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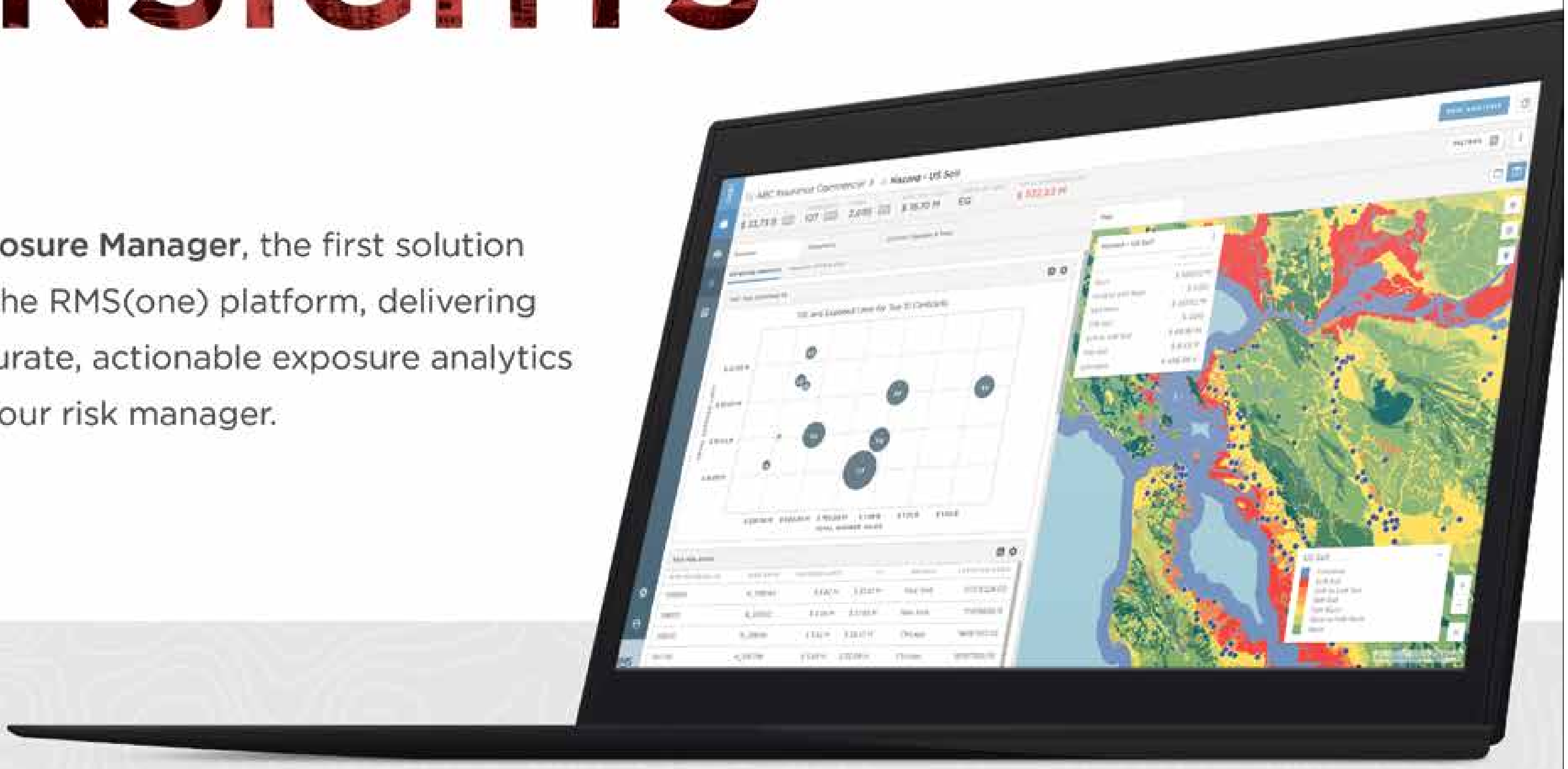
FUTURE OF INSURANCE



FUTURE OF INSURANCE

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Blowing away the dust and cobwebs

The insurance industry is at last shedding its staid image to move with the times and embrace technology to offer clients a superior service

OVERVIEW
ANTHONY HILTON

Insurance companies have long cultivated the image of being solid, well-established and dependable, that they are islands of stability in a world which is anything but. They have to. The essence of their business is they help their customers manage and share risks. Such customers have to believe the organisation will still be around when the time comes to pay out on claims.

The image has served the industry well for 300 years, but more recently its downsides have also become more apparent. Sometimes, to the modern eye, insurance has seemed too wedded to tradition. Its desire for continuity and stability has brought a reluctance to embrace change. Faith in the old ways meant it failed to respond to customers who were growing impatient with the resultant costs and inefficiencies.

But it has now been forced to adapt. The world has changed hugely in the last 30 years and the value of a modern global business lies much less in physical assets that can be insured against flood, fire and theft.

Today the worth of a business is much more intangible and much harder to value; it lies in the knowledge of the workforce, the quality of the supply chain, the uniqueness of the intellectual property, the strength of customer relationships. The risks come in threats to these and in new areas, such as cyber attack or loss of reputation. Devising policies which meet clients' needs has required a fundamental rethink.

Even without this client pressure, the industry would have had to respond to a hostile external environment. The past decade has been an unprecedented period of downward pressure on rates. The low interest rate environment has caused a collapse in investment income; there is additional competition from new capital entering the industry from outside. And on top of everything else, post-2008 there has been a tidal wave of regulatory change.

> For the first time technology is reaching levels of sophistication where it can be applied much more widely

Of course, insurance has always been cyclical and this was both a strength and a weakness. Periods of relative prosperity would bring in more competition and push down rates. Reserves would be run down, then when disasters finally hit, the huge sums which had to be found to pay claims would act as a trigger for rate hikes.

Unfortunately, even in tough times this acted as a brake on radical change because there was always a belief that things would turn up again before too long, as they usually did. But that is another reason why it is different this time. Today's squeeze is of a different order of magnitude. Rates have been in decline now for at least ten years.

At the same time – and this is what perhaps has made the fundamental difference – the insurance market has become more integrated with the other capital markets. This has brought a wave of new risk transfer products designed to appeal to pension funds and other patient capital, which has noticed insurance offers higher returns than other financial markets. This in turn has led the belief that the cycle will always be the same again because, even in bad times, new capital is coming in.

Meanwhile, the hit to insurance company profitability inherent in rock-bottom rates and low investment income has been disguised by running down reserves, perhaps to dangerous levels. Indeed, only last month the Prudential Regulation Authority felt obliged to warn that it felt some in the industry might be going too far given that reserves have fallen now every year for 15 years.

In this environment it is inevitable that the industry would look for ways to cut costs and to embrace new ways of working, and while critics argue this should have happened years ago, in the industry's defence the technology was not there. Unlike banking, where transactions can be standardised and therefore lend themselves to computerisation, insurance policies are tailored to individual needs. Only in motor insurance, where there is scope for standardisation, has technology become the norm.

But more will follow because for the first time technology is reaching levels of sophistication where it can be applied much more widely, and this is what is happening, both among traditional players and in fintech firms' intent on industry disruption. On the process side major projects are under way to deliver connectivity with the thousands of agents and clients the industry has around the globe. Within firms progress in areas such as big data and blockchain is transforming risk assessment and selection, collection and verification of information, and pricing.

The big question still unresolved is what role will the individual have in this? How much of insurance will become tech-driven? Can the industry still add value through advice and personal relationships, and if so how will it be rewarded? Will there still be a role for people delivering quality advice or is the future entirely about price? Read on.

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INTERNET OF THINGS

HELEN YATES

Track drivers to cut the cost of policies

Are consumers reluctant to adopt telematics, wearables and other insurance products based on the internet of things or are insurers themselves behind the curve?

It's 2025, early evening and you've just left the office and got into your car to head home. You remotely turn up your home thermostat to ensure it is warm upon arrival and your car telematics device quickly assesses the best route. You reverse carefully, mindful that good driving behaviour earns you discounts on your insurance premium. You get home with time to spare for a 20-minute run, recorded by your activity tracker, and noted by your life and health insurer.

This is one vision of the future in which the internet of things (IoT) promises to transform the way consumers behave and interact with their insurance providers. It is a vision that today's telematics and wearable device providers are striving for. But there are significant hurdles to overcome before the industry can progress along this digital journey, not least of which is whether consumers are willing to share so much data about themselves.

Telematics, or black box insurance, has steadily grown market share in the young driver segment, where customers are happy to have their driving behaviour monitored in return for lower premiums. But it has yet to make significant inroads into other market segments. For consumers, it's a question of "what's in it for me", says Jamie Macgregor, senior vice president of Celent's Insurance Practice.

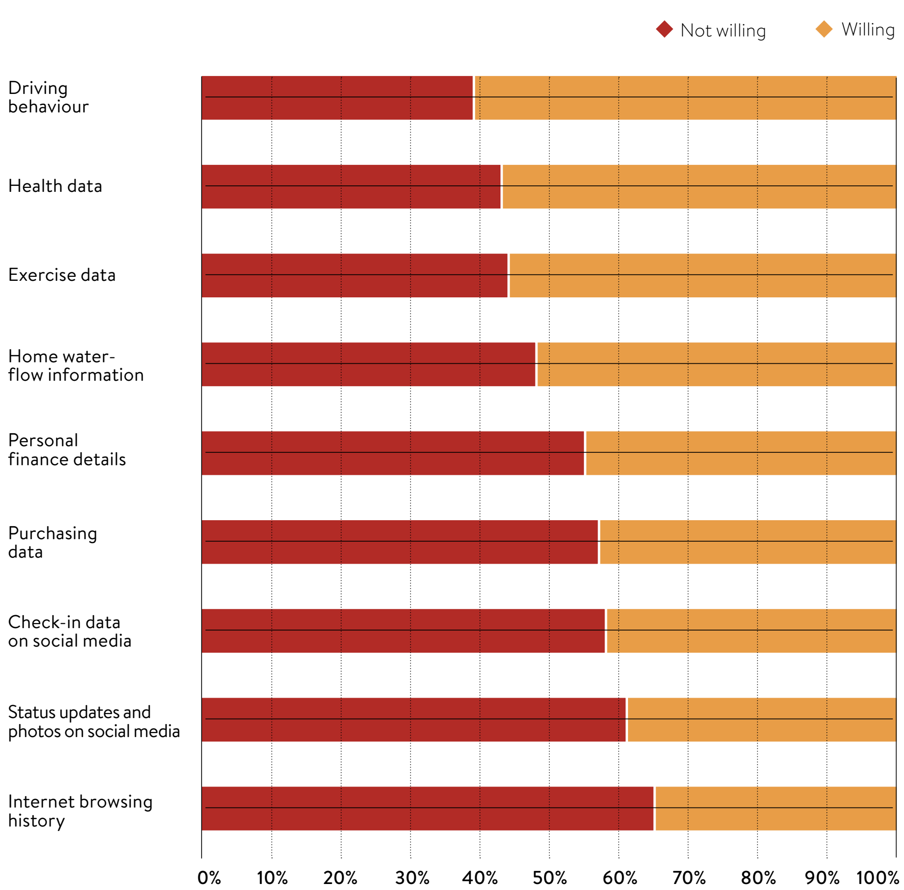
A lower premium is the first answer, particularly for young drivers where the cost of insurance for under-25s is eye-wateringly high. "Insurance is cost driven, and there are a lot of things you can do with different segments to reward loyalty, aid retention and make it a fun experience, but these things are modified factors," says Selim Cavanagh, vice president of telematics at Wunelli. "At the end of the day motor insurance is a compulsory purchase and we all know from aggregator research that 90 per cent of buyers go for the quote which ranks at the top of the aggregator site, because cost is the most important factor."

Safety is important, of course, particularly for young drivers and their parents. Research suggests the existence of a telematics device can reduce the risk of accidents by up to 30 per cent. "The risk we write isn't the risk we keep, we make our drivers safer still," says Charlotte Halkett, group marketing actuary at insurethebox. "Safer driving is fewer accidents and the way we operate is to reward them for that."

Brand is expected to play a progressively more important role in encouraging individuals to share their data. But a generation that has grown comfortable with sharing data with trusted brands, such as Facebook, Amazon and Google, may not feel the same way about its insurance carriers.

"Insurers like the IoT because it creates an opportunity to have a more frequent advisory relationship with the customer that they don't have today, hopefully reinforcing brand and with it customer retention. And that promotes good risk behaviours, which is good for the underwriting result," explains Mr Macgregor. "But to get to that trusted position you do need to invest in brand, and show you are acting and behaving honestly with your customers' data."

CONSUMERS' WILLINGNESS TO SHARE DATA WITH INSURANCE COMPANIES



Source: Celent 2016

This is best achieved through a carrot rather than stick approach to risk. Customers who are penalised with curfews and higher premiums will be less incentivised to part with their data than those whose behaviours are reinforced through "positive messaging", says Mr Macgregor. And perhaps surprisingly, less is more from a feedback perspective. "The more information you communicate to your customer about their digital behaviour, the greater the risk is in turning people off," he explains. "It may feel a bit too much like big brother is watching and people are generally not that interested."

Rewards offered by health, motor and home insurers need to vary depending on the customer. While a young inexperienced driver may appreciate constructive feedback on their driving behaviour, this is far less likely to be appreciated by a seasoned motorist. Here, discounts and other benefits, such as accident response, emergency breakdown assistance and fraud prevention, could be more compelling for the customer.

> Safer driving is fewer accidents and the way we operate is to reward them for that

But what if the barriers to adoption of wearables and IoT-connected devices are not down to a lack of consumer appetite, but a result of issues that are not being addressed by insurers? "Longstanding insurer models, legacy systems and relationships are major barriers to full adoption," says David Hill, founder and managing director of Advent Solutions Management. "For that to happen, insurer models and relationships need the infrastructure and the mindset.

"IoT is arguably as much a threat as it is an opportunity as young entrepreneurs unencumbered with legacy issues nip in and take their business. However, while established insurers are not as agile as newer players, they are experienced and business savvy and many are investing in IoT to discover what is really possible."

Kevin Roberts, broker and affinity director at Legal & General, thinks that ultimately the challenge for insurance players is to work collaboratively as new technology emerges. "Finding solutions together that ensures data and technology can be used when required is paramount. We must remain curious and entrepreneurial," he says.

However, high expenses are a major impediment for insurers seeking to offer customers competitively priced IoT-based products. "The biggest barrier in telematics is the cost of data collection," says Mr Cavanagh. "Clearly the young driver segment is a big success in the UK, but it helps the business case that the cost of young driver insurance is relatively high compared to the norm. Therefore, there's enough money to pay to install a device that will collect the most data."

