BAE SYSTEMS

The insurer in 2050

The role of the human in insurance's continued fight against financial crime

1950 to 2050: how will the insurer have evolved?

Executive summary

Step back to 1950 and insurance was driven by pen and paper, and face to face meetings. That's a world apart from today's connected world, where there is a wealth of insurance options available to consumers via a simple web search.

We can expect the insurance sector to become increasingly digital, with artificial intelligence (AI) becoming an important part of the insurance process - particularly when it comes to fighting financial crime.

This shift is reflected in the changing role of humans in the sector. A 2016 report from Deloitte[1] found that the UK had enjoyed a technology-driven shift from low-skill and routine to higher-skill non-routine roles.

More than 800,000 jobs were lost in 15 years – but nearly 3.5 million were created.

Insurers may not know exactly what the impact of fast-evolving technology will be on those working in the industry, but they must plan for it nonetheless.

As evidenced in BAE Systems' 2019 report[2] on how to future-proof insurance companies, we know how AI, robotics and data can be used to streamline processes, identify fraud and fight cybercrime.

But how do we ensure that the people at the centre of the industry – the workforce as well as the clientele – derive maximum benefit from these possibilities?

If we manage digital tools wisely, humans and machines will continue to work in harmony, producing something greater than the sum of its parts. And it could be that insurance proves the ideal environment for that optimum outcome.

Dennis Toomey
Global Director, Counter Fraud Analytics,
BAE Systems

[1] www2.deloitte.com/uk/en/pages/growth/articles/from-brawn-to-brains--the-impact-of-technology-on-jobs-in-the-u.html

[2] https://content.baesystems.com/future-proof-insurance

The current technology state of play

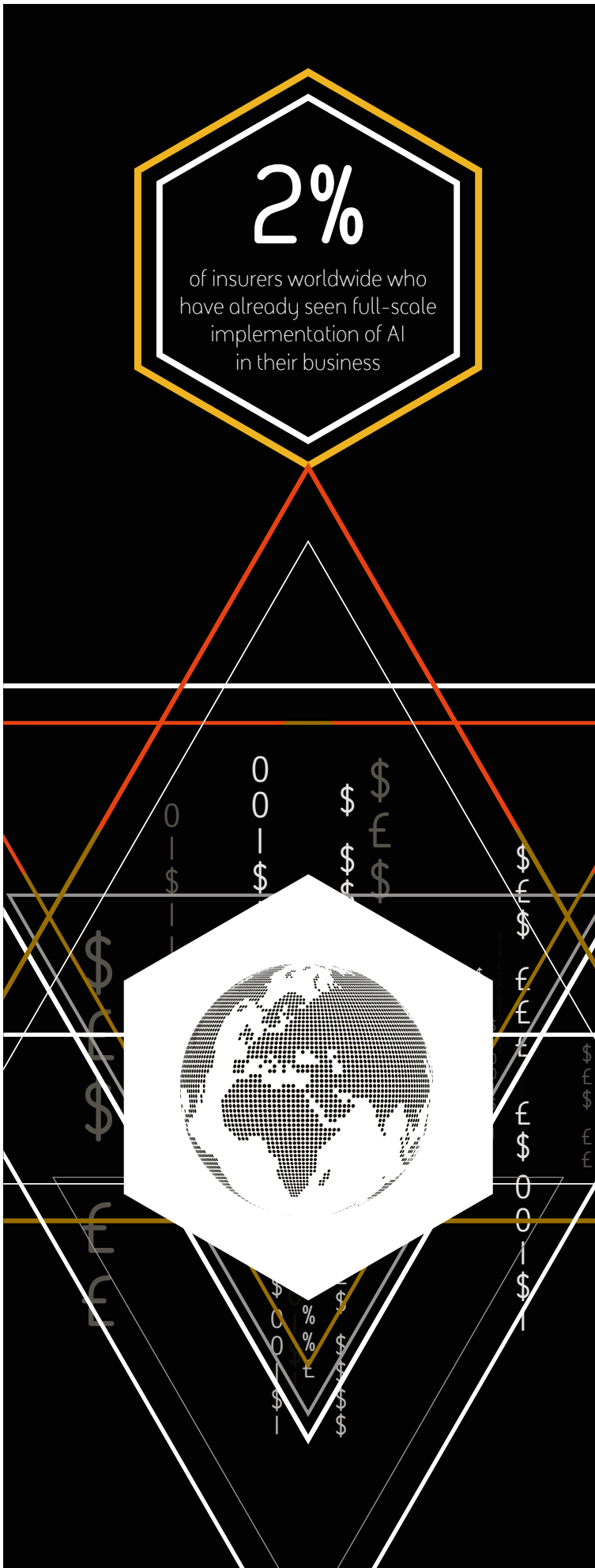
There's no doubt that the role of the human in insurance has changed since 1950. From helping underwriters tailor premiums to specific risk profiles, to flagging up patterns of fraud or absorbing volume queries from customers via chatbots, technology is already actively helping humans in the industry to improve processes and customer experience.

