Pragmatic AI
for Insurance

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1: Executive Summary

Insurance companies have a long history of using analytics, but the advent of artificial intelligence (AI) has taken this to a new level. Across Europe, the Middle East and Africa, there is both a new excitement about the potential of AI in insurance, and concerns about how it will affect the industry and those working within it.

In summer 2017, SAS subject matter experts carried out a series of interviews with 100 business leaders across the EMEA region, including 13 from insurance companies. The aim was to understand the state of readiness for AI. It was clear from the responses that the insurance industry sees huge potential in AI, largely as a way to improve efficiency. Unlike other sectors, insurers see the need to improve processes and practices, and expect AI to play a large role in that effort. They are, if anything, ahead of the curve on readiness for AI. More than in other sectors, insurance companies had projects that had reached piloting or proof-of-concept stages, and they could see how AI would actively be involved in improving business processes. For this sector, it seems, AI means 'business as usual, but better'.

In practice, though, what does this mean? There are a number of ways in which AI is likely to be used by insurers. The first step may be to reimagine the customer experience. Like other sectors, insurance processes often get the customer experience wrong. They provide the wrong information, at the wrong time. But analytics and AI offer the potential to know customers better, and understand their wants and needs, then act on them more efficiently and effectively. Analytical lead management enables firms to deliver offers that customers want, when they want them, in a commercially-effective way. The result is likely to be a much more customer-centric sales process, and a huge improvement in customer experience.

Another key element of the customer experience is contact centres. No longer call centres, because of the increase in use of messaging and social media to facilitate contact between company and customers, contact centres are increasingly sophisticated. Many are now using advanced analytics to identify potential problems with customer interactions in real-time. Some are also considering how chatbots could be used to improve the service provided to customers, perhaps by handling the easier issues such as policy FAQ's, leaving human operators more time to deal with the more complex problems and

claims handling. It is clear that this is likely to prove a developing area, with more potential for growth and change.

Claims handling is another area that can—and has—benefited from the application of machine learning. For example, one insurer has used it to improve the process for making the write-off/repair decision at first notification of loss, and reduced the time required to make the decision to write off a car from 28 days to just seconds. The accuracy of the decision has also improved, and perhaps best of all, the claims handlers are delighted. This example shows how AI can be used to augment human decision-making, by performing the complex analysis of data about the cost of repair and the value of the car, allowing claims handlers to focus on the brand enhancing customer experience.

What will the future look like for insurance, as AI becomes more ubiquitous? AI and its ability to process large data sets offers the potential to break insurance markets down into 'markets of one'. In personal lines, this can be individual people and in commercial lines this could be individual businesses, who are all producing unique risk profiles as the volumes of data they generate increases.

This raises some serious ethical questions. When wearables can show how much exercise someone is taking, health insurance risk is simpler to assess on a personal basis. Regulations and ethics may be on a collision course, and insurance companies need to be alert.

It is conceivable that the whole model of insurance will evolve. Data is becoming the most valuable commodity, and insurers are competing with businesses who offer value add services in return for access to data, rather than money. We are seeing early signs that insurers recognise the opportunities to mitigate the risks they insure through new data sources. Is risk and loss prevention the future for insurers? It is certainly an interesting idea.

2: Artificial intelligence in insurance: Where does Europe stand?

Where does the European insurance industry stand in terms of advanced analytics, AI and automation? Are traditional methods of data analysis simply being labelled as "machine learning"? Surely the industry is more advanced than that. Are chatbots, for example, already ubiquitous? Let's take a closer look.

Using machine learning to approach familiar processes and promote cultural change

Insurance companies have a very long history of using analytics. Actuaries have traditionally been in charge of this task. This community have typically used Generalized Linear Models (GLM), working with what by today's standards would be deemed small amounts of data. These methods, according to Kenny Holms, Head of Predictive Analytics at Argo Group, are 'plain vanilla' techniques from a bygone era, before the advent of Big Data and machine learning. Newer methods and more data often lead to more accurate predictions. And only those who can use unstructured data fully (today unstructured sources still account for more than two thirds of the data available) can exploit the full potential.

Modern data scientists are taking a very pragmatic approach to using these methods. We are starting to see them more and more as part of analytics teams in insurance companies. However, this also requires active cultural change as more sophisticated analytical techniques can be more opaque and harder for business stakeholders to understand. Chief Digital/Data Officers are beginning to coordinate activities around digitisation, AI and data-based decisions, placing this at the centre of the insurers universe. At the same time, it is just as important for insurers to allow their analytical talent the freedom to explore. Allowing data-driven research and experimentation, instead of being satisfied with what the organisation has done before. This can help to attract young stars, who typically perceive Facebook, Google, and Apple as much more sexy than the good old insurance industry.

Insurers also need to consider and prepare for the organizational impact of AI. Increasing automation will make many existing performance KPI's and resource allocations redundant. This will also mean that new jobs are created, requiring new skills and new organisational alignment.

What is the right use case?

