omni:us

AI for insurance executives.

What matters most as an insurer in today's digital landscape.

Find more resources at **omnius.com**

White Paper

omni:us

Contents

AI for Insurance Executives

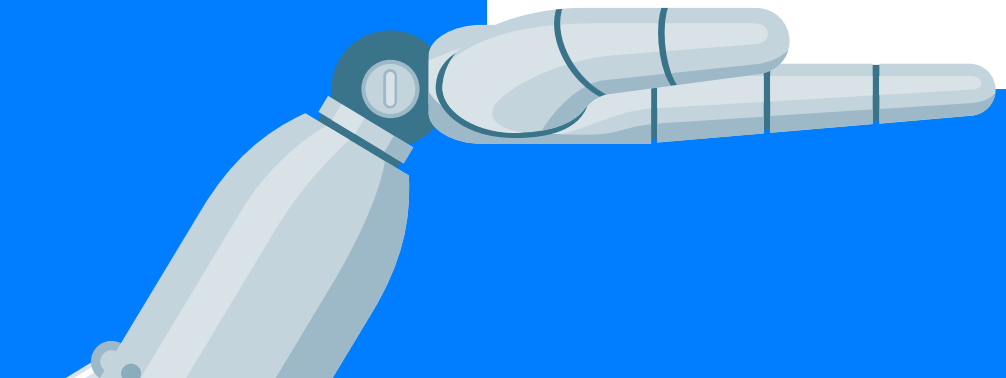
omni:us

2 Introduction

Artificial Intelligence, or **AI**, is arguably the most buzzed-about technological advancement in decades. Its future impact on mankind has been compared to that of the World Wide Web, and indeed foreseen to go far beyond. It is suggested that self-learning technology will usher in a fourth industrial revolution, changing the workplace forever.

There can be no question that artificial intelligence represents a global paradigm shift that will have far-reaching consequence on every aspect of society.

Recent advances in the field have led to business applicability rising dramatically, turning the monolithic heads of industry, and putting AI firmly in the spotlight for executives, entrepreneurs, and investors alike.



Insurance is traditional

In the era of digital transformation, insurance is a sector considered particularly resistant to change, and while it is slowly coming around, the challenges of ground-up innovation are many. In sprawling enterprises made technologically stagnant by legacy systems, managers seek to effect change in a cautious, incremental manner, building to significant transformation over time . Financially and operatively feasible, this approach benefits from the 'plug and play' model of utilizing services, which boasts on-demand expertise and seamless integration to existing architectures.

Contemporary surveys have pointed to AI being the focus of decision-makers in the field. At a recent insurance conference, executives were asked which technology they saw as having the greatest impact on claims within the next 5 years. The answer was a considerable plurality, almost half those surveyed, for machine learning & AI . It is a game-changer thought to be 'the enabler for disruption' , yet it lacks widespread adoption, especially in insurance.

As its perceived superiority over older methods of digesting information is realized, business leaders are being forced to consider the advantages AI offers. And while AI-powered products are not yet perfect solutions – indeed, they are often prone to error – their potential for accuracy and efficiency is simply unprecedented. This paper will attempt to explain this potential, particularly regarding claims management.

Why read this paper?

Well, we'll answer that with two more 'whys'. If you are curious as to why AI has seemingly become so prevalent and such a hot topic in recent years, check out Part II. If you want to learn why this could be valuable to you as an insurer, jump to Part III.

This paper explores AI's recent developments and how they can tackle specific pain points within the insurance industry. We aim to enlighten the reader in an impartial manner, and in that spirit, we refer to tertiary studies, reports, and interviews that support the overarching theme.

2 Why is AI taking off?

Computing power has grown

In a nutshell, computing (or processing) power refers to how many calculations a processor can perform per second. The oft-quoted Moore's law, attributed to the co-founder of Intel, ruled that processing power doubles approximately every two years, as tiny transistors become even tinier and their silicon housing more densely packed. Though this 'law' is more of a guideline, it has held true over the previous half-century, with smartphones today more powerful than the room-sized computers of the early 1970s.