However, although the use of AI is starting to have an impact, insurance is not at the cutting edge in this space. Only 2 per cent of insurers worldwide have already seen full-scale implementation of AI in their business, revealed a 2018 Capgemini survey[3]. A further 34 per cent considered their AI use to be in 'ideation' stage and 13 per cent in use-case testing.

The use of technology varies by region, not just in the case of AI. There are indications that the UK is lagging behind when it comes to getting the basics of digitised processes right. Only 59 per cent of UK-based customers said they had access to an online portal as part of their insurance policy, according to a recent survey from Consumer Intelligence2. Equivalent figures were 71 per cent in the US, 76 per cent in Hong Kong and 82 per cent in South Africa.

"Insurance is a reasonably conservative industry. It hasn't been revolutionised," says Dennis Toomey, Global Director, Counter Fraud Analytics, BAE Systems. But market forces, he says, are pushing the sector in the right direction.

"The origins of the industry are as a big risk-management engine, so there have been no radical changes. But insurers are struggling to make money, so there is now a real imperative for change."



[3] https://www.capgemini.com/gb-en/service/world-insurance-report-2018/

[4] https://www.consumerintelligence.com/articles/uk-insurers-lagging-behind-when-it-comes-to-digital

Customers demand machine-streamlined services

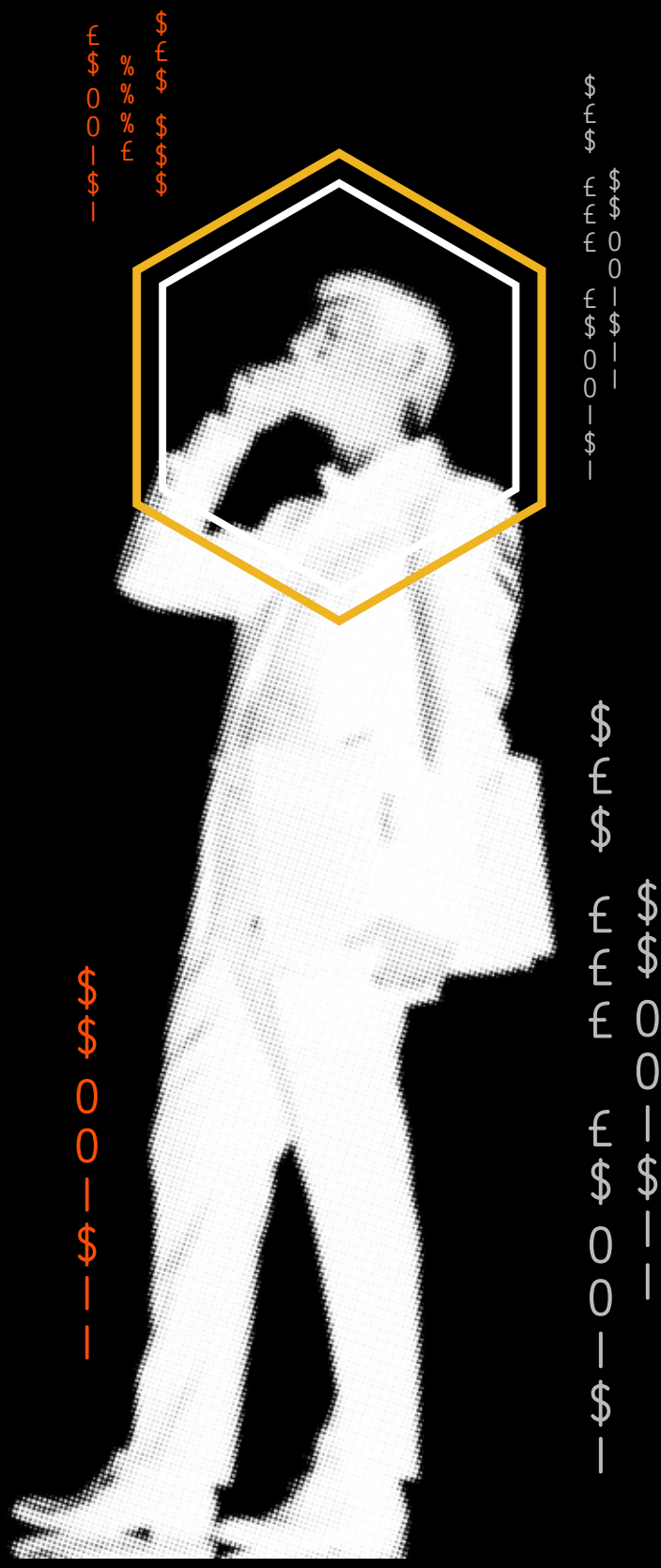
Increasingly, insurers are turning to automation, robotics and AI to drive the efficiencies they seek. Yet it is not only cost-saving that underpins this slow revolution.

