

Quarterly InsurTech Briefing

Q12019



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Foreword

With the dawn of a new decade mere months away, many predictions are being made about what InsurTech has in store for our industry as we move into the 2020s. Many of the predictions and expectations remain focused on the art of the possible: Will an app-based algorithm unlock the doors to the millennial market? Will it be blockchain that finally makes insurance purchase a wonderful experience?

If last year showed us anything, it's that there is no shortage of investment capital flowing into the InsurTech universe. In fact, the final quarter of 2018 represented the second-highest quarter of InsurTech investment, ever. In 2019 Q1, we observed the highest number of transactions, the highest number of property & casualty (P&C) transactions, and the highest volume of Series B and Series C funding rounds since the publication started recording.

But what are we actually seeing in return for this deluge of cash? One could argue that much of the InsurTech space is in fact akin to the fable of the emperor's new clothes. In other words, there are very few people feeling brave enough to say, "Where is the change or the improvement?".

At Willis Towers Watson, we know how important appropriate technology is to the continued success of our industry. The very foundations of our own business are, to an extent, built on using, developing and offering appropriate technology to the (re)insurance market place. And as an increasing number of processes and functions become digitized and technologically supported and enabled, there remains great potential for innovative, insurance-centric vendors (InsurTechs) to play a role. Given our own direct observations of this space, we are positive that some InsurTechs are adding genuine value to the

(re)insurance value chain. But perhaps the ability to rationalize the sheer volume of hopeful companies and hype in this space is becoming an increasingly difficult task.

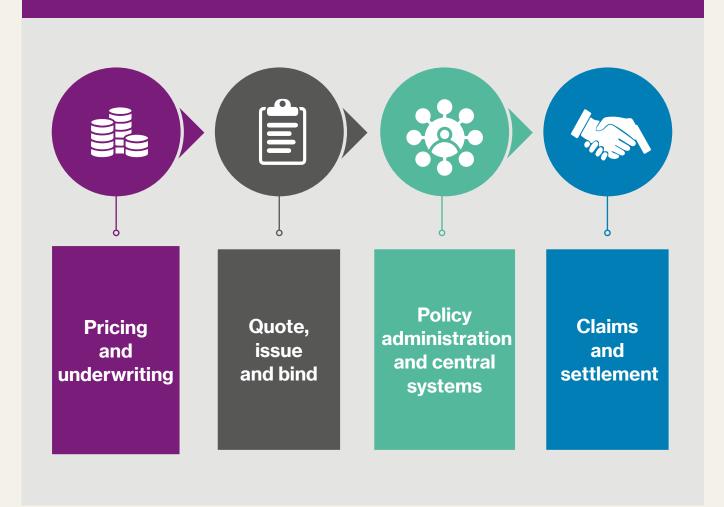
While we do not want to be the harbingers of anticlimactic news, we do remain very pragmatic about where we believe value can be added and where we see InsurTech making a difference. The focus of this year's quarterlies will take a slightly different twist from those of the last two years. Over the course of 2019, we wish to break down the process of insurance into its four major component functional parts. We will begin with pricing and underwriting. We will then move through the function chain to focus on quote, issue and bind; policy administration and central systems; and, finally, conclude 2019 with claims and settlement processing. These are the fundamental nuts and bolts that support the matching of risk and capital and drive our industry.

We will focus on each component through the lens of what is required to make that process function, and how contemporary technology might be applied to improve this process. We will cover a combination of thirdparty InsurTech-originated technology and some of the technology that has been designed by, and is proprietary to, Willis Towers Watson. In taking this year-long view, we hope to demystify and make better sense of this burgeoning space for our readers.

As this first edition focuses on the themes of pricing and underwriting, we wish to address the central nexus that can support our industry to make better pricing and underwriting decisions based on contemporary risks against the backdrop of the InsurTech universe. Per our previous briefings, we will be featuring a small number of InsurTechs from around the world who we genuinely believe are making significant progress, and adding value in the areas of pricing and underwriting.

This quarter we have profiled U.S.-based HazardHub, U.K.-based Concirrus, and U.S.-based Root; all of whom are delivering innovative business models and technology to this part of the insurance function process. We will also be featuring Willis Towers Watson's very own RadarLive pricing tool.