Where do you start if you want to establish machine learning to improve predictions in insurance? Where should AI systems be used first? Fraud is generally seen as a good starting point to try out new models and gain experience. However, Anthony Barker, Head of Claims Operations EMEA at SwissRe Corporate Solutions, favours claims processing, saying:

> " This is where the promise becomes real! "

Barker has said that the business departments must take a role in promoting innovative ideas using AI applications. They cannot wait for IT and all the technical prerequisites to be up and running to try out ideas. Those who apply this approach have high differentiation potential. Barker suggests imagining a completely different way of processing claims than typically experienced today: for example, suppose that an AI system, by reading the local news, Twitter and other social media, concludes that you had a fire in your house. Why not just pay you 50% of the cost of the possible damage immediately and then see what happens? Of course, this presents a challenge and an example of how AI influences business processes.

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The operational application of AI is a major challenge. Many organisations find the automated execution of analytical decisions very difficult. Few are also considering the organisational realignment that the use of AI provokes. But in order to, in order to compete, the automation of underwriting, the claims process, fraud prevention and, last but not least, customer interactions with a personalised customer experience are of particular importance.

Radical ideas?

Many insurance companies are just beginning to consider how they evolve their business to remain relevant in the new connected world. This requires a complete rethink. Peter Ohnemus, CEO of Dacadoo, has suggested that a dramatic change is imminent for the health insurance industry, which has its back against the wall. Personal lifestyle is a huge driver of healthcare costs, with 40% being dependent on lifestyle factors. Health insurers should therefore see themselves as lifestyle partners, instead of simply handling the costs of diseases. Healthcare will become 'wellcare', which may lead to using wearables to implement a platform economy with data-based products and services.

This dynamic may also be relevant to commercial lines. As the industrial internet of things gives companies a wealth of data on their business, its assets such as machinery, buildings and fleets of vehicles, would it be reasonable to share this with your insurer to help them tailor your premiums? Brokers and underwriters need to consider the vast amounts of data they could be faced with, and how AI could help them to translate that data into new products and pricing models.

One particular area of importance is the growth of unstructured data such as images and video. A dataset that a well-trained AI model can process faster than any human. By actively influencing behaviour, Visiontrack, the supplier of surveillance cameras for vehicles, wants to mitigate risk. An in-car camera monitors the driver and the driving situation in real time and sounds an alarm when the driver yawns, looks distracted, makes a phone call, or closes his eyes. The aim is, of course, to prevent risk, and make the insurance company something of a 'guardian angel' for the driver. This will, of course, not be without its controversies.

Emotion instead of technocracy

Chatbots are another innovation raising awareness of AI. Insurance companies are already planning the digitalisation of many of their customer contact processes, not least for reasons of efficiency. David Stubbs, founder and CEO of RightIndem, suggests that it may be a matter of approach rather than technology. He believes that it is more important to understand customers' basic needs when digitising processes, for example in damage assessment. A pure technocratic approach will fail. An insured person who has suffered a loss is having a bad day, and would probably like to be able to speak to a person, not a chatbot.

Even with AI and machine learning, bad processes remain bad processes. Only new thinking on many levels will bring success.

3: AI in insurance – findings from the survey

During the summer of 2017, SAS subject matter experts interviewed 100 business leaders across EMEA to understand the progress within organisations towards AI. Among the respondents were 13 insurance companies. Together with banking respondents, the financial sector represented about a third of the survey. Responses from the financial sector were, in several cases, in line with overall trends, but there were also some key differences in responses both from financial services as a whole, and from insurance companies in particular.

Assessing the impact of AI

The 'one-word summary' of the responses from the insurance sector is probably 'efficiency'. Insurance companies expected the impact of AI to be slightly slower than banks, but they also anticipated seeing a far greater impact on improving efficiency and productivity. Possibly as a direct result of this view, but certainly linked, insurance companies saw automation of repetitive tasks as a natural area for early results from AI.

The financial sector respondents identified similar challenges to the overall group. However, insurance companies were slightly more likely to be concerned about the impact on jobs, and particularly the changing scope of jobs. This is probably because they saw increasing automation and efficiency as an obvious area for AI. They therefore recognised that this would profoundly change the nature of their business, with comments including the frustration currently experienced by customers with call centres. While 'improving efficiency' has come to be seen as a euphemism for job losses in many sectors, this did not seem to be the case here, with recognition that processes needed to be improved.

AI readiness and current state of play

Levels of optimism about AI were similar in the insurance sector to the overall trend across all respondents. If anything, respondents from insurance companies were slightly more optimistic about the effect of AI on their organisations than others. They were also more likely to say that their organisation's technology platform was ready for AI.

The financial sector as a whole appeared slightly more advanced in its use of AI than other sectors, and this was largely driven by changes in insurance companies. A larger proportion of financial services firms than overall said that they had projects that had reached the pilot or proof-of-concept stage, and were using analytical marketing techniques. Insurance companies were also far less likely than banks to say that they had no AI projects in place at all, suggesting that most firms in the sector have started to experiment with AI.

There were some key differences in plans to improve team readiness for AI. Insurance companies were relatively more likely to say that they were relying on external partners as a way to build data science expertise. They were much less likely than banks to be building or training their own team. This may explain the relatively higher levels of optimism about readiness among insurance companies: it is probably easier to buy in expertise than to develop and build it in-house, especially from a low base.