The GPU workhorse

Graphics Processing Units (CPU) were originally used for generating computer displays. Once their strength in executing numerous operations simultaneously was realized (as opposed to its more sequential older brother, the CPU), the computing power of the average processer began to grow exponentially.

This rapid evolution in GPU technology largely fostered the advancements in AI in recent years. Large scale, iterative programs utilizing machine learning methods rely on the parallel processing capabilities of the modern GPU.

The continuous growth in computing power over the years, alongside other advancements, has inevitably led to more data creation in general – smartphone photographs, instant messages, device metadata. This explosion of data would prove integral to the rise of AI.

Big data … it's big

The term 'big data' refers to a hefty volume of heterogeneous data stored in varying degrees of structure and complexity, and the methods used to understand this data. The sheer variety of encoded information nowadays means older data processing software cannot always efficiently handle and store them. Such rapid growth will heavily influence data-heavy industries, such as finance and insurance.

A prediction by the IDC (International Data Corporation) has suggested that by 2025, the global data sphere will be producing a whopping 163 zettabytes per annum (for scale, 1 zettabyte = 1 trillion gigabytes). When compared to the present day, this boom represents a tenfold increase in data generation. An increase this significant would reveal weak points in information-reliant organizations, forcing the hands of innovation as data extraction becomes more cumbersome and costly.

Machine Learning

Hand in hand with this, however, is the reliance of machine learning techniques on vast tracts of data. Self-learning algorithms called neural networks are iterative programs which are given the desired output prior to execution. It must then 'learn' how to reach this output, and **data is vital** to this learning – **the more data, the better.**

Initially these programs are very inaccurate – but after each loop of the algorithm, the program responds by adjusting its own parameters in order to arrive closer to the desired result in the next. As more data is fed into the system, its accuracy levels rise. Thus, as more data is created, the potential for more powerful artificial intelligence rises.

RPA vs AI

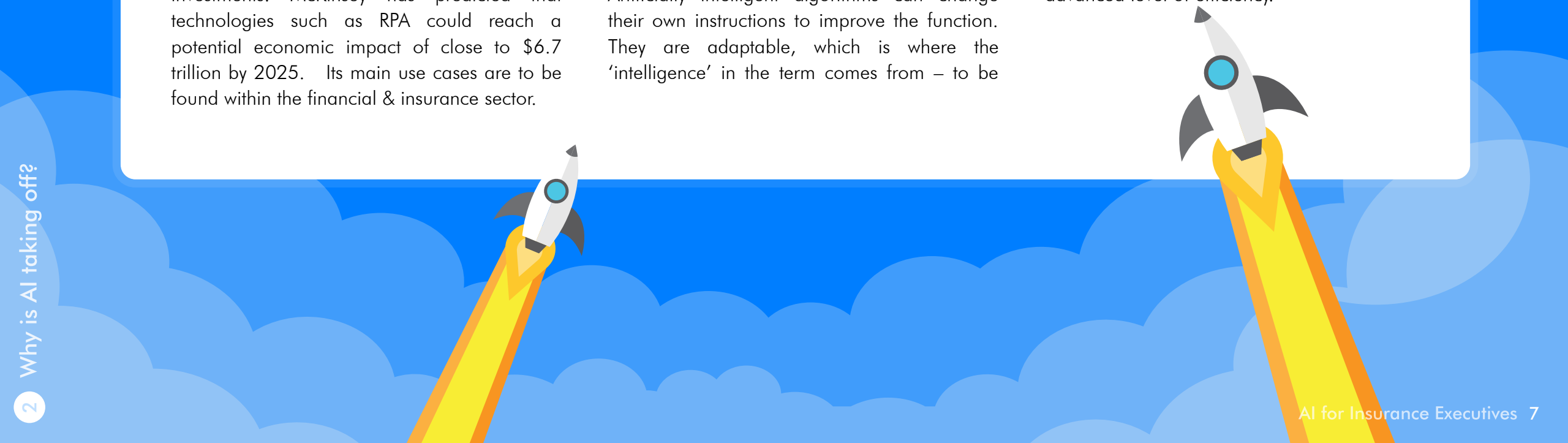
Robotic Process Automation (RPA), a set of interlinked technologies which automate tasks with software and bots, has changed the landscape of manual work. RPA's value to back-end processes is comprehensive, tackling various repetitive tasks which would otherwise pose significant cost.