Rather than seeking to eject humans from the office – and with them their salaries – insurers deploy these technologies to improve and streamline the customer experience; identify and capture the most attractive risks; and combat criminal threats.

David Germain, Group Chief Information Officer at insurer RSA, says: "Most customers want a frictionless and speedy interaction with their insurer.

"Making a claim can be stressful. It can mean multiple phone calls asking the same questions and seeking the same information. Creating a frictionless process becomes very important and technology will always be pushed to enable those products and solutions in the industry."

This is nothing new, particularly in direct insurance. Creating a real-time, frictionless purchase and claims process has been a priority for most insurers for years. But such progress has had knock-on effects, particularly with regard to how insurers protect themselves against criminals.



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Crime-fighting machines

Toomey explains that as companies drive more automation in the core business, to save money and improve customer experience, the anti-fraud and cyber teams have had to keep pace to fulfil the promises that digital has made.

"Insurers are moving to a world where they have a service-level agreement (SLA) to pay claims in two hours," says Toomey.

"They can't then take 25 per cent of their claims into a manual fraud triage process because that breaks the SLA. The business owners driving that SLA won't accept it.

"Businesses are not saying, 'Let's go and invest (in digital) because it makes anti-fraud measures more effective', but they have to change the way they fight fraud to adapt to the way the business is interacting with customers."

So what does this drive to speedy, technology-driven processes mean for the people who performed those roles before?

People make decisions

As has always been the case, the insurers best prepared for the future are those whose plans involve not just technology but also the productivity and skills of their human talent.

First and foremost, technology's job in the fight against financial crime is to allow people to make better decisions. As Hannah Green, Technical Lead, Cyber Analytics at BAE Systems, explains: "The machine can interpret much more data much more quickly than a human can, but the human understands its impact better than the machine."

The core purpose of the machines is to crunch through the vast lakes of data at an insurer's disposal and identify patterns and threats that emerge.

But machines are not a catch-all answer to crime fighting in insurance. There are, predictably, limitations. It is here that human expertise – and the ways it is deployed – remains key.

"By using a data-analytics program such as NetReveal, an insurer can be given 100 fraud alerts, with 90 per cent of the value of the fraud in the top 10. So they can decide whether to get the human to look at all 100 or just the top 10. That is a financial decision they have to make," explains Green.