By contrast, however, insurance companies were more likely than banks or the wider group of respondents to be developing or already have their own infrastructure in place. Far fewer had opted for or were expecting to choose cloud-based solutions, both when compared to financial services as a whole, and the overall group of respondents.

Drivers and business cases

The financial sector as a whole had very much opted for one of the two main models driving AI use: a central unit or business unit initiatives. Insurance companies were particularly likely to have opted for a central unit approving AI use cases and/or driving AI adoption.

Business cases were also far more likely to be defined as experimental or proof-of-concept in financial services, although those in the insurance sector were most likely to be linked to provision of cost savings through efficiency. Insurance companies were also more likely to be focused on growth potential. Despite comments about customer experience earlier, no insurance sector respondents mentioned this as a driver of business cases. Few insurance sector respondents discussed differences in business cases for AI, although those that did mentioned the difficulty of evaluating ROI, and the importance of fit with strategy.

It is fair to say that the insurance sector seems to see AI as a way of improving its existing business model. Responses focused on efficiency and productivity, rather than changes to business models. This may change over time, particularly if AI is seen to have more disruptive potential, but at present, the industry is keen to ensure that it is a case of 'business as usual—but better'.

See Main AI report >

4: Re-imagining the customer experience

It is time to reimagine the customer experience in insurance. Too often, insurance companies' lead management arrangements get it wrong. They try to sell new products to customers who want to find out more about their existing products. They spam customers who want help. Most importantly, they fail to understand that the customer journey is no longer linear, and that rules-based systems no longer work well.

Analytical systems, by contrast, offer the opportunity to get to know your customers. They enable you to understand what your customers want and need, and help them to get it.

Analytics-based lead management

To be able to make relevant offers to your customers, it is crucial to understand their context. Analytics-based lead management systems use three pillars:

Listen
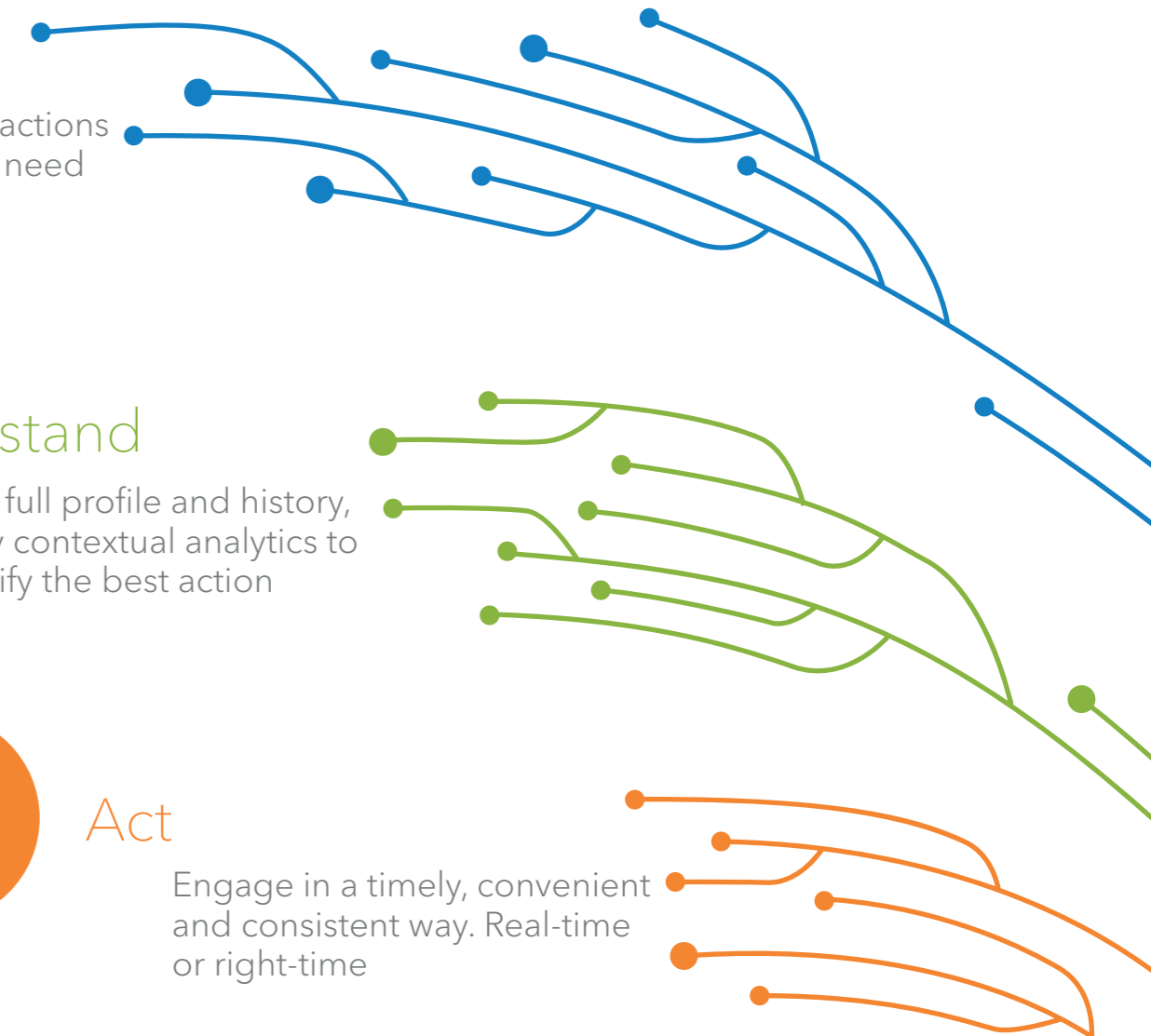To customer-initiated actions and events indicating need