Smartphone apps are one way of reducing the cost burden. However, there are limitations to the level and accuracy of data that can be collected this way. "There is such a variation of different products available," says Ms Halkett. "And there's not a simple solution for data portability. We are talking to other insurers about that, but because there are so many different models for telematics, it's really not simple. What we do with our data is completely different from what an app provider would do."

Mr Cavanagh concludes: "Seventy eight per cent of motorists think the price they pay for insurance should be linked to driving behaviour. There are some structural changes needed in the insurance industry for that to happen with pricing, but customers are very clear about what they want, and for me that feels like a win-win. I don't think the whole market will go telematics next year – it won't be one big bang, but there will be constant significant growth."

COMMERCIAL FEATURE

INSURTECH: UK REGULATORS AHEAD OF THE GAME

A number of factors are driving disruption in the insurance industry, posing a major challenge for the regulators – a challenge the UK regulators are rising to with gusto, says ***Helen Chapman****, an insurance partner at law firm Hogan Lovells*

Hogan Lovells

SO WHAT ARE THE FACTORS DRIVING THE DISRUPTION?

01 MAJOR SOCIETAL CHANGES

In the retail insurance space, consumers are more connected than ever, via a multitude of devices and through multiple platforms. This has two consequences: first, consumers increasingly expect a much better, smarter service. "People are frustrated with a clunky process for buying insurance, and want an easier and quicker process through simple digital channels," says John Salmon, a technology partner at Hogan Lovells.

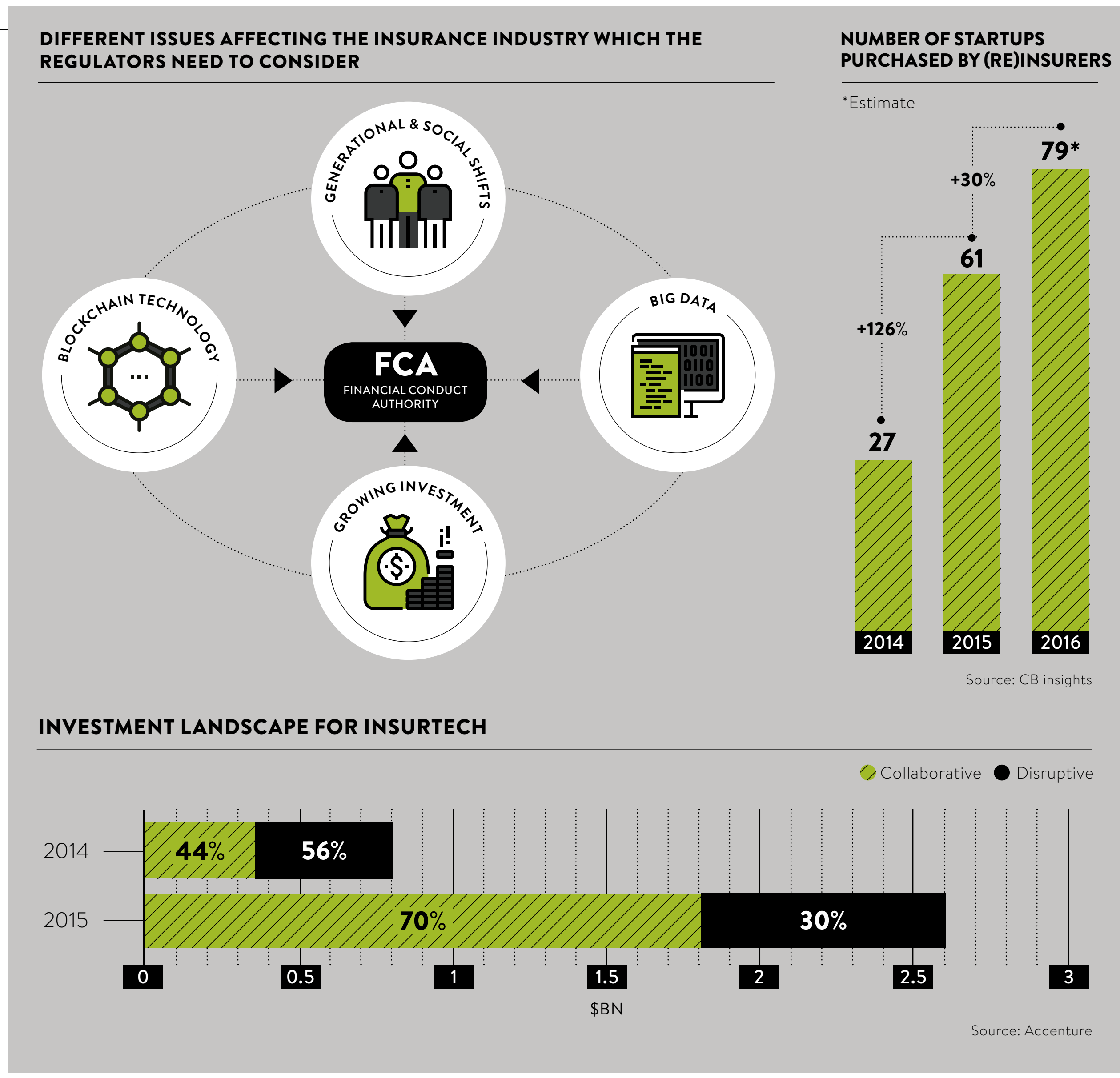
Second, a larger proportion of consumers fall into Generation Y or the millennial generation: these individuals are less likely to own property or cars, are less attracted by life assurance and are looking for more tailored cover they can buy easily and quickly. They are attracted by the sharing economy. Helen Chapman, who runs the insurance policy wording unit at Hogan Lovells, is seeing an increase in demand for insurance products to be designed on a modular basis, allowing customers to purchase just the cover they need at a price which is calculated on the basis of actual customer data. Customers are no longer interested in annual policies which might cover them for risks they do not run.

02 BIG DATA

As the FCA (Financial Conduct Authority), the UK's conduct regulator, has said, big data "can be used by firms to transform how consumers deal with insurance firms, allowing firms to develop new products as well as reducing form-filling, streamlining sales and claims processes". It also allows insurers to price risk more accurately. This is a major opportunity for insurers, which they are seeking to capitalise on through the use of technology: telematics in motor insurance; wearable tech in life and illness insurance; intelligent home technologies for property insurance.

03 NEW TECHNOLOGY

The new technology available to insurers and intermediaries is revolutionising the way they run their businesses. Artificial intelligence technology, such as robo-advisers and chatbots, can increase efficiency and improve customer experience. Drones have the potential to cut costs involved in inspections for claims purposes. As insurers amass more and more data, in particular from connected devices, data analytics tools allow insurers to use their data in a smart way and gain valuable insights into customer behaviour and trends. Often, cloud computing underpins the use of these other technologies. And not forgetting blockchain technology, which has the potential to transform the insurance industry, but which insurers and reinsurers are just beginning to consider seriously.



04 AVAILABILITY OF CAPITAL

A feature of the insurtech phenomenon is the mountain of capital available from interested venture capital and private equity firms as well as established insurance market players. This is fuelling a boom in innovative startups.

WHO ARE THE DISRUPTORS?

Not who you might think. While there are many startups vying for a piece of the pie, much of the innovation is being driven by incumbents: large, often global players in the insurance markets. All the major insurer groups have their own accelerators or incubators, mentoring and investing in innovative ideas either for products or means of distribution. Many reinsurers are investing heavily in these sorts of ventures because they see the mining of the data that they have access to over broad market segments as key to their future success. One of the challenges, however, is the cultural shift that is needed for a traditionally risk-averse organisation to truly embrace innovation and creativity.

Alongside the might of the incumbent insurance and reinsurance groups are the innovative startups, often funded by venture capitalists. What they might be lacking in experience, they make up for in agility.

The ability for technology to shake up the insurance distribution chain has attracted non-insurance brands into parts of the market too. Insurers and intermediaries are facing off to major players from other areas, including technology providers, and manufacturers of cars and consumer electronics. While some incumbents view this advancement as a threat, others have been welcoming the opportunities this could bring and otherwise unlikely partnerships have been forming.

> "The scale and pace of change in the industry presents a significant challenge for the regulators

REGULATORS: RUNNING SCARED OR EMBRACING THE FUTURE?

The scale and pace of change in the industry presents a significant challenge for the regulators. The FCA has commented that it sees change as the new normal and is embracing it. The FCA has actively sought ways of ensuring it meets its objectives, which include ensuring the relevant markets function well and protecting consumers.

In order to do this and ensure that regulation remains relevant to the new normal, it initiated Project Innovate in 2014, including an Innovation Hub, which Mr Salmon describes as "extensive 'sandbox' testing, enabling innovative insurance businesses to take part in assessments of how they meet regulation, without fear of penalty". It promises to provide fast, frank feedback on the regulatory implications of financial firms' technological development. Working closely with firms in this way gives the regulator the information it needs to tailor its regulations to the new business models.

Alongside the Innovation Hub, the FCA is actively considering issues such as big data to understand the use of data by firms better, and how this affects consumer outcomes and competition.

Even more noteworthy is the FCA's international engagement. It has co-operation agreements with a number of overseas regulators (Australia, Singapore and Korea), with the aim of promoting the UK as a centre for innovation in financial services.

These activities are in stark contrast to other regulators around the world. Lawyers in Hogan Lovells' international insurance practice have remarked on the progressive steps being taken by the FCA compared with those in their jurisdictions. There are few local regulators that are taking as pro-active an approach as the UK regulators. However, as already mentioned, some other jurisdictions are co-operating with the FCA and positive steps are also being taken in Hong Kong. In the United States, a House Bill was introduced in September with the expressly stated aim of keeping the US from losing financial innovators to the UK's regulatory sandbox.

It is clear that we are witnessing a watershed in both the insurance industry and the relevant regulation.

For more information please visit www.hoganlovells.com

OPINION COLUMN

Innovation for the customer's good

Regardless of technical innovation, ethical standards must remain relevant to the insurance industry and meaningful to customers

SIAN FISHER

Chief executive
Chartered Insurance Institute

"Just as species evolve, so too do markets, products and professions. People often confuse evolution with progress and see a successful species as if it were the result of a designed process with a predefined outcome. It is easy to assume that all evolution is positive, rather than random adaptation to suit the prevailing environment.

But innovation doesn't need to be random. Just like evolution, it is driven by environmental pressure to differentiate and successful innovations will breed followers. But we can choose the types of innovation we want to encourage, rather than leaving it to random chance.

Insurance began in the 17th century as a very simple concept. A single ship owner couldn't risk their entire livelihood on the chance of a shipwreck, so they would pool the risk with a wider group. That was truly innovative, transparent and suited all the parties involved.

The pooling of risk is still at the heart of all insurance, but it has iteratively developed to meet customer demand for new types of cover, ways of buying and servicing. Regulation has established safety nets and professional standards have given those working in the profession a framework to work within and the expertise to do it properly.

The future of insurance will doubtless look different from today. There will be new things to insure and new ways of insuring them. But we have the opportunity to set the standards by which success should be measured and help encourage innovation that takes us in that direction.

What do standards look like for something such as insurance? They are not the same as regulations. Standards need to complement regulations; they form the basis for a progressive, customer-focused ethical approach, rather than an enforced set of minimum requirements.

Without clear standards, innovation doesn't automatically benefit the customer. Even where it ostensibly responds to a customer demand, such as to reduce prices, it needs to be joined up with a holistic understanding of the entire customer offering. Cutting price by removing cover or reducing service standards is as bad as increasing price to include irrelevant cover, even if it appears to answer the customer's primary demand.

Even though at its heart risk-pooling is very simple, modern insurance can seem complex, confusing and hard for customers to engage with. So it's harder for customers to see where innovation benefits them.

So we need simple standards that customers can understand and care about, and which establish a level playing field for insurers and insurance brokers. This provides a context and environment for prioritising innovation.

And it means companies with technological skills can collaborate with companies with financial and customer skills with a common understanding of what the solution needs to look like for the customer.

Industries that we tend to think of as innovative also tend to be the ones with customers who are involved in the innovation process. Being open source requires common, transparent standards. Of course, not all innovation is technological, far from it, and nor should the new way of doing things be chosen 'because we can'.

True innovation starts with an insight into what the customer actually wants or needs, then moves to finding a way to achieve that. The customer is, of course, always right. But for the customer to know what they want, simple, transparent products, processes and information are needed, and that's down to the professionals to make happen.

As a professional body, the Chartered Insurance Institute has a responsibility enshrined in a Royal Charter to "secure and justify the confidence of the public" in insurance. One way of doing that is to make sure that anyone employed in the profession, who designs, sells, services or advises on insurance products, has the right expertise to do that competently.

But critically it also means setting and driving an ethical approach for those professionals to sign up to. Our challenge is to make sure those ethical standards remain relevant and meaningful to customers today and in the future, regardless of the technological advances that shape the look of the products and services customers see."

Can Lemonade be toast

Innovation, essential for the insurance industry to adapt and
by bringing in outsiders with a new approach to the business

INNOVATION CULTURE
CLARE GASCOIGNE

ABOVE Shai Wininger (left) and Daniel Schreiber, co-founders of Lemonade, the world's first P2P insurance company
BELOW Screenshot of the Lemonade app, powered by an AI chatbot

A month ago, a new start-up was launched in New York. It was funded by Sequoia Capital, which put in a cool $13 million, one of its largest-ever seed investments.

And the innovative new venture that caught the attention of one of the world's leading venture capitalists? An insurance company called Lemonade.

"What's happening in the industry is a massive wake-up call," says Andrew Brem, chief digital officer of Aviva. "The concept of insurtech really took off last year."

Lemonade may be the latest disrupter in an industry that is still more likely to be thought of as traditional, but is unlikely to be the last. According to the Association of British Insurers (ABI), the insurtech financing trend is about to explode from $197.1 million in 2013, $556.5 million in 2014 and $831.5 million in the first five months of 2015.

Writing about the changing world, assistant director and head of strategy at the trade body, Matt Cullen, says: "The moment is fast approaching when Silicon Valley throws everything at scaling an innovative insurance business to the mass market."

> "If long-established carriers are going to succeed in an increasingly digital market, they have to become innovators"

Insurance, of course, is not the first industry to be disrupted and it is customers, who have learnt new ways of interacting with businesses and are partly driving the change. There have been some regulatory pressures encouraging the industry to make their services focus more on the customer and there have been business pressures, as comparison websites drive down margins and make insurance increasingly competitive.

Such disruption is prompting a lot of soul-searching in the industry, which is often considered to be one of the slowest to adopt new ideas and techniques. "The industry is very aware of the problems and the opportunities," says Jonathon Howe, UK insurance leader at PwC.