Generally, RPA solutions slot in over existing IT infrastructures and don't require major initial investments. McKinsey has predicted that technologies such as RPA could reach a potential economic impact of close to $6.7 trillion by 2025. Its main use cases are to be found within the financial & insurance sector.

Where RPA falls short, however, is in cognitive processing. It is limited to its initial configuration and the task(s) it has been hard-coded to complete. These are 'rule-based systems', which are limited by design. RPA technology cannot analyze information from data the way a human might do… it lacks the intelligence, the ability to learn. This is where AI comes into play.

Artificially intelligent algorithms can change their own instructions to improve the function. They are adaptable, which is where the 'intelligence' in the term comes from – to be truly intelligent, like sentient beings, a machine must be adaptive, functioning beyond the constraints of traditional predefined, hard code.

With such technology, and by working at the sweet spot somewhere between RPA, AI, and the still-necessary human eye, businesses can achieve a sophisticated solution resulting in faster problem-solving outcomes and a more advanced level of efficiency.



RPA + AI

Robotic Process Automation helps overcome existing limitations.

Artificial Intelligence works with those limitations to convert them into relevant output.

RPA	AI
Non-invasively **mimics user activity**	**Mimics human thought processes** through vision, language & pattern detection
Can process **structured & some semi-structured documents**	Can process **structured, semi-structured & unstructured documents**
Automation is **rule-based**	Learns & adapts over time based on cumulatively collected data

3 Why look into AI?

Customer experience

Increase customer satisfaction & grow retention.

Processing effectiveness

Improve claim handling accuracy & lower incidence of disputes & litigation.

Operational efficiency

Reduce turnaround time, claim expenses & improve productivity.

Innovation leadership

Create a competitive edge & lead the digital insurance transformation.

Insurance companies that plan to navigate the deep waters of AI are acutely aware of their current back-end shortcomings. Failing to keep up with the novel technologies introduced to the industry will cost in the long run. Conversely, those who prioritize innovation will lead the pack not just in technical mastery but in customer retention. The following section looks at some common insurance business problems and how AI fits in.

AI-powered solutions

An opportunity for those in the know

There is a universal aspiration among organizations to increase productivity while reducing costs. When it comes to artificial intelligence, however, decision makers are not yet informed.

Almost 40% of practitioners who have not yet invested in AI don't know what AI can be used for in their business, according to Deloitte.

Data-driven businesses and enterprises that have incorporated automation technology into their workflows have realized significant improvements in productivity and efficiency. With AI models that can learn to identify and understand the layout and necessary contents of the documents, they can carry out the formerly manual task of classifying and clustering files.

With these systems' ability to automate and carry out time-intensive tasks that require manpower, these tasks are now absolved, leaving the skilled workers to focus on other duties. This signifies a direct increase in productivity, without incurring significant extra costs.