Understand
Their full profile and history, apply contextual analytics to identify the best action

Act
Engage in a timely, convenient and consistent way. Real-time or right-time

Listen

Listen to customer-initiated actions and events indicating a need

Doctors say that patients will always tell you what is wrong, if you just listen to them.

It is the same in insurance. You just have to 'listen' to your customers' words, and also pay attention to their actions. Together, these will show your customers' real needs. Using this information, you can start to build up a 360° view of each customer: who they are, what they know, how they choose to interact with you, and how they react to you.

Data you can use include sociodemographic data, information about previous transactions and interactions, and data from apps and connected devices. Social media information, including both posts and networks, is particularly useful for sentiment analysis.

This 360° customer view can be used to interpret online and offline behaviour. This, in turn, helps you to understand the customer's context, and react effectively to events such as searches for information.

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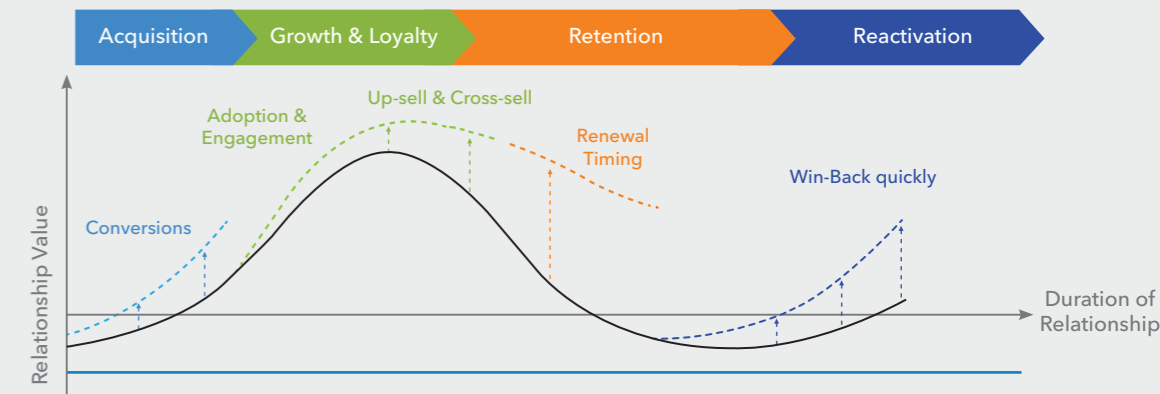
Using a set of analytical models, it is possible to determine the customer's position in the purchase lifecycle and the best action to take as a result. It is possible to create a different model for every step in the lifecycle and every product, to ensure that you really understand the context of the customer and take the right next step.

Predictive analytics use historical data to estimate the potential of a new customer. Metrics used include the profile of low, medium and high-risk customers, profiles of lifetime value for high, medium and low-value customers, and probability of accepting offers. They also estimate the probability of fraud or bad debt.

Association analysis or sequence analysis help to uncover patterns in the signals and metrics, and define which steps customers take before particular purchases. These, again, help to define the right next step for each customer based on their previous actions.

By analysing these online and offline events, you can obtain data-driven weights of every possible interaction between customer and company. Using self-learning algorithms means that new patterns are discovered and non-working combinations of events are filtered out, making the models more effective all the time.

Understand:
The value of Analytics

| Acquisition | Growth & Loyalty | Retention | Reactivation |

Conversions — Adoption & Engagement — Up-sell & Cross-sell — Renewal Timing — Win-Back quickly

Relationship Value / Duration of Relationship

Audience targeting
- Look-alike Models
- Audience Profile
- Real Time Offers

Behavioral Monitoring
- Engagement Scoring
- Next Best Content Recommendations
- Triggered Contacts

Growth Modeling
- Cross-sell Modeling
- Next Best Content Recommendations
- Life Time Value

Retention Modeling
- Attrition Modeling
- Renewal Timing & Cadence
- Retention Offers

Reactivation
- Look alike Models
- Win-back Offers

⚡ Act

### Engage in a timely, convenient and consistent way

Leveraging data mining and statistical analysis will guide you by recommending the actions that are likely to be most acceptable to customers under various circumstances. But you also need business rules to enforce commercial logic and to make sure that offers drive the highest commercial profit, taking into account the acceptance rate.

Marketing automation can be used to combine analysis and rules-based approaches. Using this, the 'best actions' emerging from the analytical models in near real-time are reordered based on commercial constraints and customer contact policies, across all channels. If the customer rejects the offer, the system will automatically recalculate the next best action as a result, again in near real-time.