Changing the culture of an industry from traditional to innovative is not easy. But according to Jean-François Gasc of Accenture: "If long-established carriers are going to succeed in an increasingly digital market, they have to become innovators. Fence-sitters and imitators just won't make the grade."

So how do you innovate in a mature and traditional industry? Mr Gasc has a checklist that includes shaking up the leadership, securing funding, thinking like a startup, investing in startups, bringing in new talent and changing processes. But it's easier said than done; there is pushback, as with any major cultural shift, if innovation is to be embraced.

One way is to start afresh completely. Friendsurance, a German company, was one of the earliest to translate the concept of the sharing economy into peer-to-peer insurance, setting up in 2010. But you don't need an entirely new company to innovate; the big UK insurers are setting up innovation hubs, such as Liverpool Victoria's UX Lab, which tests the user experience. Set up like a consumer's living room, it allows the insurer to trial a digital experience under "normal" conditions, when distracted by television or other people.

Meanwhile, Aviva has set up The Garage, a digital hub based in Hoxton, east London; there is also a Garage in Singapore. It has deliberately gone for an urban, post-industrial feel: bare brick walls, sofas made out of pallets, heating and ventilation pipes on show. Working methods are informal, with small teams looking to test and bring products to market quickly; the suit-and-tie mentality is not in evidence.

"It had to be a greenfield site, set up separately to give it space to breathe, but we are reinventing the entirety of Aviva and The Garage gives everyone the licence to come out of their shells," says Aviva's Mr Brem.

Key to changing the culture is bringing in talent from outside the industry. "We have recruited digital designers, user experience and interface designers, customer analysis experts, innovation experts – historically not people we have had in our business," he adds.

Aviva is not alone. Indeed, the entire insurance industry is having a rethink about its talent pool. It recently joined an initiative, HeForShe, created by UN Women, that aims to improve gender parity. Speaking at the launch, Huw Evans, the ABI's director general, said: "We have a huge amount to do to ensure we attract women to our industry and keep them here. Improving our sector's diversity and inclusion is vital to our future success, not a 'nice to have'."

Elsewhere, the Chartered Insurance Institute has been working on making insurance more attractive to school-leavers, taking a *Discover*

Lemonade

of the industry?

prosper, must come from within, but also

Lemonade

Risk game into schools and colleges, and launching a new apprenticeship website.

"There's been a real recognition that we need a more diverse workforce, more and better talent," says PwC's Mr Howe. "We're starting to see that building it ourselves is not the best way forward."

A well thought out intern programme can reap significant benefits, but bringing in people with skills from outside the insurance sector is a cultural shift that applies at every level. Chief executive of Legal & General, Nigel Wilson, was chairman at retailer Halfords, while Stephen Hester at RSA Insurance Group was previously chief executive at RBS bank.

It is critical that the innovation culture stems from the highest point; 87 per cent of respondents in a 2015 Deloitte survey agreed that leadership was important. Yet only 33 per cent believed their leadership pipelines were ready, giving a clear indication that the industry still has work to do to navigate the challenges.

Moreover, the same survey found that only a third of insurance companies consider their organisations ready with the skills and abilities required to meet their business needs. It's not only a question of bringing in outsiders, but developing existing staff to meet the needs and expectations of millennials.

"Two thirds of insurance companies surveyed indicated that they saw their capabilities as 'weak' when it comes to providing social or mobile learning, or using advanced media, such as gaming or simulation," according to a Deloitte report, *Human capital trends in the insurance industry*. It says: "These tools are vital to real-time learning, matching the pace of life-business for today's society and appealing to the increasingly millennial workforce."

Deloitte argues the industry needs to design training programmes that better match the way younger people learn, using claims scenarios, catastrophe situations, department of insurance presentations and agency sales simulations, which would accelerate performance faster than the more traditional learning methods.

It's an innovative concept we can all drink to – even if only in lemonade.

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TOP 10 TRENDS SHAPING INSURANCE IN 2016

1 INCREASED USE OF INTERNET OF THINGS BY INSURERS

2 AUTO INSURERS SHIFTING TOWARDS USAGE-BASED INSURANCE

3 USING BIG DATA TO IMPROVE CLAIM PROCESSING CAPABILITIES

4 ENTRY OF NON-TRADITIONAL FIRMS IN INSURANCE

5 INCREASED USE OF AERIAL AND DIGITAL IMAGERY

6 FOCUS ON GAMIFICATION OF PROCESSES

7 INCREASED DEMAND FOR CYBER INSURANCE

8 EMERGENCE OF PEER-TO-PEER INSURANCE

9 USAGE OF MHEALTH APPS BY INSURERS

10 FOCUS ON CUSTOMER-ADHERENCE APPS

Source: Capgemini 2016

COMMERCIAL FEATURE

LIFEGENIE IS OUT OF THE BOTTLE

A new web-based service can analyse existing customer data and prepare a personalised life insurance quote to match today's fast-moving digital world

A growing gap in the insurance advice market has left millions of people underserved when it comes to life cover and their wider financial protection needs.

Banks have retreated from offering face-to-face advice, mortgage advisers have less time available to talk about life insurance and a growing number of independent financial advisers are more focused on higher-net-worth clients.

About 8.5 million UK adults with dependents do not have any life cover in place. The result is that consumers are exposing themselves and their families to significant risk of financial ruin as they fail to take out life, critical illness or income protection cover.

The question is how can the financial services industry reach out to those customers it has failed to engage.

Specialist software provider iPipeline believes the solution lies in using digital technology to unlock customer data and nudge them to explore their protection needs at the relevant time.

The company has developed LifeGenie, a data-driven approach that allows financial institutions to change dramatically the way consumers can be introduced to and engage with their protection needs, triggering them to take action.

Its starting point is the recognition that the internet is part of the fabric of daily life, for shopping, banking and leisure, where users expect a quick and simple process that provides a personalised solution to meet their needs.

Yet, traditional methods for selling life insurance have not kept up with the pace of change in technology.

A web-based service, LifeGenie, uses existing customer information and speedily puts together an offer that is tailored to them. It can be used as part of a face-to-face meeting, a visit to a customer-facing website or a targeted e-mail campaign, providing an illustrative price at the touch of a button.

Ian Teague, iPipeline UK managing director, says: "As a business you already know a lot about your customer and we can help use that to put together an accurate offer, in an instant, that is relevant to them.

"For instance, as a bank, you might be talking to them about their mortgage application, a financial review or setting up their own business, while as a financial adviser you might be talking about pensions or inheritance tax planning.

> As a business you already know a lot about your customer and we can help use that to put together an accurate offer, in an instant, that is relevant to them

"However, as we all know, after a lengthy chat about a mortgage, it can be difficult to find more time to talk about life insurance. LifeGenie automates the transition into a protection conversation, saving the adviser and client valuable time."

There are millions of financial interactions conducted every year where better tools could aid discussion on protection, and enable a quick and smooth purchasing process.

LifeGenie can be deployed anywhere – wherever the greatest number of pertinent clicks are found – whether in a branch, via an e-mail campaign or on a website, offering a click through to an insurer's website for a more detailed quote.

Mr Teague says the financial services sector has invested a lot of time and money in building attractive and user-friendly websites, but somewhere along the way has lost sight of the need to drive customer traffic to those sites in the first place.

"We can provide a nudge to customers and to advisers to have that conversation about the benefits of life cover, and a realistic illustration of the cost," he adds.

Given the financial pressures many businesses are under, Mr Teague recognises they are cautious about additional investment, but he stresses that LifeGenie, delivered through a software-as-a-service (SaaS) model, is a cost-effective way of engaging with customers and one that complements rather than replaces existing sales processes.

It has been designed to be agile and flexible, allowing users to adopt a test-and-learn approach as they figure out the best way of reaching existing and new customers, and offers them the capacity to increase scale when appropriate.

Mr Teague says: "LifeGenie can help nudge customers to get them on the journey to buying life cover and, if the experience is engaging and relevant, we know that it will result in better conversion rates."

To find out more visit www.ipipeline.com/uk or e-mail Ian Teague at iteague@ipipeline.com

IPIPELINE® INSURANCE ACCELERATED

Needed change is comi

New ideas are melting the permafrost on a frozen industry and,

NEW ENTRANTS
DAN BARNES

Consultancy PwC has found that while 74 per cent of insurance companies believe at least some part of their business is at risk of disruption, 32 per cent do not engage with financial technology (fintech) firms on any level. The report notes that insurance is heavily reliant on call centres – 78 per cent of clients contact companies by phone – and yet, despite a high expectation of changing customer habits, they are "reluctant to establish strong relationships with fintechs" lagging the banking sector by some measure.

Economic pressures may change this. As the capacity to capture data in the car and at home through telematics allows real-time analysis of risk, there may well be a further tightening of revenue streams in the future. Insurers are beginning to look at prevention over protection, making the capacity to analyse data in real time more important.

Yet there appears to be a mismatch in the amount of insurance-based fintech activity taking place relative to the insurance need, says Tony Boobier, author of the book *Analytics for Insurance: The Real Business of Big Data*.

"Insurance places much more focus on the whole concept of new offerings and on better data and analytics than the fintech companies are providing," he says. "It's interesting that insurers have recognised that all this data is out there, both structured within their organisation and unstructured, but haven't really figured out the best way of getting value from that data."

The insurance business model is more straightforward than the labyrinthine capital markets, in which regulatory change is creating multiple points of opportunity for nimble tech startups with a good idea. Insurance businesses traditionally make profit through both investment and profitable underwriting. However,

> While traditional insurers have a limited use of digital technologies, some are engaging in order to provide better customer engagement

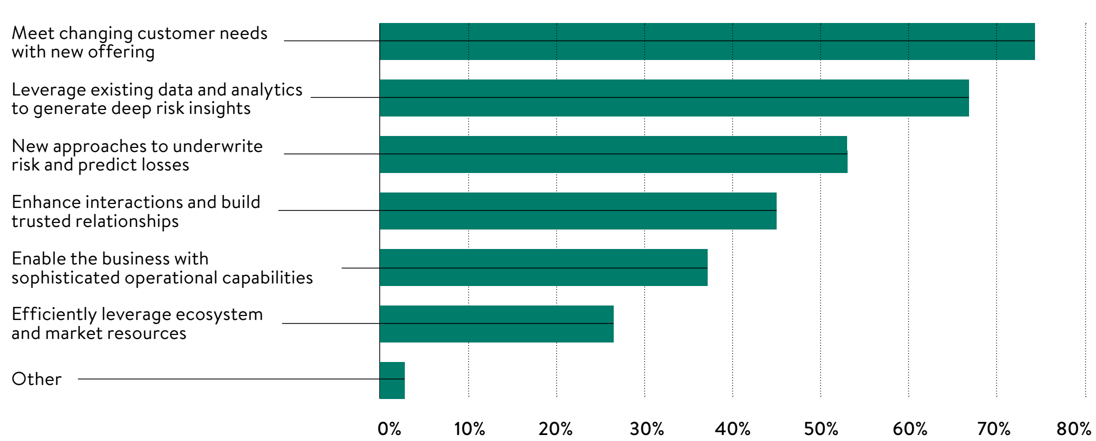
that model is under pressure. The investment return is close to drying up as negative rates and volatile secondary markets challenge valuation of the long-term investment instruments traditionally used.

"Scrutiny is on the underwriting side and this comes at a time where there is far too much capacity," says Adrian Rands, chief executive at QuanTemplate, a fintech firm founded in 2012 focused on pooling, normalising and analysing data. "There are more insurers than there are clients and so there is a lot of pricing pressure, so making an underwriting profit is also incredibly challenging."

Equally, the insurance business is not homogeneous. Products span time periods from that of a holiday to that of a lifetime with enormously varied values and conditions surrounding a pay-out. While that may be less complex than capital markets, it certainly creates opportunities for disruption.

Fintechs typically work either by augmenting a traditional player or by competing with it. Aurélie L'Hostis, analyst for e-business and channel strategy at Forrester Research, notes

AREAS WHERE INSURERS SEE THE MOST IMPACT FROM FINTECH



Source: PwC 2016

ng but it's slow arriving

despite a glacial pace of change, disruption is trickling down

Friendsurance

Employees at German insurer Friendsurance, which gives cashback to customers with no claims and reduced cashback for small claims

FUTURE OF INSURANCE

40% of UK insurers are already partnering with non-insurance companies or regard this as a high priority

46% are working with startups and external partners or have prioritised this

Source: Accenture 2016

that while traditional insurers have a limited use of digital technologies, some are engaging in order to provide better customer engagement.

"We see it to offer more relevance, tailored on demand insurance coverage," she says. "Not a huge number need this, but some do, such as Trōv, which provides it for small assets like electronics. That is something that could reshape the whole industry in the future."

Trōv, founded in 2012 as an inventory app for a phone, is launching on-demand insurance for items for fixed periods of time by partnering with insurers SunCorp in the United States and AXA in the UK, providing the insurance part based on valuations carried via the app. It is expected to launch in the US in 2017.

Other firms are rivalling traditional players. Friendsurance.com has launched a peer-to-peer (P2P) insurance product in Germany that groups customers into pools, with cashback for pools with no claims and reduced cashback for small claims, which are paid for out of the pools. Claims that go beyond the pool size are settled by the main insurance firm.

"We looked at insurance and saw a huge opportunity because there was so little change and so little innovation that our hunch was there must be a ton of things one can do better," says chief executive and co-founder Tim Kunde. "We were able to make a connection between insurance and social networks, and that's how we developed our P2P approach.

"With this we have a lever to drive in and make a change. The peer-to-peer approach can reduce costs and can thereby reduce premiums. It can make a difference."

In the UK, firms have faced disruption from new business models before: direct insurance in the 1990s and in the last decade insurance comparison websites have driven margins lower. Yet having bought British price comparison site BeatThatQuote.com in 2011, Google found not every model can be driven further, especially where the agreement of the industry is needed.

> "As new ideas filter down through the business, it is likely change will occur and those firms driving innovation can control the direction of that change

Google Compare, as the service was branded and brought to the US, was discontinued as a business line in March this year. One source noted that the impact of price comparison on UK margins may have dissuaded US insurers from contributing, where UK institutions had originally perceived it as a way to expand market share online. "No one buys the more expensive quotes regardless of the concept of service," says Mr Rands.

For firms trying to disrupt without the co-operation of the insurance market, there are other challenges. Ms L'Hostis says: "Some startups have very niche use-cases and start at a small scale one, for example in the US they begin in just one state before expanding. They start at a small level and try to rescale, which proves to be quite challenging. In a way they don't pose a threat to insurance companies yet, but they are opening the market and contributing to its shape."