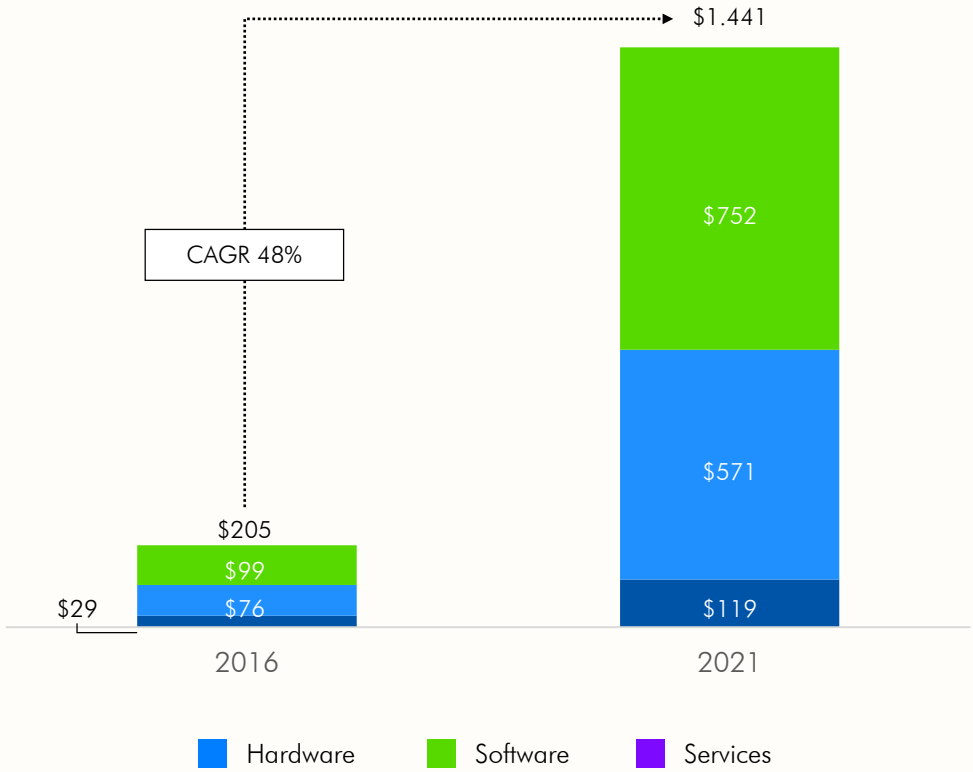
Still, the insurance industry has yet to embrace AI as a way of optimizing processes.

According to an O'Reilly report, **only 1.33% of insurance companies in the US are investing in AI.**

However, this is soon to change. "Adoption of AI will increase significantly as buyers seek to unlock value from data and avoid losing competitive advantage", according to an MMC report. **75% of executives say AI will be "actively implemented" to some degree in their organizations within three years.** Interest is rising drastically, and the money doesn't lie: insurers are expected to pour hundreds of millions into cognitive intelligence over the coming couple of years.

Insurer spending on cognitive intelligence expected to soar

Global Insurance IT spending on cognitive/AI technologies ($m)



Source: Deloitte

Areas where AI fits in

Claims Management

Tens of thousands of claims are filed on a daily basis, leading to extensive backlogs and towering workloads for claims adjusters. A lot of this work is arbitrary fact-checking and straightforward cross-referencing of information.

It is to expedite these processes that AI is being utilized. **The triage step is well suited to powerful AI backed up by massive practice data banks.**

According to Max Yankelevich, founder of WorkFusion:

"Most insurers use people to handle first notice of loss, basic investigation, and data entry. Machines monitoring humans as they perform their computerized tasks can actually develop a cognitive understanding of how to process documents, automating 50 to 100 percent of this work in some instances. The impact is very real."

For automotive claims, for example, an AI system viewing images of vehicle damage can make rapid assessments based on the severity of damage, speeding up the whole procedure. This is exactly how the UK insurer Ageas has been expediting its back-end process, with highly positive results.

Another early adopter of this technology is Zurich Group, where cognitive computing programs are being "used to review medical reports for evaluating personal injury claims—reducing review time of 10-100-page documents from 58 minutes all the way down to five seconds." COO Kristof Terryn said that this project would free up nearly 40,000 hours of claim handler time and save $5 million annually.

The argument is that once these monotonous and arbitrary tasks are removed from the handlers' desks, they can focus their energies on more emotionally and intellectually demanding jobs. For Zurich this means that "process automation and cognitive computing will bring benefits in productivity. It will also allow us to reallocate work hours to much more value-added tasks." These are tasks that require a more human touch – interacting directly with customers at what is often a distressing time, or focusing on claims selected by the system as likely being incorrect or false. Such incorrect claims will always require human intervention for validation or rejection.