5: An integrated future

The result of this change is a customer-centric approach that genuinely reimagines the customer experience. The 360° view of customers, and the use of accurate analytical models combined with business rules mean that customers will be offered the right product at the right time, within commercial constraints. The data are unique to the organisation, as are the models, making this approach genuinely non-imitable.

This places competitive advantage at your fingertips, but more importantly, your customers will really notice the difference. Improved customer experience means higher levels of customer satisfaction, better customer retention, and ultimately, greater returns.
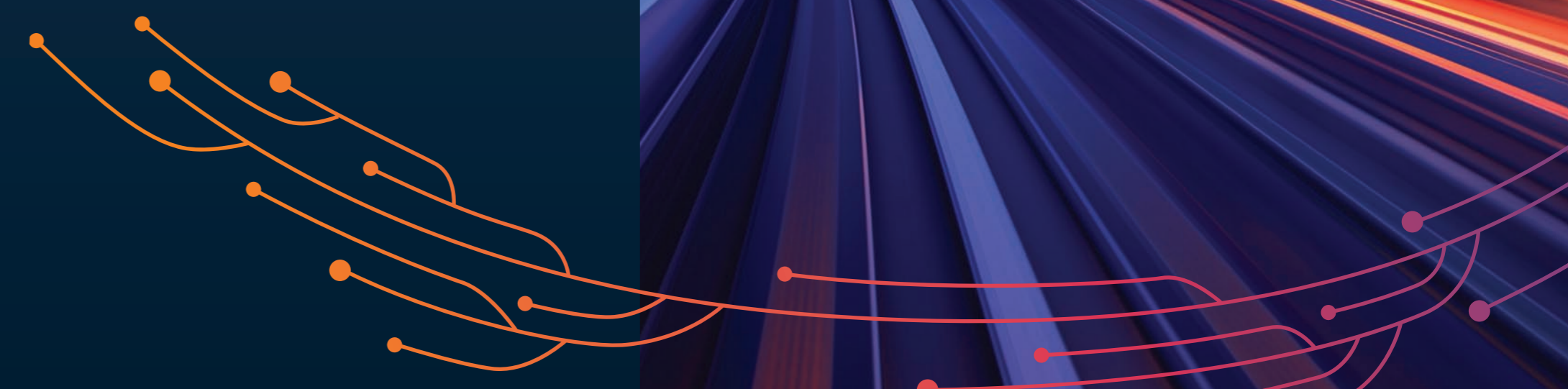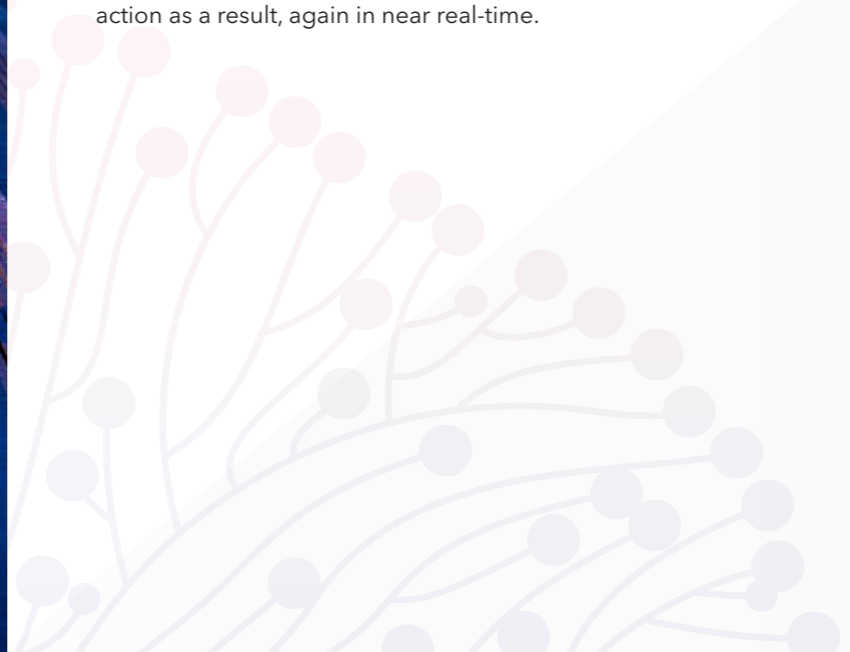
6: The role of chatbots

Call centres have been around for a good few years now, and have had their fair share of bad press. Most of us have horror stories about the length of time spent on hold, or our inability to speak to the right person or get a helpful response, or even just the unavoidable canned music. But views on the roles of call centres are now changing. Many companies have come to see that they may be key to managing customer experience more effectively.

Enter 'contact centres'

Perhaps the most obvious sign of change is that call centres are now often known as 'contact centres'. This reflects the increasing use of text- and messaging-based interactions with customers, alongside the more traditional, but still very popular, telephone contact. It also reflects the move towards consideration of the 'customer journey', rather than individual channels of communication: Customers do not view interactions as 'different' via website or phone, so neither should companies.

There is increasing recognition that contact centres have multiple roles, including pre-sales, sales, complaints, and post-sales services. Each of these needs to be handled slightly differently, which means that contact centre agents have one of the most challenging jobs around. It is perhaps best to view this as involving a cycle of meeting customer needs and resolving problems.