The nature of insurance pay-outs and the potential delays that can stem from disputes is another factor, for instance claims for asbestos-related cases can have assets held against them for 20 years without a pay-out. Also, policies may only be changed annually at most. That makes the window for disruption quite small. Scaling and distribution were a big topic for Friendsurance, says Mr Kunde, where the slow-moving nature of competitors proved to slow the pace of change, rather than slowing the competition.

"In a way you could expect it makes it easier to break into, but actually everybody is slow," he says. "The carrier is slow, but still they have a lot of money and the competition is high. And on the other hand, the customer is slow so it's really difficult to activate customers and acquire them."

Nevertheless, as new ideas filter down through the business, it is likely change will occur and those firms driving innovation can control the direction of that change, says Mr Rands.

"I wouldn't say that [insurers] are looking to react very quickly, it's not something insurers do," he says. "But the message now is very consistent across the industry that the reform of the way in which they trade is necessary and technology is going to be the way in which they evolve."

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Improving image and service...

Technology and new platforms offer insurers the opportunity to get closer to their customers, and provide a personalised and improved service

CUSTOMER EXPERIENCE

CLARE GASCOIGNE

There can't be many people who want to be insurance salesmen when they grow up. Train drivers, yes; chefs, perhaps; DJs and Olympic gold medalists, understandable. But insurers?

Perhaps one reason is that most of us only encounter insurers when we have a problem. Research from Accenture shows that nearly a third (30 per cent) of insurance customers have not had a positive experience.

The industry is well aware of the problem. According to the Association of British Insurers (ABI): "For an industry full of people passionate about making a difference for customers, it is extremely disappointing that the sector has so badly failed to secure their trust."

So what can be done to improve the customer experience? Digital technology has been cited as the answer to solve not only some of the consumer's most hated aspects of insurance, such as the speed of a claim, but more importantly to offer new experiences that will change how we look at insurance.

"Digital transformation isn't simply about insurers making better use of technology," says John Cusano, senior managing director, global insurance industry, at Accenture. "It's about enabling their people to accomplish more with technology."

The digitisation of insurance has been happening for some time. Consumers, evermore demanding of ever-higher standards of service, are looking for the same kind of experience they can now find elsewhere in their life. They want an unprecedented level of choice; they want price transparency; they want immediate answers to questions.

> Instead of developing and selling products, it means working backwards from customer needs and expectations

Dutch general insurer InShared was one of the first of the new breed of companies to be a fully digital insurer, offering a virtual assistant on its website from 2012 that answers 56 per cent of the company's non-claims customer contacts. From initial quote to making a claim to booking any necessary repairs, everything can be done online, which keeps costs low and makes the customer feel in control.

But established insurers have been slower to meet the challenges of this brave new world, hampered partly by legacy systems, and the costs of updating and upgrading, as well as partly by a lack of understanding of what is required. "Their focus on risk, ratings and products means that their understanding of their customers lags behind the advanced techniques being developed by internet and telecommunications businesses," according to a report from PwC, *Insurance 2020*. "Most insurers are still primarily focused on e-commerce, doing what they do already, but digitally.

"The leaders are developing deeper, more personal and longer-lasting relationships by using their digital capabilities to gain an enhanced knowledge of their customers."

As insurance has become increasingly commoditised and consumer decisions increasingly price driven, insurers have found margins squeezed and customer engagement decreasing.

That digitisation is what customers want is not in doubt; 79 per cent of consumers worldwide say they will use a digital channel for insurance interactions over the next few years, according to a 2015 report from consultants Bain & Co. What has been missing from some insurers is a recognition that going digital is an opportunity to win back the reputation, loyalty and engagement losses of the past few years.

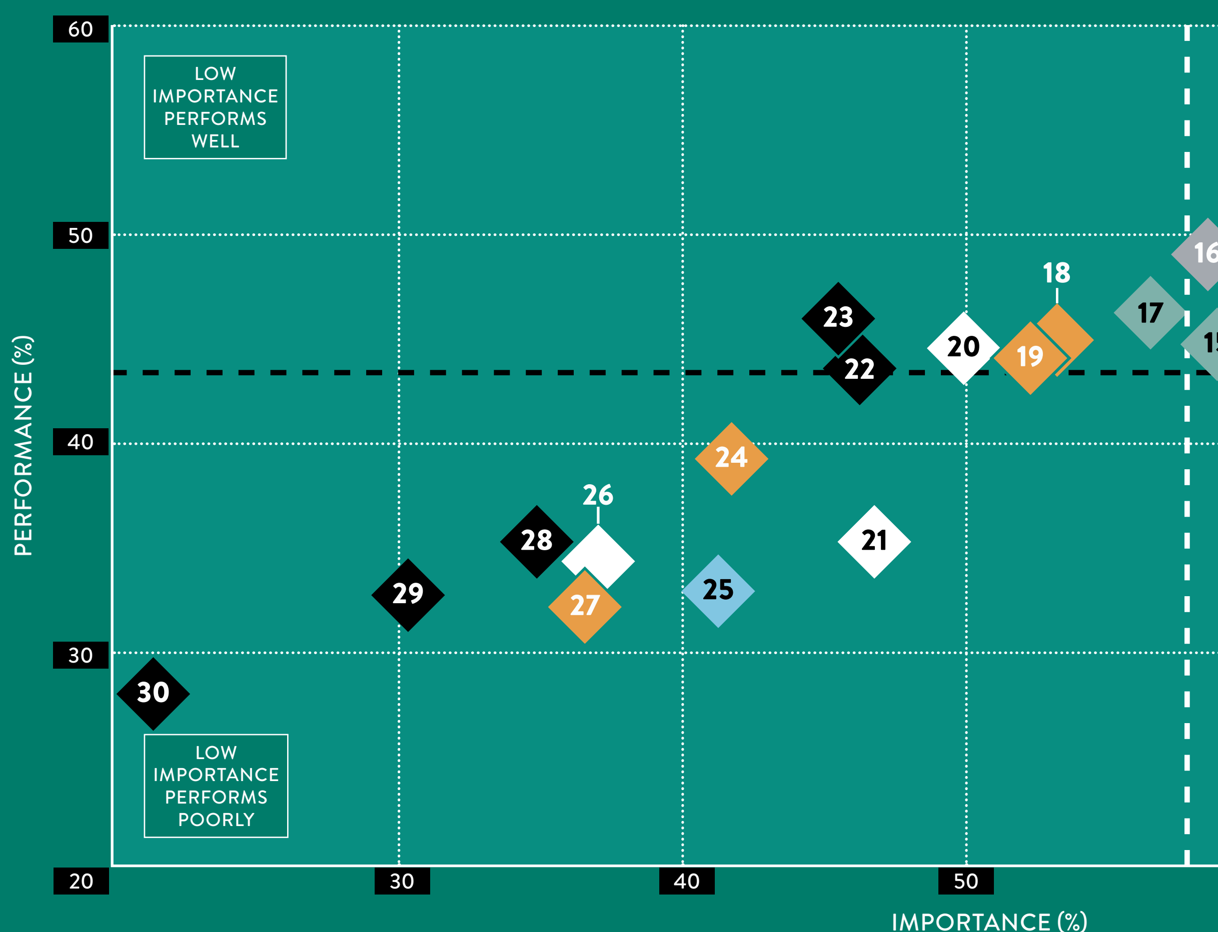
So, digitisation can lead to more engagement with the customer. PwC research found that 68 per cent of consumers would be willing to download and use an app from their insurance provider; two-thirds (67 per cent) would be willing to have a

KNOW YOUR CUSTOMER

MOST IMPORTANT ATTRIBUTES OF CUSTOMER EXPERIENCE COMPARED WITH PERFORMANCE

GLOBAL CONSUMER SURVEY OF GENERAL INSURANCE PROVIDERS

TYPE OF ATTRIBUTE: Staff engagement · Brand value and reputation · Value for money · Executional excellence · E



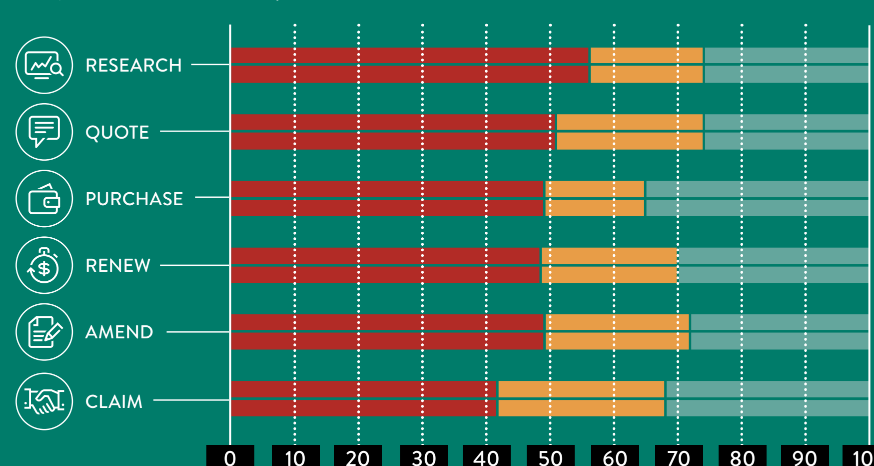
ATTRIBUTES

01 Value for money
02 Staff who are honest and tell the truth
03 Staff who consistently follow through on their promises
04 A company that puts the customer first
05 Quality of advice and service offers
06 A company I know will deliver
07 Getting things right the first time
08 Speed when resolving a complaint/resolving a query
09 Trust that the brand delivers on its promises
10 Speed of service
11 Ease of getting issues/queries/ complaints resolved
12 Speed of making an inquiry/transaction
13 Staff who are knowledgeable
14 Staff with a positive attitude
15 Having services and products that are easy to understand
16 Consistency of service – continuity in communications or interactions
17 Ability to get in contact with the company with short wait times
18 Trust in the brand to do the right thing
19 Trust that the brand understands my needs
20 Offers products and services that can be tailored to my specific needs

PREFERRED CHANNELS FOR COMMUNICATION WITH INSURER (%)

GLOBAL SURVEY OF INSURANCE CUSTOMERS

Digital · E-mail · Telephone



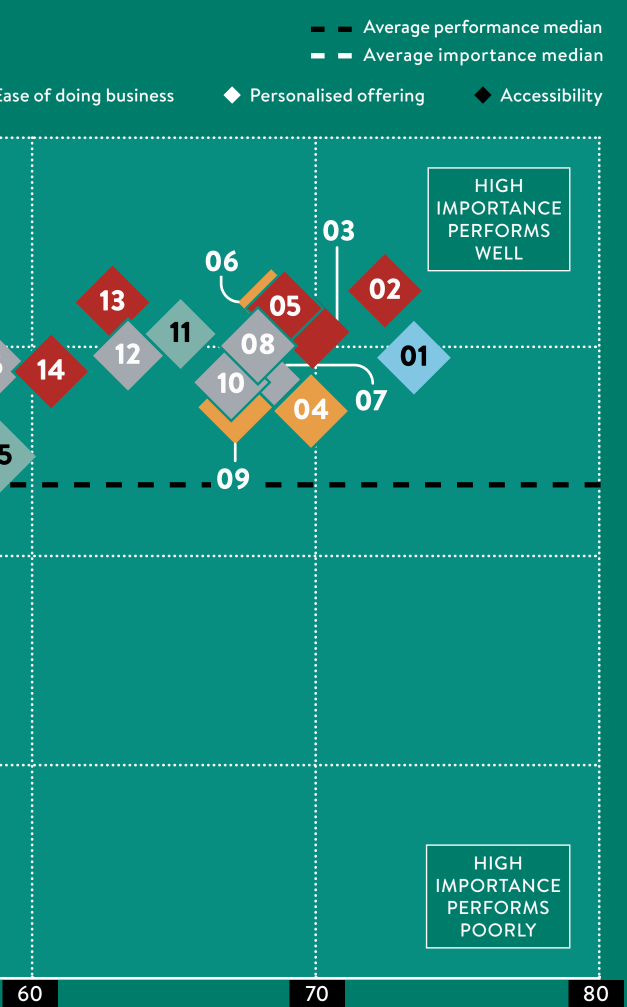
Source: PwC 2014

FACTORS THAT WOU CUSTOMER EXPERIE

GLOBAL SURVEY OF INSU

ACCESSIBILITY
TAILOR TO CUSTOMER NEEDS
CONTENT EXPLANA
VARIETY OF INSUR SERVICES/PRODUC
MORE ONLINE ACC
LOYALTY POINTS FO CONSUMER STORE

Insurers are working hard to meet the changing demands of the modern consumer, although cost, value for money and accessibility are key factors that still determine the customer experience

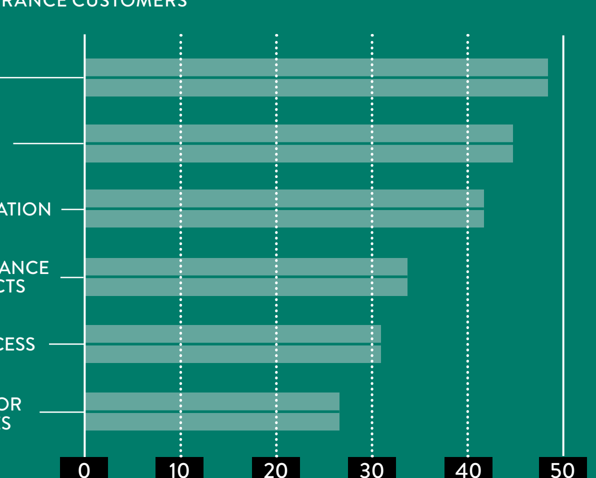


21	Rewards my loyalty	26	Rewards my choice to do business with the company
22	Availability of services around the clock	27	A brand that inspires me
23	Choices/options available for communications	28	Physical proximity/ease of access of a company
24	A company that is well regarded in the media	29	Appearance and operations of a website
25	Availability of rewards and promotions	30	Ambience of decor of a branch/store

Source: *2015 Customer Experience Barometer*, KPMG

…LD HELP INSURERS IMPROVE …NCE (%)

…RANCE CUSTOMERS



Source: PwC 2014

TOP REASONS FOR CLOSING OR REPLACING A POLICY

GLOBAL SURVEY OF INSURANCE CUSTOMERS

BY INSURANCE TYPE	LIFE	AUTO	HOME
Cost/terms	50%	57%	59%
Policy benefits/coverage	47%	42%	48%
Recommended by broker/friends	38%	29%	39%
Frequency/relevance of communication	28%	16%	34%
Level of service received	28%	26%	31%
Policy did not align to my life circumstances	26%	14%	26%
Research I conducted	25%	20%	30%
Experienced personal/family milestones	24%	11%	25%
Brand reputation	24%	17%	29%
Did not like the way it was handled	22%	18%	26%

Source: EY 2015

INSURANCE CUSTOMERS WHO HAD A POSITIVE EXPERIENCE BY COUNTRY

SURVEY OF INSURANCE CUSTOMERS IN 30 COUNTRIES

TOP 5

01	AUSTRIA	64.9%
02	UNITED STATES	58.5%
03	BELGIUM	57.7%
04	AUSTRALIA	57.1%
05	FRANCE	56.8%

BOTTOM 5

26	SPAIN	39.2%
27	TAIWAN	37.7%
28	HONG KONG	37.6%
29	CHINA	37.3%
30	SOUTH KOREA	33.6%

Source: Capgemini 2016

> The leaders are developing deeper, more personal and longer-lasting relationships by using their digital capabilities to gain an enhanced knowledge of their customers

sensor attached to their car or home, if it meant a reduction in premiums.