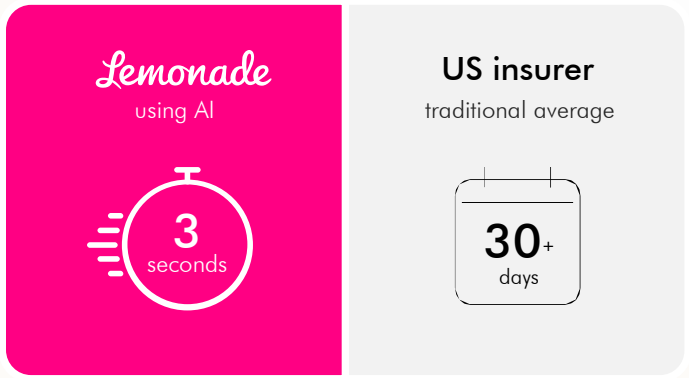
Areas where AI fits in

Time-to-settle

According to a survey conducted by J.D. Power, time-to-settle is high among the top performance metrics insurance customers are most concerned with. Their top-ranking insurer clocked in a claims settlement record time of 11 days. On the other hand, an AI methodology used by the insurer, Lemonade, holds the record for settling a claim within 3 seconds.

Of course, not all claim settlements can be carried out this quickly. However, even a claims settlement period of 11 days is not an adequate timeframe for most insurers. **Insurance companies already utilizing AI have the upper hand in retaining old customers, and acquiring new ones, with their comparably quicker and fuss-free manners of claims settlement.** By adopting AI technologies for your company's workflow process, you will be able to keep up with the pace of technology to attain maximum efficiency possible, leading to satisfied customers who remain loyal to your business.

AI takes the lead in claim settling times
Creating an insurance experience that is fast & hassle free.



Source: Lemonade

Areas where AI fits in

Data management

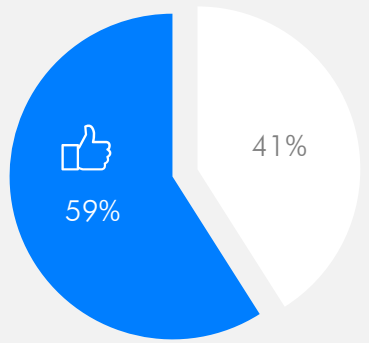
The main problem with big data is, as one might expect, sheer volume. Businesses have difficulty establishing links between documents of different types. To efficiently search a contemporary financial database can become a major undertaking. Data storage is tricky and increasingly outsourced where possible.

AI can identify the data which is rarely (or never) used and recommend it to be archived – which uses slower, cheaper storage. This leaves the more efficient storage options open for use by data the business requires day-to-day.

With the ever-increasing amount of data, whole industries find themselves struggling to keep up.

Many businesses have looked to AI, which can automate these processes of managing, digitalizing, as well as, sieving through data to identify relevant information.

AI as an improvement for data management systems



59% of executives believe that the use of AI would improve the data management systems at their respective companies.

Source: Forbes

Areas where AI fits in

Customers drowning in paper

When making an insurance claim today, there's a lot of supplementary material needed for the customer to provide, for the adjuster to examine.

This could mean an incident report, a photograph, an invoice... it depends on the type of claim being made. When submitting claims, already a potentially distressing time, customers can be overwhelmed with the amount of paperwork required. This will impact both your customer as well as your business. There are bound to be mistakes made, documents erroneously sent in. This can further delay the process for both parties. With AI's help automating one of these processes, you attain the ability to correspond at a quicker pace with your customer, informing them promptly of any irregularities on their paperwork. This supports a more mutually satisfying customer-provider relationship.

As insurance services become readily available to people in new ways (instant messaging apps, chatbots), AI can also be a powerful tool for delivering relevant info practically instantaneously. For people looking to get a quick quote on recompense after a car collision, for example, an image of the damage sent over WhatsApp would yield a decent price estimate, supplied by a neural network (an AI system modeled after the human brain) consisting of potentially millions of car-crash images. A similar outlook could dominate the homeowners' insurance market, particularly in the case of fire or 'act of god' damages.