Getting it right – at the right time

For example, in handling complaints, contact centre agents need to get to the bottom of customers' displeasure: finding the 'root cause' of the problem, whether that is an issue with the product, or an inability to find the necessary information. They need to be able to pinpoint and resolve issues that lead to inefficiencies, both on the customer journey, and in the contact centre more generally. They also need to be able to target offers at the right customer and at the right time. There is no question that when contact centre agents get it right – when, in essence, they do their job better – customers will be happier, and happy customers are more likely to come back.

This is the part where the story gets more challenging. Despite state-of-the-art infrastructure and software to run it, the wealth of data available in the contact centre is still mostly untapped from an analytical perspective and rarely used beyond basic operational and KPI reports, based on agent-populated data.

Enter machine learning & natural language processing

But how can contact centres be improved? Many companies are finding that analytics, artificial intelligence and chatbots are a major part of the answer. These technologies are having both a direct and indirect impact on the way that contact centres operate.

One of the biggest complaints of many customers is that they have to wait too long to speak to someone at the contact centre. Companies have made huge efforts to direct customers towards self-service channels such as websites, but research from Forrester confirms that around three quarters of customers still prefer to phone. This is particularly true for financial services, where queries can be complicated. Companies in this sector have already started to deploy chatbots to deal with the easier queries, such as FAQ's, to reduce customer wait-times. Real-time analytics allow human operators to work in partnership with the chatbots, and step in quickly as soon as the conversation gets too complex.

Real-time analytics and AI

Artificial intelligence and analytics are also being used to improve the way that operators relate to customers. For example, voice, speech and text analytics allow interactions to be analysed in real-time, so that 'coaching' suggestions can be passed immediately to staff, to change the way that they are interacting with customers at the time. This is a huge change from recording calls and playing them back later to provide effective feedback to staff. Technology that can sense behavioural signals and emotions can be particularly helpful in improving empathy. Getting the 'tone' right will improve that customer's experience, and so result in fewer complaints. It is also likely to reduce the length of calls, because customers' issues will be resolved more readily, resulting in shorter customer wait times.

Contact centre analytics, particularly text analysis and data mining techniques, can also provide useful information about customer churn, competitive threats, and refusal or purchase reasons. This information, in turn, can be used to improve the customer offer, both individually and overall, and therefore make customer experience better. This creates a 'virtuous circle' of using information to drive improvement.

The heart of customer experience

Ultimately, contact centres are at the centre of the customer experience. Recognising that, and acting on it, is likely to improve customer satisfaction. Equally importantly, as a result of its position at the heart of the operation, data from contact centres has a huge role to play in improving products and services. The role of the modern call centre has very definitely changed, and the impact is huge.

7: The impact of machine learning on claims processing

If the contact centre is at the heart of the customer relationship in insurance, it must play a key role in claims processing. Insurance providers often get a bad press about claims handling, and particularly about avoiding payouts, which damages their reputation as a sector. This makes customer relationships harder to manage. Switching is common, and many customers treat insurance as a commodity, which anyone who has ever had to make a claim knows is not the case.

Car insurance claims processing

Car insurance claims processing may be one of the most challenging areas, particularly for managing total loss (write-off) situations. Customers are already stressed about having an accident, and losing their car. Poor claims handling can only make the situation worse.

> " More data can lead to better accuracy. "

Claims handlers are required to make a decision about whether to send a car for repair, or to write it off immediately, based on the information provided by the customer. Unfortunately, this process can be 'hit and miss'. In one company, around a quarter of claims were written off, but around 60% of cars were wrongly sent for repair.

This results in two main outcomes: it takes longer to settle claims, and some repairable cars are written off. The average time to settle a write-off claim was 28 days. This length of time meant vehicle storage costs, assessor costs, credit hire costs and perhaps worst of all, unhappy customers. It was clear that there had to be a better way, one that would enable decisions to be made faster and more accurately. Enter machine learning.

Embedding machine learning systems into claims handling

This insurance company added a machine learning algorithm to the claims handling process. The whole process was automated, starting with obtaining policy details and carrying out fraud checks. At that point, a new machine learning algorithm was built in, to assess the likely costs of repair in real-time.

> " The whole process was automated, starting with obtaining policy details and carrying out fraud checks. "

This system used an unsupervised learning system, similar to those used for recommendations engines on Amazon and Netflix. This type of deep neural learning, or deep neural network, is particularly good for learning from unstructured data such as images. These systems need a lot of data, but more data can lead to better accuracy.

The algorithm examines photographs of the damage submitted by the owner. The image size is standardised, and it is converted to greyscale. The 'noise' in the image is reduced, and binary data can be created, to enable the algorithm to recognise contours and therefore assess the level of damage. Over time, the algorithm learns patterns, and starts to 'understand' the nature and extent of the damage. This, in turn, allows it to assess the likely cost of the repair in real time. This cost can be compared to the valuation of the car—often from third party data—and an immediate decision made, including which garage to use for repairs if appropriate.