According to David Law, insurance global leader, at PwC: "Technology is going to be an important part of insurers' ability to capture and analyse new sources of customer data and develop deeper relationships. Yet, the real differentiator is how effectively this information is turned into insights and a readiness to lead the innovations in the marketplace."

Challengers such as InShared have prompted existing insurers to raise their game. Flexibility and personalisation are the watchwords as companies learn to use customer information better, not just to cut costs by reducing premiums, but to change behaviour and increase loyalty.

But none of this detracts from the need for real humans. Accenture's Mr Cusano says: "Technology will change many insurance jobs and even eliminate some. But a much bigger trend is the support that technologies like artificial intelligence will provide, enabling insurance professionals to spend less time on routine admin tasks and more on adding value: engaging with customers, solving problems, making better decisions."

After all, all the data in the world is of no use if it isn't analysed and if that analysis isn't converted into action. So the trick for insurance companies now is to translate data patterns into better products and services for their customers – and that's where humans come in.

"People are being deployed in higher value roles that include more customer contact than ever before," says Mr Cusano. "They like that."

It means an about-turn in how insurers have operated historically. Instead of developing and selling products, it means working backwards from customer needs and expectations – and that requires the right people.

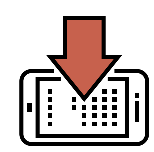
According to the ABI: "Insurers will become real-time risk consultants. Through big data and the increasing prevalence of connected sensors in our lives – the internet of things – customers and insurers will be able to constantly share insights with each other."

So your insurer might be warning you about skipping a red light; pointing out that you forgot to lock the front door; even spotting a potential medical condition before it develops into something dangerous. Of course, insurers have been pricing according to personalised risk for decades, as smokers and newly qualified male drivers will testify; but the digital world will help break down the personalisation further and potentially change the riskier behaviour.

"Given the inextricable link between physical risks and financial risks, insurers have always had an interest in their customers mitigating risk in order to minimise financial losses, but until now have not often been in a position to help. The connected world will change this," says the ABI.

To do this better, insurers will need to form partnerships with other companies. Insurers are starting to develop closer ties with car manufacturers, offering lower premiums for customers who opt for safety features such as self-parking. The internet of things brings more change; Aviva, for example, has linked up with HomeServe, to trial LeakBot, a device that will spot water leaks. Given that the insurance industry handled water damage claims worth £650 million last year, it could make quite a difference.

So far, so traditional; much of the data gleaned from social interaction is simply helping insurers to price their products and target



68% per cent of consumers would be willing to download and use an app from their insurance provider

Source: PwC

the risks better. Instead of the cost of risk being spread through a wide population, it will be borne by the individual displaying the risky behaviour.

But insurers will also be able to develop services that reward not only through lower-priced premiums, but by taking a leaf out of retailers' books and developing, for example, loyalty programmes that allow more regular interaction than the once-a-year renewal. PwC research suggests that more than half of global participants would be prepared to provide their insurer with additional personal and lifestyle information to enable them to seek the best deal for relevant services on the customers' behalf, moving insurers from reactive to proactive.

So insurers will move from being salesmen focusing on the benefits of a product to consultants focusing on an outcome for the customer. Now who wants to be an insurer when they grow up?

COMMERCIAL FEATURE

CONNECTING THE INSURANCE ECOSYSTEM

Insurtech needs one final ingredient to thrive – data infrastructure, says ***Adrian Rands****, chief executive of QuanTemplate, specialists in insurance data integration and analytics*

QuanTemplate

While chairing the London Market Group, Steve Hearn, articulated a view held by many in insurance that there is a "relentless march of technology and an ever-increasing amount of data", adding that he was convinced "true specialty insurance business requires an intense exchange of information and cumulative underwriting expertise".

His comments made two years ago in the influential Boston Consulting Group *London Matters* report preempted the technology revolution in insurance, on the cusp of which the industry stands today. The tools to enable this revolution are in place: efficient distribution through innovative web-based platforms; predictive analytics engines that drive pricing and risk selection; and market data feeds which expand each company's knowledge beyond their own experience.

No single tool from this insurtech box has the power to transform the market, but together they do. The challenge is linking them through a common language, which will allow insurers to bring all three elements together to empower their expert underwriters.

Insurers have shared risk information since the 18th century. But today the vast experience of the insurance sector cannot be harvested for analysis because the market is a modern Babel through its reliance on multiple incompatible data schemas.

Insurers receive risk data in thousands of incompatible formats with 148 insurers, 4,389 agents and 242 brokers in the network of trading parties in Lloyd's and the London Market alone.

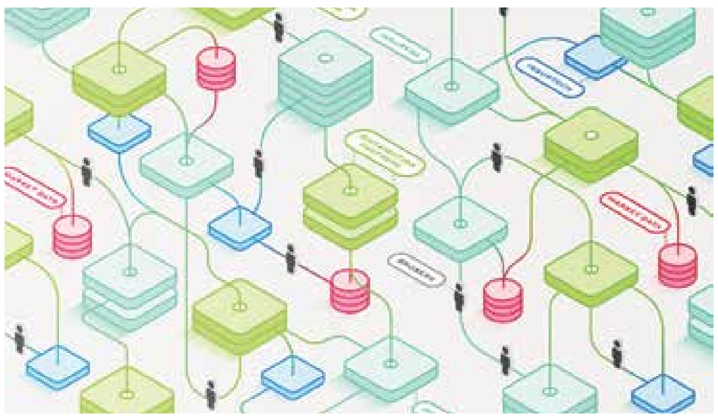
THE LONDON MARKET

388k risk and claim bordereaux

4,389 agents

242 brokers

148 insurers



> No single tool from this insurtech box has the power to transform the market, but together they do

With an estimated 388,000 risk and claim bordereaux being shared between these parties each year, the amount of disparate data is growing exponentially. With no common standard applied across the market, the number of data schemas is vast, and this incompatibility makes it nearly impossible for companies to test insurtech systems quickly and efficiently.

The solution adopted by some insurers is a federated data model, which converts all the data received from distribution agents into one common format compatible with their analytics systems. This fourth insurtech tool solves the incompatibility problem by harmonising data and linking the members of the network.

It allows insurers to exploit insurtech distribution by enriching each company's private cache of risk information with data from trading partners and independent market feeds. The resulting trove can be run through predictive systems that provide more sophisticated ways to assess and monitor the value of each and every risk dynamically, whether on or off the books, and to feed it back to distribution partners.

This approach allows insurers to identify past patterns within the data and use these insights to forecast future underwriting performance.

The impact of insurtech will be felt in two key areas. Firstly in the distribution of insurance products; for example by connecting insurers to the internet-of-things where products can be created to leverage the enormous reserves of generated data.

Second is risk analysis and management. By exploring and exploiting the historical data unleashed in the federated data model, underwriters can assess risk at a much more granular level to identify the specific drivers of profit and loss. Companies such as Logical Glue for credit risk and Shift Technologies for claimant fraud are already doing this, but the sector has real difficulty taking advantage of these advances because insurers cannot shoehorn their data into insurtech systems.

A future where the data translation challenges are overcome means digital distribution will extend beyond pioneering motor aggregators into every segment of insurance. Predictive analytics will sit alongside actuarial analysis and capital modelling. Market data feeds will flow harmoniously to help companies' benchmark their own experience. Data will be captured at source, wherever a policy originates, and immediately converted into a form useful to all.

The result will be insurance products that are cheaper and more appropriate for the customer, bespoke even. Ultimately, a networked data grid will allow the free flow of trading information between any partners in the ecosystem. The London Insurance Market is celebrating its 328th year as a highly sociable network, but before digitisation is possible the trading data must be unlocked.

For more information please visit www.quantemplate.com

Machines assess

Machines that learn from data have the pot

MACHINE-LEARNING

DAVEY WINDER

A formal branch of artificial intelligence, machine-learning builds systems that learn directly from the data they are fed and effectively program themselves to analyse that data and make accurate predictions. Having already helped multiple business sectors create new models and drive competitive advantage, now it's the turn of the insurance industry.

So just how is machine-learning changing the way insurers do business? "It gives insurers three distinct advantages," explains Max Richter, managing director in Accenture's UK insurance analytics group. "The first is to mine greater volumes of data, the second to scale analytics across the organisation by working smarter and faster, and lastly by answering more complex questions from 'will this customer leave me at renewal?' to 'what can I do about it?'"

> As machines learn more about us, they are able to predict our risk profiles at much greater accuracy and granularity than was possible before

As such it is quickly becoming an essential tool for the insurance sector, specifically enabling companies to yield higher predictive accuracy as it can fit more flexible and complex models. As opposed to traditional statistical methods, machine-learning takes advantage of the power of data analytics and is capable of computing seemingly unrelated datasets whether structured, semi-structured or unstructured.

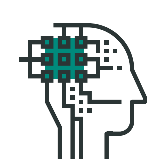
"Insurers have introduced machine-learning algorithms primarily to handle risk similarity analytics, risk appetite and premium leakage," says Hortonworks general manager of insurance, Cindy Maike. "It is also widely used to aid the frequency and severity of claims, manage expenses, subrogation (general insurance), litigation and fraud."

One of the most impactful machine-learning use-cases is the ability to learn from audits of closed claims. "Claim audits are traditionally a manual process by nature," says Ms Maike. "Machine-learning techniques provide an uplift in the ability to learn from those by applying enhanced scoring and process methods throughout the claims life cycle."

Beyond traditional data sources, machine-learning is also opening the analytic doors to new information. "With the advent of telematics, wearables, and other sensor and remote monitoring technologies, more information will be collected about our behaviours and habits, such as how you drive your car or how much exercise you do," says Heidi O'Leary, principal consultant with Market Gravity.

"As machines learn more about us, they are able to predict our risk profiles at much greater accuracy and granularity than was possible before. This will lead to more personalised insurance products and allow insurers to offer other value-adding products, such as getting the car serviced before it breaks down."

Another area where wearables and machine-learning meet is on the building site. Ashley Hirst, chief operating officer and chief underwriting officer at AIG, says: "AIG has invested in Human Condition Safety (HCS), an early-stage company matching wearable technology with artificial intelligence." This is a platform that enables workers



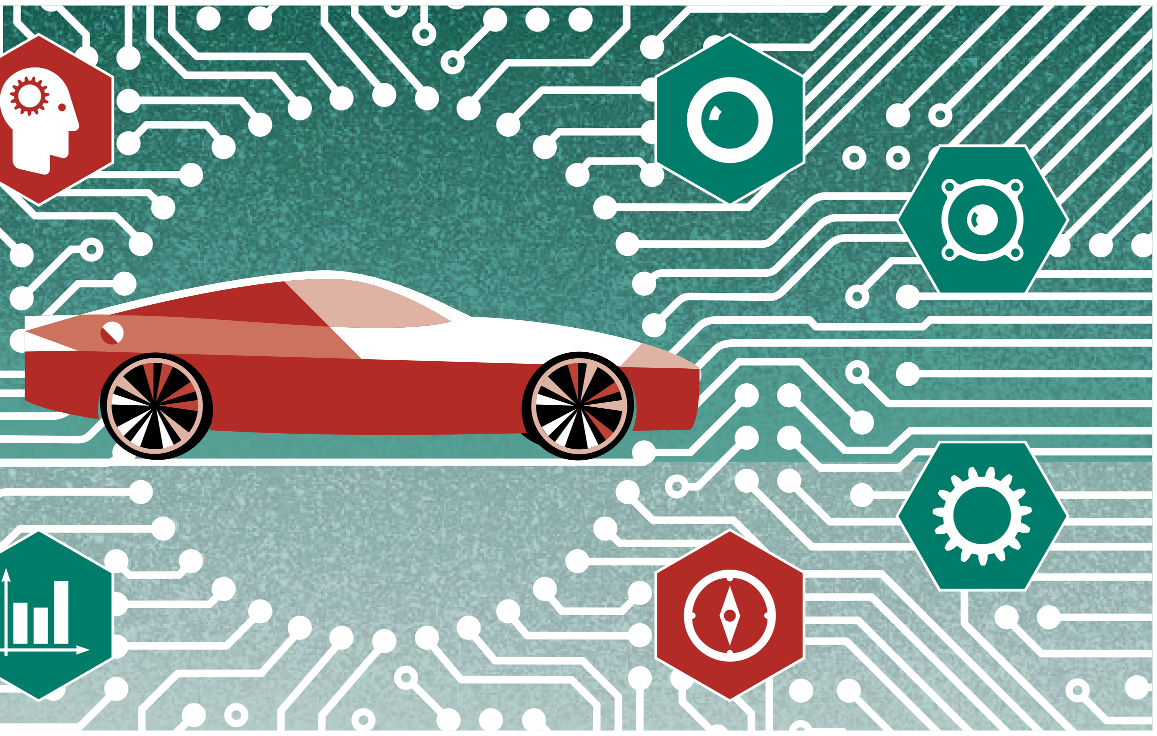
82%

of global insurers agree AI-driven automation will be seamlessly embedded into every aspect of business over the next five years

Source: Accenture 2016

risk and detect fraud

ential to transform insurance processes and counter fraud



to reduce injuries and employers to improve operational efficiency. "HCS's technology can detect when a worker carries too much weight, makes a bad bend or enters an area that puts them at risk of injury," says Mr Hirst. All of which helps create new efficiencies in the underwriting process.

So why isn't everyone using it? Are all insurers aware of, and open to, the impact of machine-learning as a new way of risk-pricing and loss estimation? "Like any new technology this will require significant innovation both from a practical development through to changing organisational culture," says Rod Bryson, principal, wealth, long-term savings and insurance, with Capgemini.

