure compliance with the regulations in sales activities and make time to market more efficient. Compliance departments can set up a virtual workforce that allows them to automatically carry out activities such as customer **due diligence**, monitoring of **money laundering** transactions and **high-risk customers**, identifying suspect behaviors of customers. An interesting application is using **IA** to support compliance offices to automate:

- Anti-Money Laundering (AML) control activities on policy holders related to life insurance policies.
- Customer Due Diligence (CDD) processes, during the client on boarding phase.
- On-Going Monitoring (OGM) as ex post analysis of actual clients based on alert indicators.

Thanks to this automation, the speed of the controls has increased by 70% with the possibility of using the time saved for more accurate checks (e.g. more checks). In addition, this solution can lead to savings of up to 70% of FTEs employed on compliance control and verification activities in compliance with transparency regulations (e.g. European IDD) and data processing (e.g. GDPR).



3. Claims. IA applied at claim processes

End to end claims management

Thanks to the application of an IA solution, it is possible not only to **digitize the car accident form** but also to simplify and automate the end-to-end claim management process[10]:

- **Conversational AI** to assist the customer in the perfect completion of the digital form (to implement this part it is not necessary for the Company to adopt its own application, but it is sufficient to choose any messaging application already available).
- **RPA** to retrieve all the policy data so the client can complete all the required car accident form fields.
- **OCR** to transform in data all documents uploaded by the counterparty for the claim handling (e.g. request for damages, testimony, police report).
- **NLU** to understand data extracted by the OCR suggesting to the claimant the accident dynamics and responsibility.
- **Image Damage Recognition** to take photos of the crashed vehicle in order to provide a damage estimation (e.g. in the case of low complexity it may totally replace the claim expert analysis).
- **Telematics** "intelligent data analysis" (e.g. black box) based on machine learning

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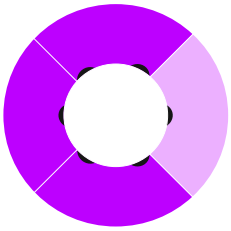
algorithms to highlights the presence of conflicting information in the complaint hiding a fraud.

- **Blockchain**, biometrics or traditional One-time password to provide a digital signature of the form directly from his/ her smartphone and immediately available to all the parties.

Automated inbound claims handling through document recognition and data checking

The Intelligent Automation applied at insurance claim document activities could automatically enter all the relevant data into the company's applications[10], thus obtaining a reduction in costs and an increase in the accuracy of manual and repetitive activities and overall a saving of time to handle each case and verify data contained to highlight possible fraudulent path:

- **OCR** to transform documents (e.g. PDF, mail) in digital data necessary to be processed by an artificial intelligence algorithm.
- **Machine Learning** algorithm trained to manage data recognition and extraction of entity (e.g. license plate, legal representative) from digital documents.
- **AI "Orchestrator" and RPA** solution to retrieve the documents and processes them with the correct Machine Learning algorithm for that specific document. This solution also allows to trigger the robot giving to RPA the data required to perform the activity.



4. Underwriting. IA for an accurate definition of the customer's risk profile based on document assessment

Intelligent Automation could be applied at the documentation analysis process (e.g. medical, engineers, lawyer, experts) to increase the **accurate definition of the risk profile** and the related premium for the different types of policies, ensuring its reliability even in case of increasing volumes of policies.

This solution[11] results from the orchestration of the following technologies:

- **OCR** to digitize and extract data contained in input documents.
- **NLP** to understand and link the key data extracted from the documents in order to draw up a risk profile of the policyholder.

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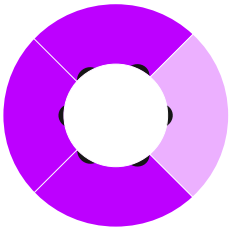
- **AI + RPA** algorithm to evaluate the risk factors and give the proposal an overall risk score and the premium.

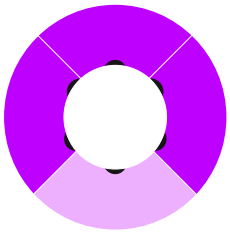


5.Underwriting. Derogation

Some **Insurance Companies has automated the underwriting derogation** process with a mix of IA technologies[11]:

- **RPA** to take charge in "near-real time" of the discount waiver requested and to collect all agency and customer data.
- **Decision-making** algorithm to give the derogation an overall score in order to be able to evaluate automatically the acceptance or rejection.
- **Machine learning** to continuously implement the algorithm.

The solution is designed to respond to business needs as cost/ time reduction in the management of high volumes of annual requests, accuracy improvement in the assessment and application of the derogations and finally process securitization in order to allow the company to reduce adverse phenomena (e.g. agent's self-exemption).



6. Payd and Payl

Many companies are adopting Intelligent Automation solutions, or rather building an Accelerating Automation Ecosystem, in order to offer new innovative products leveraging the technological potential to perform correct and efficient processing of collected data that enable to increase customization and to provide customers the best possible service.