A huge increase in performance

The addition of machine learning to the system has massively improved performance. A huge 85% of write-offs are now correctly identified on the day of the claim. The average settlement time for a loss has reduced from 28 days to just seconds. These faster decisions are clearly better for both customers and the organisation, with much lower costs. The ability to assess loss versus repair has improved, and perhaps most importantly, claims handlers love it: there is over 90% adherence to the tool's outcomes.

The best AI systems do not attempt to replace human intervention, but instead perform the rapid calculations and assessment of huge amounts of data—which humans simply cannot manage – to support decision-making. This is a really good example of AI being used to augment human capabilities.

> " Faster decisions are better for both customers and the organisation, with much lower costs.
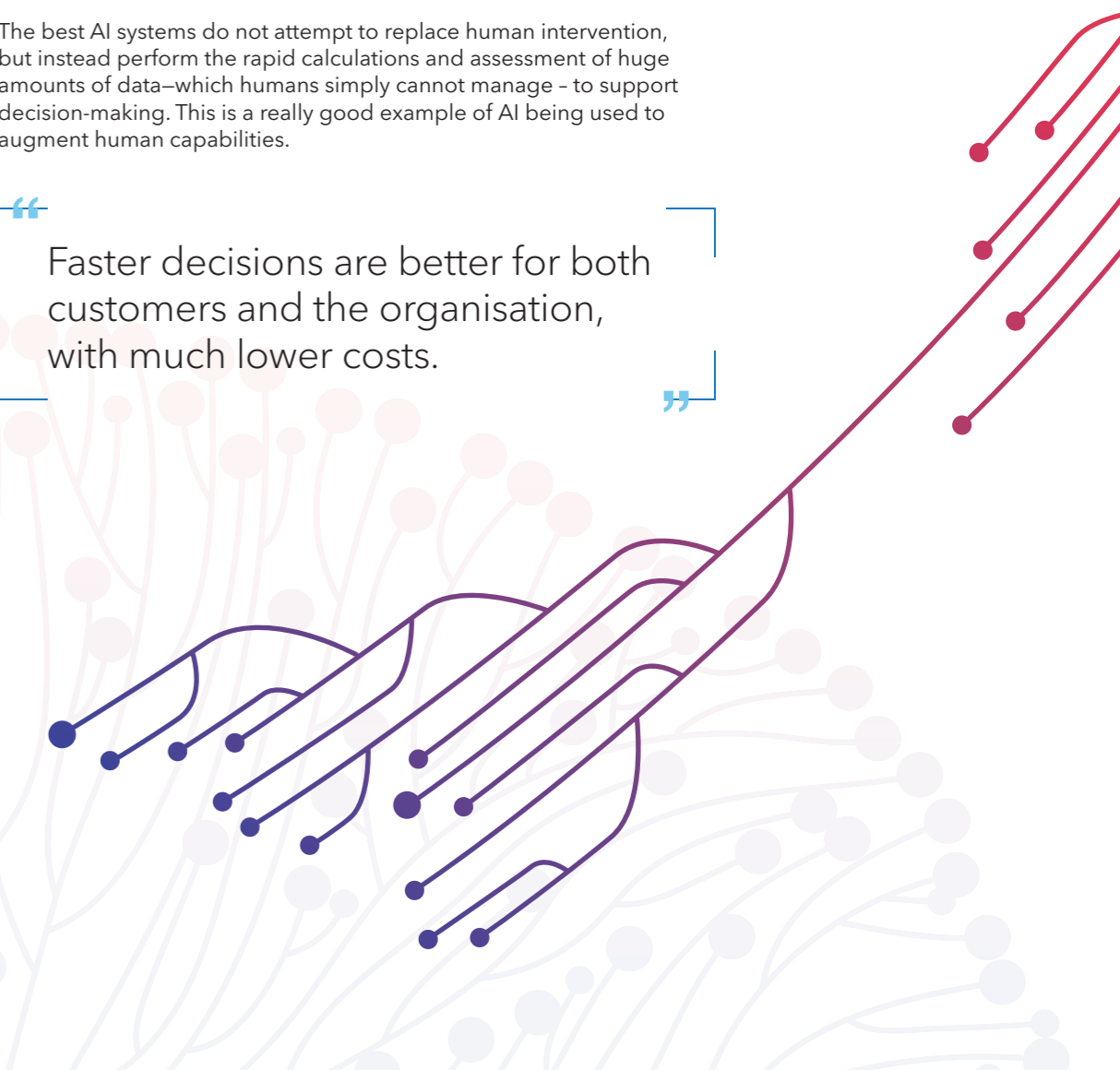
8: Disrupting risk management

In many ways financial services is about risk management. Regulatory pressures have hugely strengthened that focus. But there are other concerns too. Cost pressures are increasingly important, as is the rise of challengers to the status quo, including online-only providers and new entrants to the market, often more specialist and more targeted than the incumbents. Digital transformation and the drive towards online services, including the rise of the Internet of Things (IoT), is another challenge.

> " IoT and big data analytics offer the potential to break customers down into segments of one. "

But perhaps the most difficult area is the connection between digital transformation and regulation. The challenge is to maintain current risk processes and systems, but integrate them with new platforms such as Apple Pay, in a way that is compliant with regulations. Are risk managers looking at these issues? Our discussions with a cross section of risk managers suggest that the answer is a resounding no.