"For a sector built on underwriters and actuaries, and overall prudent decision-making, such an approach will not happen overnight, but the transformation is almost inevitable in the longer term." Those who can experiment, at least in the short term, may have the greatest chance to succeed in this arena. "It's not about building the capability or technology, it's about how and where in the business do you start to apply it," says Mr Bryson.

And if it is applied, will the application of machine-learning be able to deliver a measurable decline in human fraud? George Robbins, Europe, Middle East and Africa vice president for commercial solutions, at BAE Systems Applied Intelligence, is in no doubt. "Our customers often detect twice as much fraud using a combination of complex analytical and machine-learning techniques," he says.

Scott Horwitz, senior director in insurance solutions, at global analytics company FICO, says: "One of our clients doubled the amount of fraud dollars detected and identified 33 per cent more claims in a fraud ring in the first 200 claims they reviewed." Further, in the first nine days after deploying machine-learning and predictive analytics to try and combat insurance fraud, a large auto insurer found more than £250,000 in suspected fraud, says Mr Horwitz. "The combination of FICO predictive analytics, link analysis and business rules have found up to 50 per cent more fraud over a traditional, rules-based system," he adds.

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APPLYING MACHINE-LEARNING TO FRAUD

Ai825/Shutterstock

Cindy Maike, general manager of insurance at Hortonworks, tells how machine-learning can be applied in the real world of insurance fraud detection:

"Using machine-learning, insurers can load claims data of all types into a huge repository, often called a data lake. This method differs from traditional predictive models, which only leverage structured data. Claims notes, diaries and documents are key in discovering fraud and developing fraud models. In case of fraud detection, the procedure would consist of a learning phase, prediction phase and continuous learning phase.

"The learning phase is when you are learning from training data or claims which are fraudulent and those which are valid. It consists of pre-processing (normalisation, dimension reduction, image processing if you are using photos and so on), learning (supervised and unsupervised) and error analysis (precision, recall, overfitting, test/cross validation).

"The prediction phase uses the model from the learning phase and applies it to new data which is deployed for detecting and flagging fraud.

"The continuous learning phase is when your models are continuously recalibrated with new data and behaviours.

"In addition, using graph analytics with Apache Spark/GraphX is a newer method being leveraged as it enables the usage of neural network and social networks which is key in claims fraud analysis. This method is becoming quite popular compared with traditional claims scoring or business rules as these methods may result in too many false positives and it allows insurance companies to visualise fraud patterns more quickly compared with those traditional scoring models."

OPINION COLUMN

Digital insurance: the view from Asia

Asia is an increasingly attractive insurance market poised to make a greater impact on the world stage

HUGH TERRY

Founder and managing director
The Digital Insurer

By 2030, Asia is expected to be home for two thirds of the world's middle class and is already the leader in the use of smartphones. So what are the prospects for digital insurance in Asia?

The face-to-face sale of individual insurance through tied agency and bancassurance partnerships between banks and insurance companies is dominant in Asia. Existing insurers face a range of fundamental challenges including the economics surrounding distribution and the relatively slow move away from bundled products, such as endowments. For now growth rates and profits remain impressive.

Established insurers are moving to reinvent these channels and make them more appropriate. This is a transformation that starts with existing business practices and adds in digital components with the aim of improving the customer experience and making a step-change in efficiency; in short, driving up revenue while reducing unit costs.

AIA, one of the world's largest life insurance companies, headquartered in Hong Kong, has made significant investments in the digitisation of its agency salesforce and more than 30,000 policies are now sold on a digital, paperless basis each month across more than ten countries using a proprietary point-of-sales tablet.

Mark Tucker, AIA's group chief executive, says: "The iPOS tablet initiative has allowed us to connect digitally to all our advisers and customers. The benefits are far beyond improved policy issuance as we now have better channels of communication, access to more data, better and more consistent customer engagement methods, as well as the ability to do more transactions in real time, more accurately and at much lower cost."

Do existing insurers have time to retool their models? New entrants are challenging incumbents with greenfield initiatives leveraging large customer databases from established brands outside the industry. Asset-light infrastructure is being deployed quickly using digital-first principles that resonate with 21st-century consumer expectations and in our increasingly smartphone-enabled world.

In China new entrants have been able to take advantage of new digital insurance licences and a more evolved online fulfillment capability than in most other countries. WeChat, a complete ecosystem allowing contextual ads, messaging and in-app payment and fulfillment, is proving to be an excellent enabler for digital insurance.

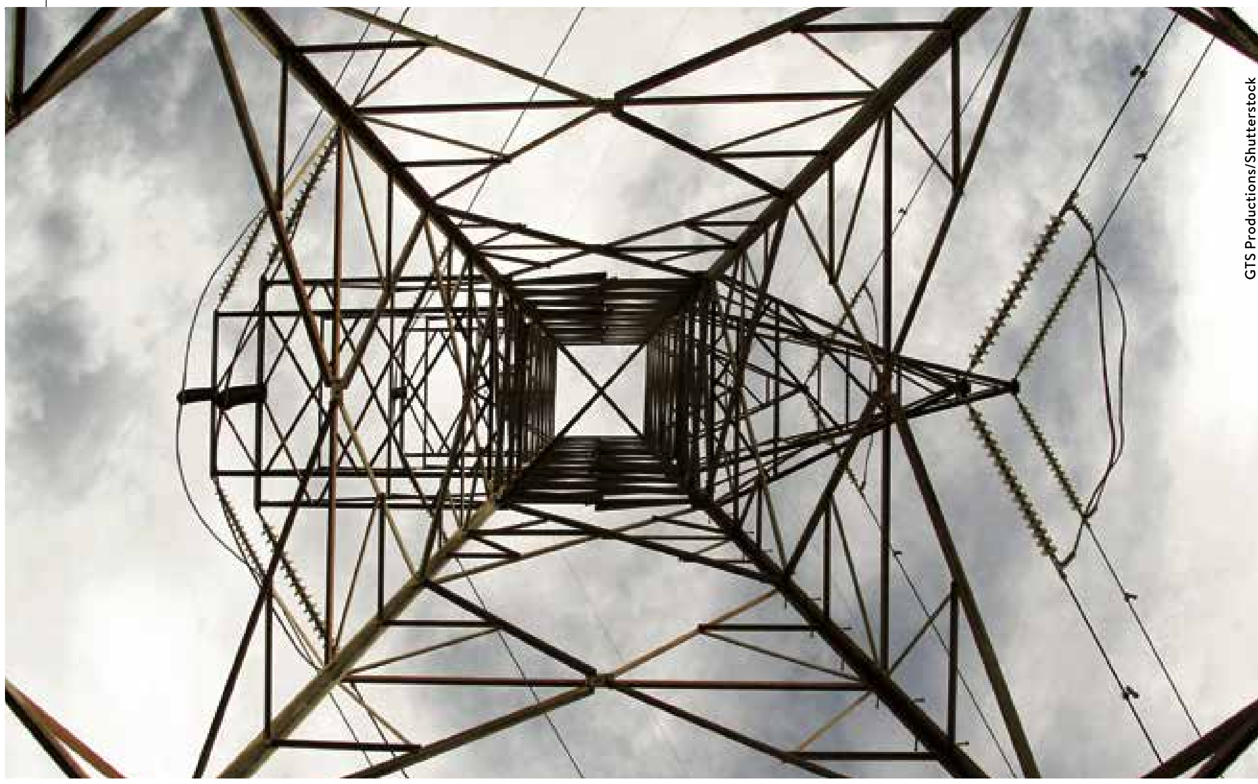
Zhong An has led the way with a shipping returns insurance offering for users of TaoBao (similar to eBay) that resulted in the acquisition of more than 150 million customers and the sale of more than 600 million policies in its first 18 months. It successfully raised $500 million in 2015, and has launched innovative and analytics-priced digital products across a number of lines of business.

Asia analyst Paul Schulte, author of the recent report *The Insurance Asteroid: An Extinction Event?*, says: "In China we are seeing almost perfect conditions for disruption – tech-savvy and well-funded internet companies such as Alibaba and Tencent are reinventing insurance models from a digital-first perspective in a supportive regulatory environment. These models could be exported around the world faster than expected."

With so much untapped market potential in Asia, historically insurance chief executives would have been comfortable saying they are focused on driving growth through traditional models. Until recently interest in digital disruption was pretty low. But, as we close out 2016, it is a rare insurance company indeed that has not developed and activated some form of digital strategy.

Simon Phipps, head of insurance advisory at KPMG China, says: "We are seeing a wave of change building across the sector, and increasing interest in creating and developing new partnerships to exploit the opportunities for digital insurance. To stay relevant, the mindsets of the existing players need to keep moving from "how do we do this?" to "how can we do this with others to get further, faster, more cheaply, together"."

Asia is a highly attractive insurance market with opportunities for local insurers, multinational and non-traditional new entrants to thrive. The region will more than punch its weight on the world stage in the years ahead – and in many cases it already is.



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Multiplying risks in an expanding cyberspace

A more connected world is increasingly vulnerable to hackers motivated by malice, greed or political power, and inflicting physical, financial and reputational damage

CYBER RISK

HELEN YATES

When two hacking experts demonstrated to a *WIRED* journalist how they could access the computer system of the Jeep Cherokee he was driving, it highlighted a worrying threat in an increasingly connected world. Through malicious code, the hackers were able to control everything from the air conditioning and music to the vehicle's steering, brakes and transmission.

As the internet of things (IoT) takes off it will inevitably introduce new cyber vulnerabilities, says Michael Carr, technology practice leader at Argo Group. "The biggest concern with IoT is you have masses of multiplication of the attack surface. Every connected device is a point of entry into a network," he warns.

Technology research firm Gartner forecasts that 20.8 billion connected things will be in use worldwide by 2020, up from 6.4 billion today. It also anticipates that up to 20 per cent of annual security budgets will go towards addressing compromises in IoT security.

The difficulty for security experts, corporates, IT departments and insurers is that many IoT devices are not designed with security in mind. "Up until recent times connected devices tended to be things that we took some effort to defend – desktop and laptop computers, even mobile phones and certainly servers," says Mr Carr. "When you start connecting thermostats and refrigerators there's a real question if those things are going to be engineered securely or if they could become the weak link."

> Cyber insurance providers will continuously need to adapt their products and services to the changing threat environment

The data breach at Target in 2014 offers an example of how such weak links can be exploited. The personal data of more than 100 million individuals was compromised after hackers used stolen credentials from a contractor to access the retailer's corporate system. "They had the vulnerability not in their own system, but in the system of their heating and ventilation supply company," explains Graeme King, senior cyber underwriter at Allianz Global Corporate & Specialty (AGCS). "By exploiting that vulnerability they got in."

As the Jeep hacking stunt demonstrated, another emerging threat emanating from a connected world is actual physical harm arising from an intrusion. Potential scenarios range from individual attacks, such as tampering with the thermostat at a food or pharmaceutical warehouse and causing spoilage of perishable goods, through to major incidents, such as taking down a power grid.

In 2014, a blast furnace at a German steel mill suffered massive damage after cyber attackers breached the mill's control system. This, along with politically motivated attacks such as the Ukraine power grid attack of December 2015 and 2010 stuxnet attack on Bushehr Nuclear Power Plant in Iran, demonstrate these scenarios are not just the stuff of Hollywood blockbusters.

They also indicate the potential for systemic risk in a world where everything is connected. "Most cyber attacks carried out by criminals are about extracting extortion payments or stealing data to sell on," says Mr Carr. "Criminals are typically not going to be perpetrating something that could turn into a systemic attack. However, politically motivated attackers might be much more interested in causing systemic damage because their motivation isn't monetary, except maybe to wreck the economy of the country or region they were attacking."

ABOVE
Last December's cyber attack on Ukraine's power grid and subsequent blackout demonstrate the emerging threat emanating from a connected world

Supervisory control and data acquisition systems used by industrial and utility companies are typically not connected to the internet, a practice known as "air gapping". But this defence could be obsolete in the future. "One of the hot uses of IoT is sensors that allow you to manage power usage more optimally," says Mr Carr. "That means you have sensors on the power meters of homes and businesses talking to the power generation stations."

However, the ongoing concern for the vast majority of businesses will continue to be data protection and business continuity, says Joshua Goldfarb, vice president and chief technology officer of emerging technologies at cyber security and malware protection firm FireEye. "One of the biggest risks organisations face these days is the theft of sensitive confidential and proprietary information," he says. "Theft of data can cause brand damage, loss of revenue, lawsuits and fines for violating privacy laws.

"It is a risk that can be mitigated in various ways. But what people sometimes forget is that attackers are continuously evolving. Lately they've been doing quite a lot of attacks to compromise user credentials, allowing them to masquerade as a legitimate user."

Cyber crime is set to be worth $2.1 trillion by 2019, according to Juniper Research. In addition to data theft, 2016 has seen the proliferation of cyber extortion. The cryptolocker gang is understood to have made more than $30 million in 2015 using relatively simple ransomware.

"The insurance industry in the UK is ready for this, but the clients are not yet buying the product in their droves. Had there been widespread uptake of insurance to date we would have had a much bigger handle on the scale of this problem. An insurance policy would probably help an awful lot of these companies, enabling them to identify where that threat is coming from, plug the gap, restore the data and secure their systems from more of the same," says Mr King at AGCS.

The impending European Commission's General Data Protection Regulation and headline-hitting data breach exposés will continue to drive greater demand for cyber cover. Mr King says: "That's when you'll see the real upswing, as media headlines start causing people embarrassment."

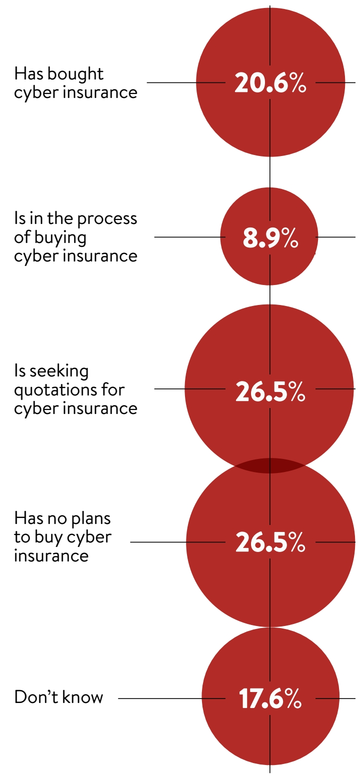
Cyber insurance providers will continuously need to adapt their products and services to the changing threat environment. If one of the objectives of future cyber attackers is to cause property damage, bodily harm, pollution or widespread power outages, it could mean insurance claims are made under more traditional classes of business, including commercial and residential property, motor, environmental, business interruption, general and professional liability, and accident and health.