In the emerging world of cyber security, such decisions are more complex – and the need for human involvement all the greater. "There you have 100 alerts and the top 10 are likely to be top 10 because we know what they are," continues Green. "The other 90 are there because they haven't been seen before. That doesn't make them less dangerous. A human is required to do the digging to find out what the real risk is."

Fraud checks can now be largely automated. Fraud is fraud. But in the cyber world, a human will always be needed to investigate something novel. Only once that threat is understood can the experience be fed into the algorithm. The latter cannot teach itself. As advanced as automation and data analytics already are – and their capabilities will increase since technology does not stand still – they are not self-realising.

> "As has always been the case, the insurers best prepared for the future are those whose plans involve not just technology but also the **productivity and skills of their human talent.**"

The workforce of the future

Technology is unlikely to drive humans out of the insurance workforce anytime soon. Rather, we'll increasingly see technology - such as AI - helping humans make better decisions, faster.

"Humans will always have a role as trends will always change," says Germain. "If you can develop algorithms and programs to manage specific tasks through machine learning you will gain useful insights to products, pricing and services.

"But you are always going to have to be both creative and innovative in your solutions and design to figure out what is going to happen next. There is no technology or algorithm that can do that for you in isolation. That level of dexterity and forward thinking remains the preserve of the human mind."

While our technology is reliant on human 'instructions' to perform tasks, there is no doubt that it is having a marked effect on the way we humans work in insurance.

Technology is changing traditional roles performed in the anti-fraud world. In a team making decisions about fraud and what should be paid in a claim using machine learning, algorithms and AI, the role of analysts and investigators shifts from looking at individual cases to considering a broader portfolio of threats.

Toomey explains: "In an automated world, people are now monitoring what is going on in the automated process, looking for trends and changes."

But even when they do identify emerging patterns and threats, technology alone cannot explain the situation. It can simply show that something is happening. Human analysis is needed to reveal the full picture.

"Fraud teams have this problem where they have seen shifts in fraud behaviour and only noticed them in the data or trends in the claims that are paid. When they see that they need to react," says Toomey.

Data scientists can provide the insight to ensure that reaction is effective and appropriate.

"So BAE Systems has been looking at providing additional services, such as a data science response team. An insurer can contact this team to find out what is going on. Insurers need the human to come in and analyse what the trend means and what is happening."

The challenge, it seems, is not so much about humans adapting to machines or making way for them, but rather in finding the best ways for humans and technology to work together to maximise the strengths of both.

New ways of working require new skills

Integral to this process is identifying the skills required to suit new ways of working. As more operations become automated, innately human capabilities including creativity, empathy and leadership will be in more demand, found a 2019 report by PwCI.

Even if we can list the skills needed though, ensuring their development is more complicated. The same report found that more than 80 per cent of insurance CEOs were extremely (36 per cent) or somewhat (45 per cent) concerned about the impact of skills shortages on growth prospects.

Only 53 per cent of chief human resources officers were reasonably or highly confident that their organisations' future workforce strategies were prepared for these skills demands, found a 2016 survey by the World Economic Forum[6].

Insurance doesn't have a great track record in recruiting for the skills that it currently requires, let alone those needed in the future. Alarmingly, in a 2018 survey by Deloitte[7], just 4 per cent of millennials expressed a desire to work in insurance.