Insurance may be leading the way

Insurers have always been focused on risk. Traditional risk management models in insurance break down potential customers by segment to assess their relative risk, and then quote the 'correct' premium for that risk.

IoT and big data analytics offer the potential to break customers down into individual segments (or 'segments of one'), a process known as hyper-personalisation. For example, the use of a 'black box' to record a customer's driving means that there is no need to consider age, gender, or location to assess risk. The quote can be personalised by known driving style. Equally, use of wearable technology to assess well-being and health makes quoting for private medical insurance instantly less of a risk, and more personalised.

In other words, the use of analytics and the IoT is likely to bring improved customer information flow, more accurate pricing models and faster disbursements to the insurance industry. This will happen through real-time monitoring, collection and analysis of behavioural data. This is both an opportunity and a threat to incumbents: sometimes it is easier for an outsider to come in, building new systems for analytics, than for incumbents to adapt existing systems.

This improved ability to assess risk also has huge ethical implications. Insurance has always been about risk-pooling. Is it, therefore, ethical to raise the premium for an individual's health insurance because they have been less active for a few months? And what if customers refuse to wear a recording device?

At the very least, insurers will have to consider how they address these new implications to risk management, or they are likely to find themselves challenged in the courts, including under human rights legislation.

Bringing together risk and technology

There are no easy answers to any of these questions. All that can be said is that it will be crucial for risk managers in financial institutions of all kinds to be aware of the potential of new technologies to both help and harm their efforts, and to consider the likely impact of new regulations on their adoption.

9: The longer view

Industry-level transformation is easier to visualise by looking at adjacent sectors. Let's take a journey into a possible scenario. A new gym is opening. Unlike other gyms, there is no monthly membership fee. Instead, users pay with data. Would you join?

This is a real model, and of course there are questions about how this would work, including about privacy. However, the gym is not planning to resell personal data. Training results and evaluations of health records can already be used commercially, for example through targeted personalised advertising in the gym or at advertising events. These data are of course also of interest to other companies, such as health insurers or employers, for example, and could be sold on.

Some insurance companies already use this kind of data, such as Assicurazioni Generali. It rewards healthy living with discounts on risk insurance or occupational disability insurance using a telematics tariff. This simply means that the customer has to pass data to the insurer through fitness trackers or smartphones. Could the gym act as a middleman? Even more radically, could we see insurance being provided using a similar model?

> " Will we pay for insurance with personal data in future? "

Transforming business

Tech companies have managed to gather a lot of knowledge about users through the collection of data, and this has enabled them to implement a variety of offers. Google, for example, has transformed itself from a pure search engine provider into a much-used platform provider. The organisation now collects even more data and generates more knowledge about its users. Amazon is similar. Originally an online bookshop, we now use Amazon for much more. We regularly buy at the world's largest mail order company and, as a matter of course, we store data in the Amazon cloud or use the integrated music and video portal as Prime customers. Some of Amazon's own productions have already acquired cult status. Based on its market power, Amazon is even considering an entry into the insurance industry.

> " Insurers are already offering additional services from outside their industry. "

Could insurance cover be given away in return for data? Insurers are already offering customers more services and tariff options, and entering non-insurance segments. They want to differentiate themselves from the competition, offer customers value and improve their own position. This might be through an app to improve home safety, a discount for prudent driving, or an option to manage all private contracts (including outsourcing) on the insurer's portal, or to purchase cloud storage via insurance.

In other words, paying for insurance in data may only be extending an existing trend. But would it really be conceivable? What would it be like?

A model of insurance provision

At the very least, attributing value to the data exchange would attract the attention of potential new customers. These new customers might immediately expect to see the benefit through an application and underwriting process that is short and simple. The combination of new data sources such as location, social media or data from wearable devices with more traditional third-party data services can make this immediately possible for some product lines.

As the data exchange continues, companies will have rich information about customers through the data they provide. The value add services insurers could provide could also encourage policy holders to see this as a long term relationship and are less likely to switch based on price alone at renewal. As the revenue model for these early adopters develops, companies would need to reduce operating and administrative expenses as much as possible. The product should therefore exploit low-cost digital channels, which provide personalised interactions with customers to meet the ever-increasing expectations.

> The race is on to acquire information that would provide insurers with sustainable, risk-bearing and monetisable knowledge.

Insurers would also have to develop a clear data strategy and carefully consider what data they would like from customers, and what value the data can provide to both parties. They also need to consider the practical challenges of acquiring, managing and analysing the data. The race is on to acquire information that would provide insurers with sustainable, risk-bearing and monetisable knowledge. Just think of the data sources that are relevant. Could it be fitness trackers or other wearables, connected cars, smartphones, smart homes or any other sensor connected to the IoT, especially if it could supply real-time data? This real-time streaming data can have momentary value that could be lost without the ability to apply AI models in an agile way. AI only exists because of data. Think carefully about what you want AI to do for you in the future, and work backwards to identify the data you need to train your AI models to be the smartest in the algorithm economy.

From additional paid service offerings, through advertising and cross-selling, to cooperation, there are plenty of options. Is this the future for insurance? This is not clear, but it is an interesting idea.

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