While some cyber products offer cover for physical damage, this is not yet widespread and currently cyber exposures are not being priced into other insurance policies. "You either need to start adding cyber to all classes or introducing cyber exclusions and expanding cyber policies to encompass physical damage and bodily injury," says Argo Group's Mr Carr.

Insurance buyers may well prefer the former. The latter is preferable from an insurer's perspective, as with the first scenario there is a possibility that a single piece of malware could end up triggering coverage for six different contracts for the same insured. "Whereas if all the cyber stuff was in the cyber policy, I'd at least be prepared to manage my total exposure – I don't think the industry has figured this out yet," Mr Carr concludes.

UK COMPANIES' STATUS ON CYBER INSURANCE

SURVEY OF RISK AND FINANCE PROFESSIONALS IN MEDIUM TO LARGE CORPORATIONS



Source: SANS 2016

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TOP ADJUSTMENTS FIRMS HAD TO MAKE TO OBTAIN CYBER INSURANCE

1. Implement or update policies/processes
2. Acquire additional technical controls
3. Adopt a formal risk assessment/ management practice
4. Implement a data or information-governance programme
5. Update existing technical controls

COMMERCIAL FEATURE

TRANSFORMING INSURANCE WITH EFFECTIVE USE OF DATA

*Despite advances in technology, the insurance industry still struggles with the sheer volume and complexity of data. Simple changes and the use of new software can help organisations understand their business and meet regulatory requirements, says **Richard Brown**, director at VIPR*

VIPR
viprsolutions.com

The insurance industry is not the only business to struggle with understanding its data. But the sheer volume of information hitting insurers' desktops on a daily basis means it cannot ignore the importance of acting now to embrace the latest technology in order to get to grips with the issue.

The industry faces an important question around managing delegated authorities, which have served the insurance sector well for many years, but can be hard to monitor. With delegated authorities, the underwriters "give away their pen" and allow third parties to write risks on their behalf. Such third parties, called coverholders, operate throughout the world writing business in their local markets on behalf of Lloyd's and the company market.

Without proper controls working with delegated authorities can pose risks because of a lack of knowledge or visibility over the business. An in-depth understanding of the data produced by these coverholders is needed. Having proper systems in place not only ensures restraint over the business written, but also enables an understanding of where the risks lie and where the profits or losses are being made.

58
Lloyd's managing agents

4,132
Lloyd's coverholders

300k
estimated annual bordereaux volume being submitted to Lloyd's

Billions
of individual cells of data

In the Lloyd's market alone there are around 4,000 coverholders operating globally and between them they sell millions of policies annually. This means a huge amount of data is fed back to the Lloyd's carriers, requiring extensive analysis and checking.

One of the difficulties faced is that there is currently little standardisation of this data, so it is presented to the market in multiple formats. This makes it extremely difficult to analyse and check without advanced software tools.

Thousands of spreadsheets are being presented each month, containing information on premiums written, premiums paid and claims made. All of this needs to be cleansed, validated and checked against the contract terms to ensure that the coverholder is abiding by the agreement between itself and the insurer.

Each spreadsheet can contain thousands of rows of data with multiple columns, so a single document could contain millions of individual cells of data. It is an impossible task for the human brain to absorb and check.

Fortunately, there are now a few software solutions that can help solve this issue. VIPR's Intrali system enables data to be mapped to a common standard, so spreadsheets can be imported into the system, and automatically cleansed, checked and formatted. As a result, data can be quickly and easily interrogated.

On its way through the system, the data can also be validated against the contract terms so that any breaches such as limit or aggregate violations can be highlighted. Now widely used in the Lloyd's market for insurance, the system can also be applied to help any other industry cleanse, validate and standardise large sets of disorganised and non-standard data.

This detailed understanding of information not only makes sense from a business perspective, but is now essential in order to satisfy the ever-increasing oversight from regulators and to comply with the latest reporting requirements. In insurance, without using such systems, it is difficult to understand how companies will comply with the new Solvency II Pillar 3 requirements that mandate advanced and timely reporting. The requirements come into full force next January, with strong penalties for non-compliance.

> VIPR's Intrali system enables data to be mapped to a common standard

Without the right technology in place, the traditional insurers will also find themselves under increasing threat from new entrants that embrace the latest technology from the start. This will give those new entrants a leading edge in terms of understanding their business, and in creating operating efficiencies and more competitive pricing for the consumer.

A good example of this is MGAM, a new managing general agent, which has recently worked with VIPR to implement technology across the whole range of its business from bordereaux to coverholder management, accounting systems, and online quote and bind platforms.

Not only does this work give MGAM an in-depth understanding of its business, but it also now has the ability to roll out new lines of business to coverholders quickly and efficiently, in the knowledge that the proper controls are in place to manage risk.

The quote and bind solutions enable coverholders to transact business in real time, with automatic production of compliant documents including quote sheets, policy documents and endorsements. Renewals can be automated and any mid-term adjustments can be calculated at the touch of a button because all the necessary data is contained within the online system.

These changes also give comfort to the regulators that business is well controlled and everything is being carried out in a compliant manner.

The insurance market is starting to embrace technology, albeit slowly, and we believe the will is there to support these changes. Costly IT failures in the past cannot be allowed to stifle future innovation and should not be used as an excuse for inertia. Software has moved on in leaps and bounds over recent years, and processes that were challenging a few years ago can now be achieved with ease.

Ultimately, companies have to innovate in order to survive. Those that lag behind risk the same fate that befell Woolworths, Polaroid and Kodak. Change is inevitable, so companies must adapt. Businesses must embrace the new systems, not only to satisfy the regulators, but also to improve their operations and survive the onslaught of innovative competitors.

ABOVE
Richard Brown
Director
VIPR

To find out more about VIPR's solutions visit www.viprsolutions.com

COMMERCIAL FEATURE

MOVING WITH THE TIMES: WHY LIFE INSURERS MUST ADAPT

Insurers must harness technology to offer customers more and better insurance options, says ***Ross Campbell****, chief underwriter of the Life-Health Research and Development Unit at Gen Re*

The insurance industry is not the only business to struggle with understanding its data. But the sheer volume of information hitting insurers' desktops on a daily basis means it cannot ignore the importance of acting now to embrace the latest technology in order to get to grips with the issue.

Disruption and innovation will alter established business models indelibly. We understand this since reinsurance was itself born out of innovation. As specialist product providers and managers of biometric risk, Gen Re makes a significant contribution to the structure of today's global reinsurance markets. We recognise the way we go about things must fit the times.

Life insurers will soon find themselves in a technology-shaped future that is customer-centric. Life insurance is not a simple transaction which perhaps explains why so many don't bother with it. However, if the industry makes better use of technology, it will make life insurance accessible for large numbers of people who have none or too little.

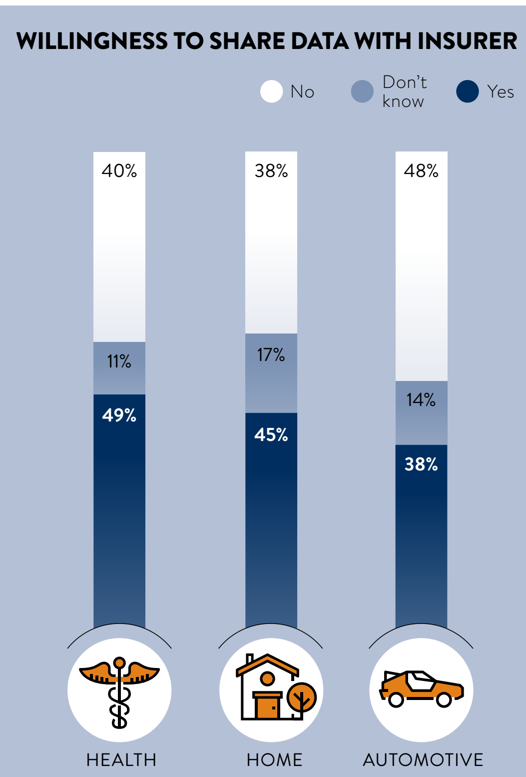
The life insurance industry is generally seen as slow to initiate change or even resistant to it. More likely its well-established and successful working practices make life insurers hesitant to commit to new ways without knowing whether the new ones will be adequate and stand the test of time. Contrary to opinion, life insurers are just like any retailer, and keen for greater engagement and sustained direct relationships with their customers.

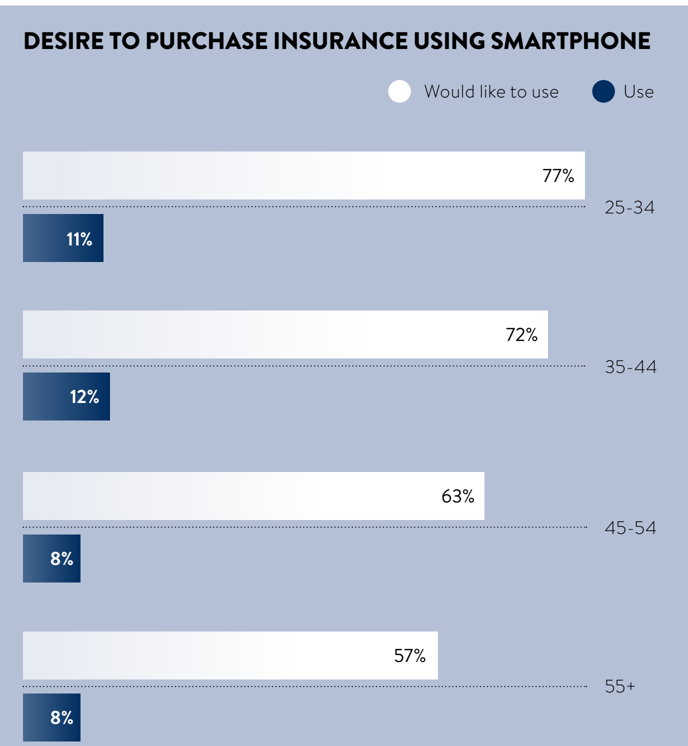
It is important insurers do adapt to changes in technology merely to avoid being left behind and to stay relevant. How we behave and interact with people must give customers easier access, greater transparency, and more integrated and flexible solutions. Customer experience and behavioural economics play a role. Among other things, this means working with modern customers' demands for products that are geared around their preferences and how they live their lives.

> If the industry makes better use of technology, it will make life insurance accessible for large numbers of people who have none or too little

For example, we recognise fitness wearables have a part to play in maintaining good health. It's why reward-for-fitness life insurance franchises have become popular in several markets. This is a clear sign of changing times; it shows people will share with their insurer some personal data when it provides them an advantage, such as a lowered insurance premium.

Personalised medical care increasingly involves self-monitoring with mobile apps in "mecosystems" that give individual patients a hand in maintaining or recovering their health. People are also encouraged to augment their electronic health records by filling the blanks between episodic doctor's visits with digital lifestyle data from wearables and phones.





Source: *Insurance Disrupted: General Insurance in a Connected World*, Deloitte 2015

Individuals will begin to develop rich intelligence about their everyday health from data on exercise, sleep, mood, diet, heart function and more. Personal information like this is likely to prove as predictively powerful as the medical data traditionally used by insurers. The development of a parallel source of medical information means insurance companies need to change the questions they ask and where they obtain further evidence.

People will begin to expect an insurer to access their data and to do something tailored specifically for them with it. Social networks will help people with mutually aligned interests and common risk factors to form peer-to-peer insurance pools. Knowledge gained from consumer genetics tests or much wider use of genomics in medicine could mean people are much better equipped to make personal decisions about their insurability.

Disruption, though, won't all happen at consumer level. To meet evolving customer demands, life insurance companies also must undertake some internal disruption. There are behind-the-scenes opportunities to harness technology in risk selection, administration and claims processes to the benefit of customers.

Companies are automating repetitive administrative tasks as quickly as possible. Blockchain technology will help insurers replace processes that need repeated paper transactions. Blockchain implements trusted and secure transactions with less bureaucracy, and since it works to decentralise administration, it is likely to be integral to the business models of new entrants to the life insurance market.

Life insurance is sold predominantly via an advised sale through some kind of human intermediary whereas the future may see direct-to-customer, affiliate or social media advice being driven by some kind of robotic algorithm. The adviser of the future will bring technology into their businesses and propositions.

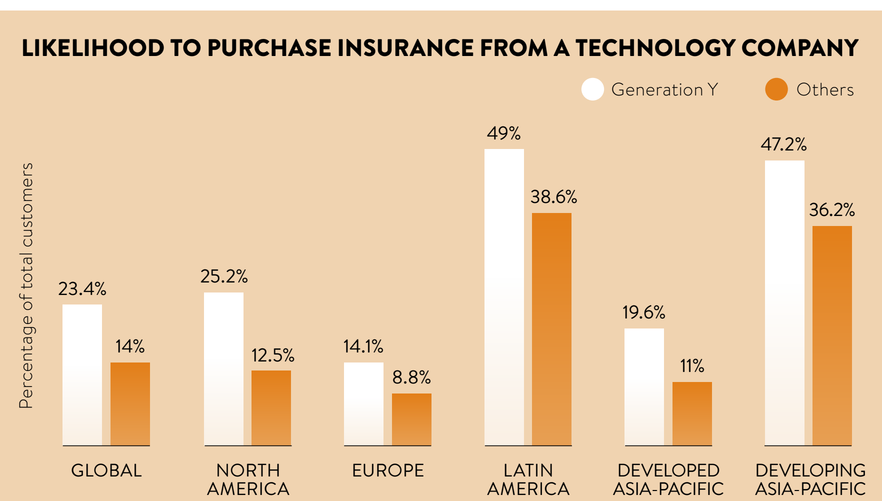
If life insurers don't make changes that provide an enriched digital experience for people, then someone else will. Technology will simplify our transactions allowing us to embed ourselves into the lives of customers as never before to support their financial and medical health.

We can predict a very different future for life insurers. It's a future with the customer at the centre, and will be shaped by behavioural science and gamification, with social and peer-to-peer networking and smart devices all playing a part. While the basics underpinning life insurance will remain in place for many years to come, how people access it, the incentives it provides and its cost will all be shaped by technology. It's not a one-off process, waves of disruption and continuous change should be expected.

> Personalised medical care increasingly involves self-monitoring with mobile apps in 'mecosystems'

It's a fairly obvious point to make, but there isn't one right answer. The future is about offering choice and multiple pathways to it exist. Gen Re's flexible approach means we have no preconceptions about the changes technology will bring to life insurance and we will continue to work with multiple partners to help their visions for the future become a reality. We believe competition within the industry enhances quality and it is imperative that we bring high-quality technical solutions to all our customers.