To achieve these goals, insurance companies are moving closer to solutions that allow them to meet customers' needs in an increasingly personalized way, offering for example **Pay-As-You-Drive** (PAYD) or Pay-How-You-Drive (PHYD) and Manage-How-You-Drive (MHYD) solutions. The concept can be similarly applied to health insurance with Pay-As-You-Live (PAYL) policies. All these solutions are part of the so-called "**Usage-based insurance**" (UBI) developed through the combination and orchestration of several technologies:

- **IoT and Telematics** to collect data from different sources (e.g. data from vehicle,

11-Solution already implemented by Accenture strategy and consulting

including speed and time-of-day information, historic riskiness of the road, driving actions in addition to distance or time travelled) and to provide an immediate feedback loop to the driver by changing the cost of insurance dynamically with a change of risk.

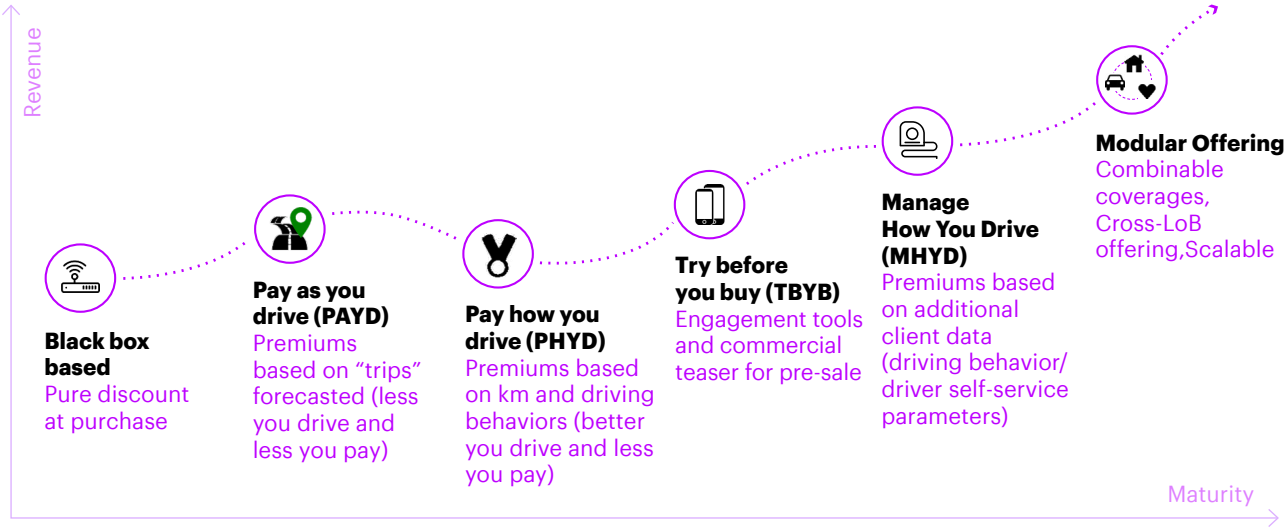
- **Advance Analytics** to elaborate the data collected more accurately in order to determine the price of insurance policies, assess claims and recreate the dynamics of accidents.
- **Blockchain** to enable the notarization of the information collected by IoT devices, guaranteeing the certainty of the data collected (e.g. vehicle speed, braking duration) and at the same time privacy (e.g. encrypted data, visible only to the insurance company). Moreover, this system makes it possible to automatically collect data (because of the use of smart contracts) from various external sources (e.g. weather, road traffic), without sharing the insured's private information with the various parties involved in the process.

In the motor insurance case, a typical example of UBI (Unione di Banche Italiana) application as depicted in the graph below, the data that the company collects about the driving **habits of the clients**, concurs in the calculation of the related insurance premiums. Moreover, these policies can offer peculiar services to customers, for example the opportunity to stop the coverage for a period in which the vehicle will not be used and proportionally extending the dura-

Chart 7

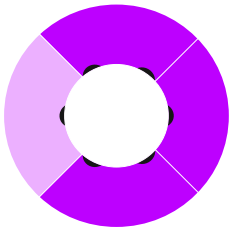
Insurance products are evolving towards personalized models based on collected data – Motor journey

From traditional to highly customized, modular, and telematics-based solutions, Connected Insurance App will pose a solid baseline towards an advanced cross-LoB insurance personalized telematics offering



tion of the policy, making the service very **flexible**. Forty-two percent of insurance executives polled for Accenture's Technology Vision report say that UBI has good potential, and that they are planning to enter the market soon. Another 28 percent say they are already in the market, while 24 percent are considering it. Five percent see some potential but are not ready yet to enter the market.

In order to be able to offer customers such type of insurance products, the companies need to be able to collect in an efficient way the clients' data about their driving habits, to elaborate them effectively and to draw the appropriate conclusions refining the premiums pricing.



7. Customer Operations. Automating customer service using an artificial intelligence-driven virtual agent

Insurance companies that want potential and improved customer interaction can adopt a Virtual Assistant powered by advanced Intelligent Automation[12] system built on the following technology:

- **Natural language processing and understanding** to elaborate and understand free text, including dialect, colloquial language, and misspellings, making it possible for the customer to use natural language.
- **Speech to text** to convert voice audio into text. This can be done either in real-time, streaming the voice and transcribing on the go, or by processing batches of pre-recorded audio offline such as call recordings.
- **Text to speech** to synthesize spoken words from written text.

The goal of this solution is **to provide answers** to clients' general questions and **to guide them in** the use of the online portal or site. In addition, it increases the customer service availability to 24/7 and it improves the scalability of this service. One of the greatest advantages of this solution is that the improvement in quality is accompanied by a significant costs' reduction.

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