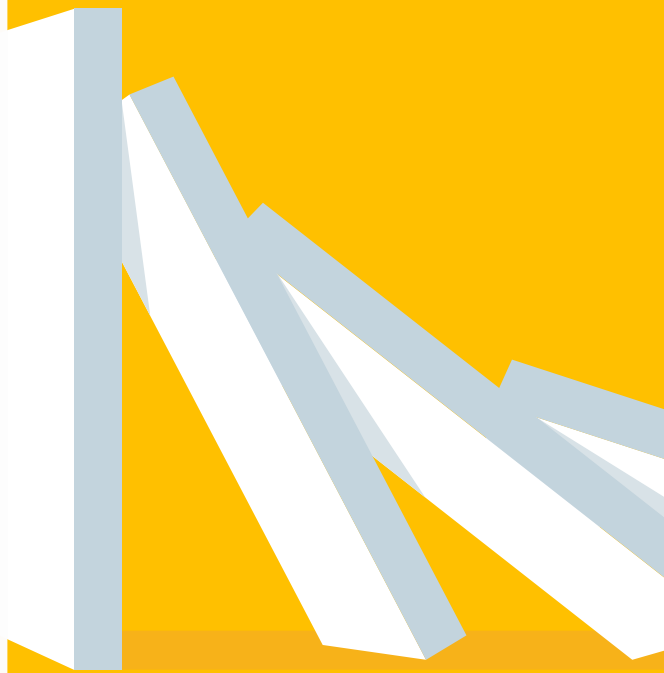
Areas where AI fits in

Fraudulent activities

Let's face it. Every insurer has had the misfortune of coming into contact with customers who try their hand at redeeming a claim that is not valid. With all of these claims being manually looked through and settled by actual people, it can be easy to glance over the fraudulent information sent in by a customer and end up settling a claim and processing a payout that could have been avoided.

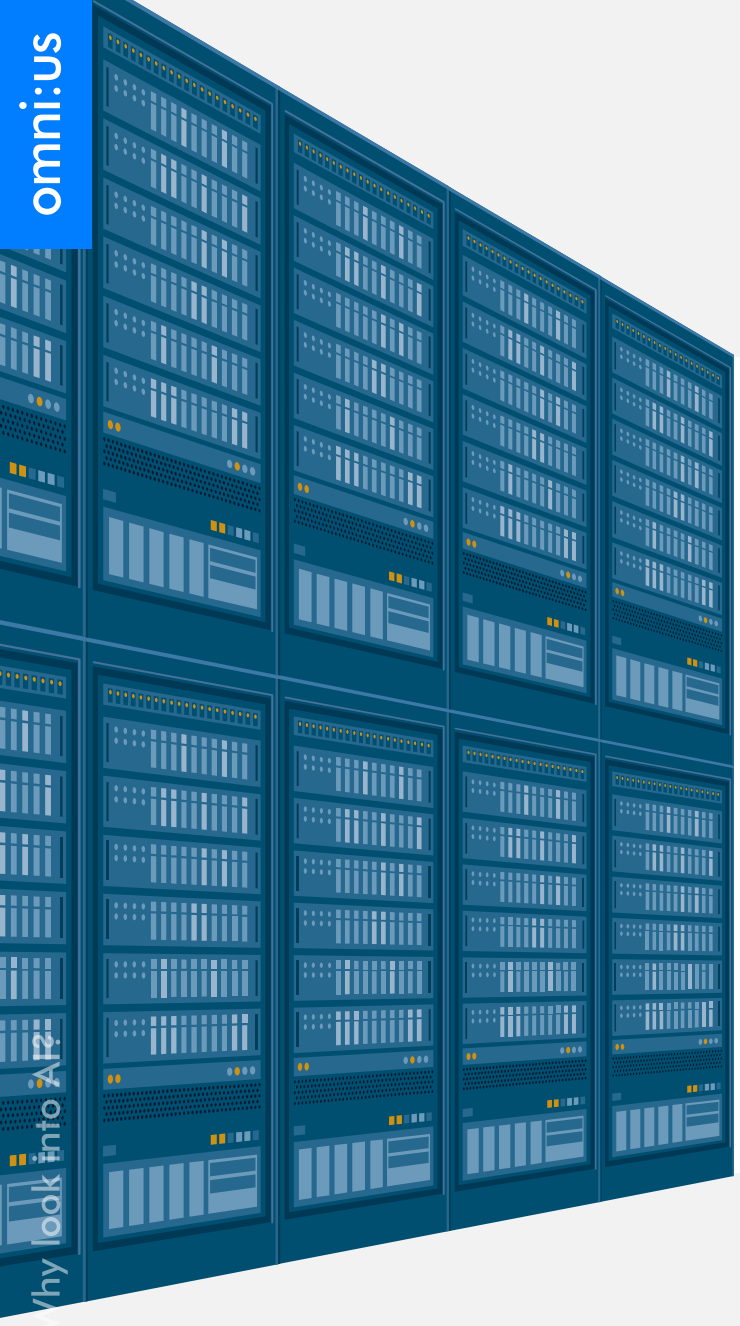
According to a recent McKinsey article, "A European insurance carrier significantly improved its fraud detection accuracy implementing an AI-based fraud detection system resulting in an **18 percent increase in fraud prevention** as well as productivity gains in fraud investigation."