Gen Re, a Berkshire Hathaway Company, is one of the leading property/casualty and life/health reinsurers in the world, with a global network of branch and subsidiary offices in key reinsurance markets



Source: *Capgemini Voice of the Customer Survey*, Capgemini Financial Services analysis 2015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Difficult times for insurers' portfolios

Low-yield markets have made it difficult for insurers to generate reliable returns from their investment portfolios and increased pressure to ensure they have the right asset management strategy in place

INVESTMENT STRATEGIES
ROB LANGSTON

With a number of challenges facing insurers in the current market environment, what can be done to ensure they continue to deliver returns in all conditions?

"In this low-yield and volatile environment, it's particularly important that we understand the risks we are taking – how the assets backing our customers' long-term expectations might be impacted when markets move – and ensure we have real diversification across geographies, sectors and industries, as well as the more traditional view of diversification across asset classes," says Rachel Elwell, investment office and staff pensions director at insurer Royal London.

"Good housekeeping: a focus on costs, hard work with our asset managers to identify and then make the most of opportunities, and strong governance to allow good decision-making are also key."

However, the difficulties faced in growing portfolios and delivering returns has been a key concern for insurers for some time.

"Investing in the current environment is a bit like eating in a restaurant where the only items on the menu are rotting fish and mouldy cabbage – you eat it because you have to," says Doug Jones, chief executive of Charles Taylor Investment Management.

"Low returns on assets mean insurers have to focus more on their underwriting. They cannot rely on their investments to make the books balance. But low returns also mean a reach for yield in new strategies.

"Some of these strategies may mean taking new risks, such as crossing over from traditional fixed income into hard-currency emerging market debt, high-yield and income-oriented equities."

Richard Clarke, head of UK asset management at consultancy KPMG, adds: "For some time, firms have been expanding their investment options, initially into things like debt backed by real assets, but now we're increasingly seeing firms invest in long-term infrastructure and potentially riskier real assets such as early-development-phase property.

"Most firms are also continuing to drive profitability from third-party asset growth. This involves developing new solutions which match client's savings targets and attracting new talent."

In search of returns, insurers have increasingly turned to other asset classes and illiquid assets, and brought investment activities in line with underwriting practices developed and regulated under the European Union Solvency II Directive.

"Fixed income remains insurers' best friend, but they no longer want to shake the hand of some OECD [Organisation for Economic Co-operation and Development] governments," says Colin Fitzgerald, head of EMEA (Europe, Middle East and Africa) institutional at Invesco. "The big story within fixed income is the shunning of global government debt and the search for alternatives within core fixed income.

"Instead, we see a lot of interest from insurers for multi-asset investment strategies. Insurers realise they stand to benefit from greater balance-sheet stability and enhanced returns over the long term, together with the potential for lower volatility and capital requirements."

Russell Büsst, chief executive and chief investment officer at insurance investment sector specialist Conning, says the increasing regulatory burden on insurers continues to play a part in investment decisions.

"Historically, the cost of running either internal or external asset management functions has been small, typically less than 5 per cent of investment returns," he says. "As investment returns have declined, this proportion has increased significantly, in some cases eradicating the investment return entirely."

Mr Büsst says there have been a number of regulatory hurdles for insurers operating an asset management function or business, not only facing Solvency II, but a number of other European directives governing trading securities and investing.

"To date insurers appear to have responded by aiming to increase investment returns, rather than cut costs," he says.

However, the move towards new asset classes has also increased the level of expertise among insurers' own investment teams rather than seeking third-party managers.

"The increase in use of new asset classes and strategies has yet to result in a significant move towards more outsourcing; the main driver for any increase has been the need to access new investment expertise and not to cut costs," says Mr Büsst.

> Investing in the current environment is a bit like eating in a restaurant where the only items on the menu are rotting fish and mouldy cabbage – you eat it because you have to

The aftermath of this summer's vote on the UK's continued membership of the EU saw heightened volatility as investors around the world struggled to respond to the result.

Scott Eason, head of insurance consulting at London-based consultancy Barnett Waddingham, says insurers were unlikely to have been severely affected by any fall in currency following the Brexit vote.

"Typically insurers will look at investment risks and classify them as rewarded or unrewarded," he says. "Things like interest rate risk and currency risk are generally perceived by insurers as unrewarded risks: risks that if they invest in or take a position in they will necessarily win. A majority of insurers will have currency-hedged their assets anyway; you generally won't find that they have exposure to sterling having fallen.

"What it does do is potentially make it more attractive to invest in sterling bonds or dollar bonds hedged back to sterling, but it hasn't been a major issue."

Indeed, many insurers will have been aware of the potential issues surrounding Brexit before the referendum campaign started.

"In terms of Brexit-driven volatility, insurers were well aware that the vote itself could influence bond yields, the price of assets such as equities and foreign exchange, and some have sought to actively manage their exposure ahead of the vote," says William Gibbons, director in PwC's insurance practice.

"Now the vote has taken place, insurers are considering the implications of Brexit and also quantitative easing for investment markets going forwards, and whether to adjust their investment exposures in light of this."

Others in the industry have considered whether UK voters' rejection of the EU trading bloc could signal the scrapping of ineffective and political red tape holding back insurers from accessing some investment products and strategies.

The current market environment also poses challenges for insurers with their own in-house offerings, particularly since the introduction of pension freedoms with investors now able to take greater control over who manages their retirement savings.

"Successive waves of pension reform have eroded the advantages that insurance funds once had in pensions," says Ed Jervis, insurance partner at consultancy EY. "Insurers are recognising they have to take the pure-play asset managers on at their own game with capital and fee-light investment propositions that offer good performance potential across a range of risk profiles and time horizons."

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FALLOUT FROM BREXIT VOTE

In addition to currency fluctuations, longer-term concerns surrounding so-called passporting rights have rattled the UK insurance sector in the months since the Brexit vote, with the chairman of Lloyd's of London warning that the marketplace could shift parts of its business to Europe during exit talks.

John Nelsen, who has chaired Lloyd's since 2011, has cautioned that the loss of passporting rights, which enable firms in each EU member state to trade anywhere in the bloc without the need for additional local licences, could have a big impact.

"If we are not able to access the single market, either through passporting rights or other means, the inevitable consequences for Lloyd's and indeed other insurance organisations will be that we will transact the business onshore in the EU, and that obviously will have an impact on London," he said at Lloyd's annual dinner last month.

While the larger firms with subsidiaries already on the Continent will likely see little impact, analysts warn that many smaller players could be forced to relocate if the UK fails to secure access to the EU single market in a "hard" exit.

Blockchain adoption will strengthen the links in insurance...

Distributed ledger technology, known as blockchain, could have the greatest impact in the insurance sector once it is embraced by the major players

SFIO CRACHO/Shutterstock

BLOCKCHAIN

MARK TAYLOR

Historically slow to embrace change, insurance is rapidly emerging as the sector in which blockchain technology could have the most profound, transformational and disruptive effect.

The revolutionary concept blockchain offers is at heart a simple method of recording and sharing data. The distributed ledger technology is a basic database updated and approved by consensus of a public network. For insurance companies this is a time-stamped and tamper-proof historical record.

A report in August by London think-tank Z/Yen and accounting giant PwC put cost-savings for reinsurers who embrace blockchain at $5-10 billion. The "simple" solution suddenly has a huge prize dangling before anyone who cracks it.

"The insurance industry cannot afford to lose out on an unprecedented opportunity," says Peter Hacker, chief innovation officer at London wholesale reinsurance broker Ed. "Both in respect of the potential process optimisation and the structuring of new solutions, this will lead to material savings for the whole industry."

Mr Hacker says the big question being asked in boardrooms is whether a company can afford not to invest and in his view there is only one answer. "The industry is built around more centralised databases, big and fat databases, and blockchain is going to the heart of this very inefficient, costly approach and promising enormous change," he says.

For consumers, it could merely be a time-saving exercise of not having to repeatedly enter details with a variety of insurers. For actuaries, it offers an indelible record of anything they provide cover for; all traces of the history of anything from land to rare works of art to music.

The proof of concept behind blockchain gives an industry built on trust evidence of data so accurate it threatens to turn the sector on its head. And yet with all this hype, perhaps so typical of insurance, there is scepticism.

"It's a very exciting technology that has this tantalising promise of being able to do something dramatic; it has so much promise, but I haven't seen anyone come along and show us the Holy Grail yet," says Ashley Hirst chief operating officer and chief underwriting officer at AIG in London.

AIG's European arm set up a science team, guided by Mr Hirst, to study how new technologies such as blockchain could improve the quality of data-driven decision-making.

Since 2014 AXA, Generali, Allianz, Lloyds of London, Mutual Insurance and MetLife have also poured millions into blockchain research, determined to strengthen ties with consumers, regulators and each other as they seek to stamp out errors and improve efficiency.

PwC gives the example of claims recorded on a blockchain validated by the network, with only the valid being paid out. A blockchain would refuse multiple claims for the same incident, knowing what had already been activated, and the smart contract would pay out only on specific conditions being met. An insurance contract written on a blockchain would therefore provide faster, more efficient, and more accurate placements and claims settlement, cutting expenses by 15 to 20 per cent, they say.

"Because the record is fundamentally public, it eliminates huge opportunities for corrupt or criminal behaviour," says Mr Hirst. "It's not like someone in a closed room can change a record; the record is public and that is potentially transformative."

An estimated 5 to 10 per cent of all claims are fraudulent and, according to the Federal Bureau of Investigations, this costs US non-health insurers alone more than $40 billion a year.

Savings of expensive compliance and sanctions checks can also be factored in due to having streamlined and readily available records of any individual logged. Such efficiencies can wipe billions off overheads, consultants at KPMG calculate.

Despite his caution, Mr Hirst believes big changes will come in waves, starting with greater levels of shared, private information between reinsurers to help consumers save time.

"A consumer wants to file private information, but not have to do so 15 times with 15 different companies," he says. "They want to authenticate themselves and log data on their car driving, but not have to retype it, so it's about doing the work once, sharing many times."

He believes the tipping point for this use-case is near. "If one party creates the environment for that to happen, if two or three insurers will buy in and adopt that format to make their customers lives easier, it could take off quite quickly," he says.

Blockchain collaborations are becoming commonplace. The finance sector, driven by Wall Street, knows this and for the last 18 months blockchain has been the hottest ticket in finance. There is hardly a major bank not part of a consortium or announcing partnerships and testing with other institutions.

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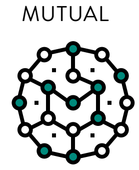
DEFINING BLOCKCHAIN

MUTUAL



Blockchains are shared across organisations, owned equally by all and dominated by no one

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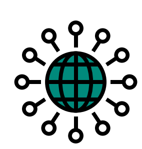

Blockchains are inherently multi-locational data structures and any user can keep his or her own copy, thus providing resilience and robustness

LEDGER

Blockchains are immutable, so once a transaction is written it cannot be erased and, along with multiple copies, this means that the ledger's integrity can easily be proven

Source: Z/Yen/PwC 2016

POTENTIAL USES FOR BLOCKCHAIN IN INSURANCE

- CONTACT LIFECYCLE DOCUMENTATION
- CLAIMS MANAGEMENT
- PROOF OF INSURANCE
- MULTINATIONAL ENTITY POLICIES
- KNOW YOUR CUSTOMER/ ANTI-MONEY LAUNDERING
- INTER-FIRM ACCOUNTING
- EXCESS OF LOSS REINSURANCE

Source: Z/Yen/PwC 2016

pliance and efficiency costs have been predicted by researchers from Goldman Sachs, Banco Santander and Barclays. The PwC-Z/Yen report echoes findings by both KPMG and auditors Deloitte that collaboration, trial and experimentation is vital for today's wholesale insurers. Firms working together to implement blockchain technology will reap the benefits, they say, as their interactions become more efficient.

Despite the hype, it took more than 12 months from the first names in banking to announce partnerships for a similar move by insurance players. Formerly at McKinsey before joining AIG, Mr Hirst's enthusiasm is tempered by his experience and he believes it could be at least a decade or more before so many fragmented interests are brought together.

The second wave, the next great promise of the immutable distributed ledger, lies in recording an unbroken chain of events, he says. This could be establishing the ownership of land or precious stones, for example. Mr Hirst believes this is a long-term ideal for the insurance sector, but one that could resonate much further than the industry itself.

"If I have a chain-of-land sale and the first time someone says they aren't recording on blockchain, my history is no longer 100 per cent liable," he says. "But there are countries in the world still building land registry systems today and if they decide from day one to have a mandate on how it will work, built on a blockchain, that could be phenomenal."

This data accuracy ensures blockchain can be used to deliver smart contracts, programs which self-execute when predefined conditions are met, according to Guy Halford-Thompson, chief executive of programmers BTL Group.

"Automation and smart contracts is certainly one area I think we'll see blockchain have a big impact," he says. "I think it may take time to get there, but insurance is one of those industries that will see the most progress, the most change, when it does adopt."

He sees a naturally hesitant industry rapidly heating up, but believes the most radical change will initially come in smaller value areas which then increase over time.

"Smart contracts on blockchain technology could work specifically around smaller value contracts; let's say you want to insure your phone for a day or you don't drive your car very often so every time once a week you use it you just insure your car for that one trip," he says.

It is from this smaller starting point that the more complex use-cases will appear, Mr Halford-Thompson believes.

"In the asset trading side in insurance, we are seeing activity, in buying and selling insurance contracts, liabilities and so on," he adds. "You can have smaller insurance contracts managed by smart contracts and then the ability to actually transfer ownership of those contracts, and so you start to imagine a powerful pattern emerging there over time."

Automation and smart contracts is certainly one area I think we'll see blockchain have a big impact

In September, one of Japan's largest property insurers Sompo Japan Nipponkoa Holdings announced development of a blockchain platform for derivatives. It is working on a system for buying and selling insurance policies related to natural disasters.

Last year, French insurance giant Allianz unveiled a prototype platform for the exchange of catastrophe bonds. At the time, Allianz said it was studying the potential to increase the "reliability, controllability and speed" of such trades using a blockchain-based system.

Professor Michael Mainelli, chairman and co-founder of Z/Yen, has spent 20 years building hundreds of bespoke distributed ledgers for the public and private sectors. Having worked for two decades on what is suddenly a zeitgeist, Professor Mainelli offers a vision quite unlike any other, something he saw coming back in 1995 when the first blockchain rolled off the Z/Yen production line.

"It's exciting, but not in the areas many people think," he says. "For me wholesale insurance is something that could be profoundly changed, along with the insurance of contract law. It's data that should be in the public domain. You could almost see a situation in future where if you don't put your records on a blockchain, they're inadmissible in a court of law."

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