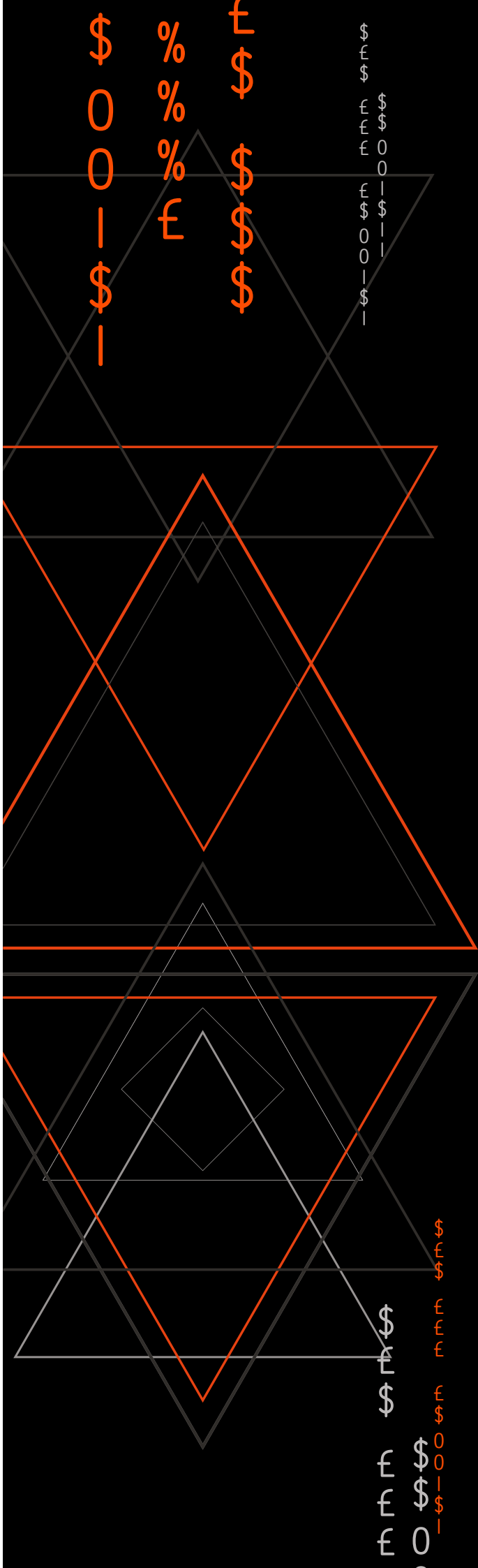
But the industry's focus on customer relationships could render it particularly well-suited to humans and machines working side by side.

As Toomey predicts: "In some circumstances human/machine cleaving will be appropriate. Where the human is replaced completely, you are trying to drive out the things that the customer is happy to have automated.

"But for the parts where the customer needs to feel some support, you cleave that in and try to find ways to smartly integrate that with the digital channel."

[6] https://www.weforum.org/agenda/2016/01/the-10-skills-you-need-to-thrive-in-the-fourth-industrial-revolution

[7] https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/gx-2018-millennial-survey-report.pdf



Knowing right from wrong

One capability that technology cannot replicate – currently at least – is the moral compass that most humans possess. Technology doesn't have the ability to answer the 'should we do this?' questions.

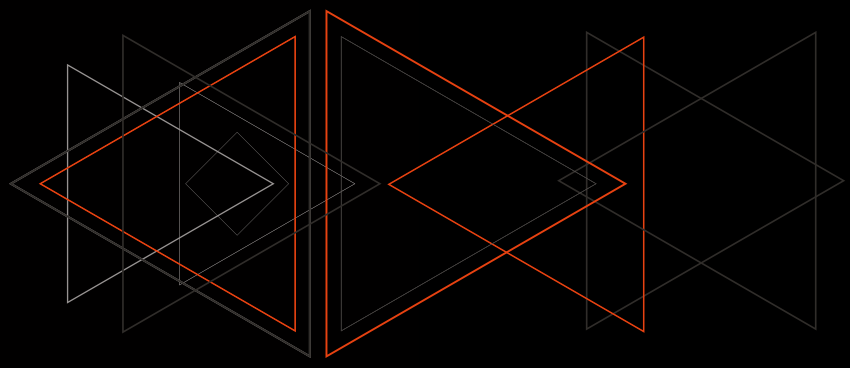
Esme Heywood, Cyber Security Consultant at BAE Systems, explains what this means for the future workplace: "There will still need to be people in the lead for this type of thing. On paper it looks as if machines will be great, but the data they are basing their decisions on could be inherently biased. It is based on what we humans have input."

In 2018, Amazon[8] encountered just such a problem with an AI-driven recruitment tool. The problem? It didn't like women. The machine hadn't unilaterally decided to discriminate against women in the recruitment process; it had been 'taught' to do so – unintentionally – by people.