AI can detect, to varying degrees, this misrepresentation of information, by carrying out tests to validate a claim. This process might involve cross-referencing public information against the metadata supplied by your claims documents, a job that might prove intensive and painstaking to a human, but not for an AI-powered web crawler trained in such a task.



Issues

On top of these business problems, there are other problems that have to be taken into consideration – namely, those that could possibly arise with the implementation of such technology. If done right, this would be as hassle-free and efficient as possible. This can often prove easier said than done, however.



Implementation period

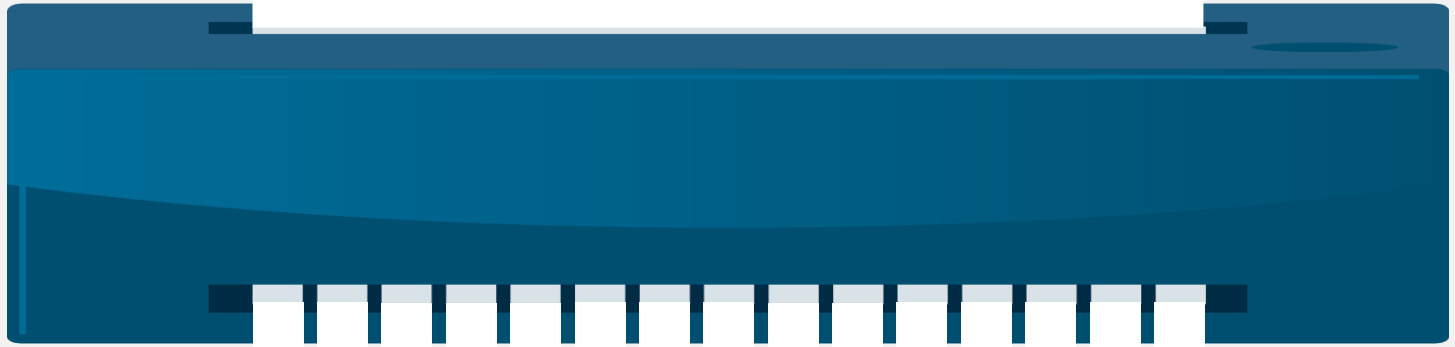
Automation technologies tend to involve a significant amount of time for implementation. A survey conducted by PwC revealed that enterprises do not always feel that they have received sufficient information about how long a time it takes to create the right foundation. The businesses polled felt that the investment and implementation was underestimated from the beginning. This is due to sprawling existing workplace IT infrastructures, requiring there to be various steps taken in order not to compromise them.

One example can be seen through the process of attaining a proof of concept (PoC). As opposed to the 4-6-week implementation period companies expect to attain it by, this process often requires 4-6 months instead.

Hence, when implementing automation technologies, businesses should consider the implementation timeframe, and to prudently agree upon and understand the time it could potentially require.

Inadequacy in security of current technology

The issue of security is also one to ponder. Another prediction by IDC has suggested that by 2025, 90% of all data will require security. This implies the need for further security measurements to be integrated with the data that organizations hold, something which applies especially to businesses dealing with insurance. Most of the documents have confidential client data, and therefore, huge care needs to be taken when implementing AI technology. Recent legislative changes like the EU's General Data Protection Regulation (GDPR) have only intensified the need for system-wide security measures.