The algorithm had been fed historical recruitment data based on applications to the company over a 10-year period. Given the historical male dominance of the tech industry, the data was skewed and the result biased.

Had this machine not been overseen and checked, it would have discriminated against female applicants for the rest of its digital career. It is an example of why, ultimately, humans will always have a role in the digital landscape – however attractive and unavoidable it becomes.

> "AI and machine learning will solve lots of problems, but they will also come up with new ones."
>
> Esme Heywood, Cyber Security Consultant at BAE Systems



[8] https://www.reuters.com/article/us-amazon-com-jobs-automation-insight/amazon-scraps-secret-ai-recruiting-tool-that-showed-bias-against-women-idUSKCNIMK08G

Who's asking the questions?

"There needs to be a person who will have that moral compass. The role of the human today and tomorrow is to ask the more difficult questions. Is it ethical? Do we understand that data? Do we know how it reached those conclusions?" continues Heywood.

In 2018, the FCA expressed its concerns[9] that insurers' use of data in pricing could lead to inadvertent discrimination against people with protected characteristics. Clearly even regulators expects human oversight of machines.

But if technology is only as good as the data it absorbs, the human is only as good as the moral compass that guides it. Insurers must ensure this is robust. Having a human at the helm doesn't guarantee fair outputs. And fairness is at the core of everything insurance should be about.

Toomey says: "The topic of fairness has become quite hot in insurance (with recent interventions by the regulator). People want to know how a machine decided they were a higher risk."

Technology cannot decide what is and isn't fair. It is the people who guide and direct them who can. The human priority will become the machine's priority. And as a new generation enters the workforce, employers are noting that it brings with it a different set of ethics and expectations.

"I have a lot of graduates working for me and the most important thing for them is that what they do is ethically correct," says Heywood.

"That is coming through more and more and I'll be interested to see if that sticks. What is important is the moral imperatives of the generation that runs the machines."

[9] https://www.fca.org.uk/publication/thematic-reviews/tr18-4.pdf

Conclusion

In insurance, the role of the human has changed exponentially between 1950 and today, and we can expect technology to continue to influence change between now and 2050.

The machines aren't coming. They're already here. They are working among us, helping us wade through an increasingly complex and data-driven landscape. And in the context of insurance, sci-fi fears of a robot apocalypse appear to be unfounded. The human touch is required – and probably always will be – particularly during a claim.

The roles we choose to give technology are up to us; they depend on the work we put into its design and the ways we use it. Crucially, machines will only be as 'good' as we make them. They are reliant upon our input and our guidance to provide the moral compass they lack.

This means that insurers must move away from their habit of prizing technical expertise above all else – important as that undoubtedly is – and start finding and developing all the required skills of the future. They are those that will work best together with the capabilities of the technology. Then the sector could be the ideal incubator for a true amalgamation of human and machine.

Technology will continue to change the industry up to 2050 and beyond, but this is a human business and people will always be at its heart.

What next?

Technological innovations will continue to change how insurers operate, adjusting the role of the human in multiple ways.

Start positive

Insurers know that human involvement in customer interaction is vital. Even with Straight Through Processing, particularly for small property and casualty claims, customers expect a person if there are complications. At a higher level, people must help train machines for some routine tasks. AI and ML remain force multipliers rather than straight replacements.

Build pragmatic strategies

AI and ML can't simply be applied to business cases as a sticking-plaster solution. The wider business needs to understand how its particular activities can benefit. Counter-fraud is an excellent place to build the case, but it's not the only beneficiary. Read our companion report on maximising AI's return for insurers to understand more.

Plan ahead

Machines won't replace humans – though employees may need new skills and technical or analytical experience may need to be back-filled. Yet insurers may not need as many people. Pilot schemes and early technology adoption bring benefits: hitting appropriate employee numbers through natural wastage rather than redundancies, and a competitive edge on tech- cautious competitors. Early and honest communication with staff about the likely impact and opportunities of machine interaction will reap benefits.

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