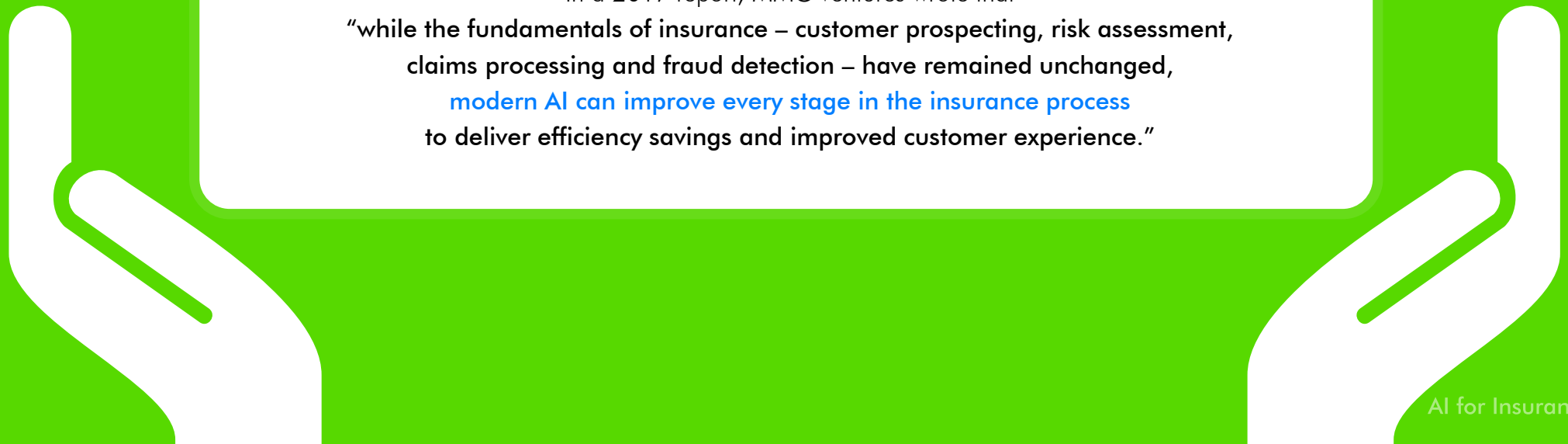


4 Conclusion

Insurtech has entered the lexicon. As a term it is self-explanatory – but the confluence of technology and insurance has not always been friendly. Insurance is an industry that has a reputation for being resistant to change, but as new technologies emerge that make the application of AI and cognitive computing a better overall financial decision, bosses have an increasingly tough time justifying its disuse.

Proliferating use cases and a significant increase in capital flowing into ventures has added fuel to the fire when it comes to insurance-related AI. Claims management, anti-fraud, data storage, these are all exciting business problems for AI to challenge, and a vibrant ecosystem is doing just that with enthusiasm.

In a 2017 report, MMC Ventures wrote that
"while the fundamentals of insurance – customer prospecting, risk assessment, claims processing and fraud detection – have remained unchanged, modern AI can improve every stage in the insurance process to deliver efficiency savings and improved customer experience."



omni:us

At omni:us,
we build products that enable insurers to lead the digital transformation.

Our claim automation products allow insurers to offer customer-centric services, boost claim settling times and reduce costs.

If you'd like to learn more about what we can offer you as a transformative force within your company, contact us at hello@omnius.com.

omni:us

References

1. Insurance Claims Innovation Survey 2017
2. Artificial intelligence: From mystery to mastery (Deloitte)
3. Disruptive technologies: Advances that will transform life, business, and the global economy (McKinsey)
4. The New Artificial Intelligence Market (O'Reilly)
5. The State of AI 2017 (MMC Ventures)
6. IDC 2018 Spending Report
7. Automation at scale is driving transformative change across insurance (McKinsey)
8. UK Insurer Ageas Uses Artificial Intelligence to Manage Motor Claims (Insurance Journal)
9. AI and Insurance: Are Claims Jobs in Danger? (Carrier Management)
10. Artificial Intelligence in Insurance – Three Trends That Matter (Tech Emergence)
11. Lemonade Blog
12. 10 Charts That Will Change Your Perspective Of Big Data's Growth (Forbes)
13. Claims in the digital age: How insurers can get started (McKinsey)
14. Successful implementation of RPA takes time (PwC)
15. Data Age 2025: The Evolution of Data to Life-Critical (IDC)

hello@omnius.com

Red Herring
Winner 2017