The insurance function chain



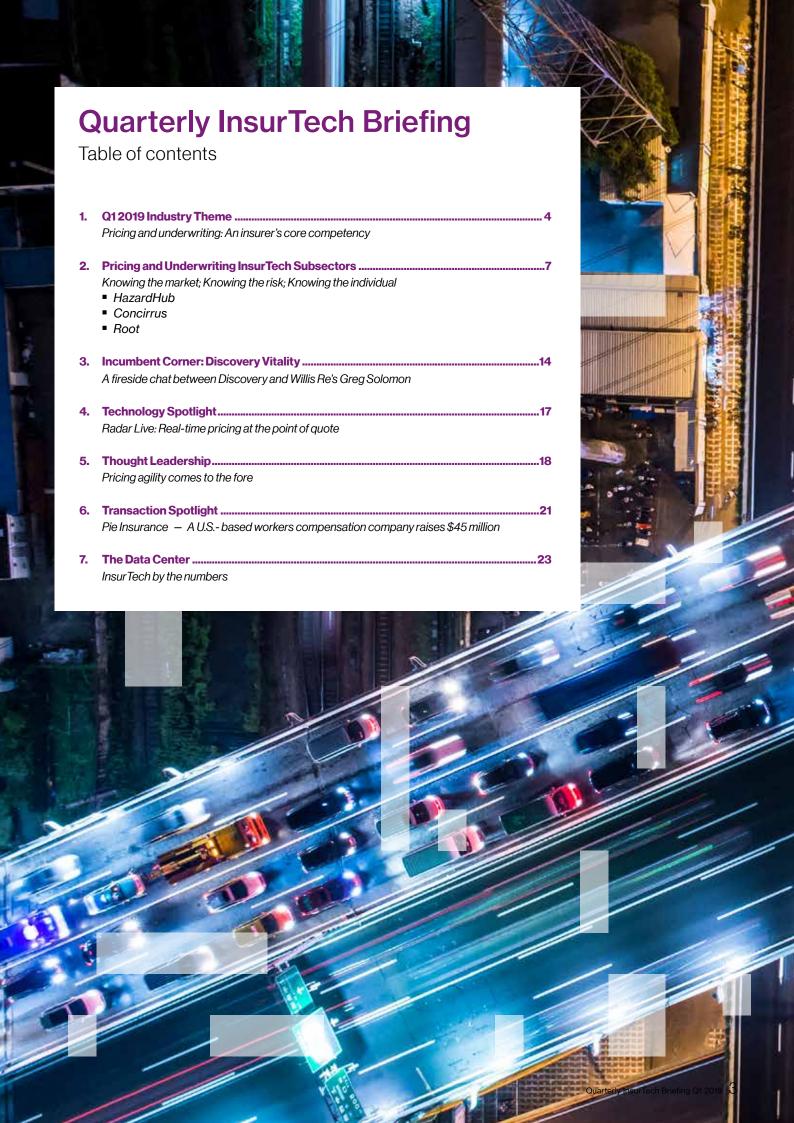
We are launching a new feature for the Quarterly InsurTech Briefing in this first edition of the year called Incumbent Corner. Specifically, we feature a fireside interview between Willis Re International's head of Life and Health Reinsurance, Greg Solomon, and Barry Swartzberg, CEO of the Vitality Group and co-founder of South African insurer, Discovery. Over the past two decades, Discovery has launched a number of innovative solutions and products in the life and health space, notably the Vitality business model, which is a paradigm-changing wellness solution that ties together insurance with healthy habits, gamification, wearables, points and huge amounts of propriety data. Greg - a self-declared "biohacker" with a strong interest in optimizing health - was really interested to dig into wellness, InsurTech and data with Barry.

This quarter's Thought Leadership comes from WTW Insurance Consulting and Technology's (ICT) global co-head of Pricing, Product, Claims and Underwriting, Neil Chapman, who will discuss the rising importance of flexibility and agility in pricing for insurers.

Our Transaction Spotlight examines the recent \$45 million Series B funding round of Pie Insurance. A start-up based in Washington, D.C., Pie offers easy-to-access and costeffective workers compensation coverage targeted to the unique needs of small businesses.

Finally, we conclude the report with a review of InsurTech market trends and transactions in the InsurTech Data Center.

As ever, we welcome your feedback, and we wish to thank you again for your continued support.



1.

Q1 2019 Industry Theme

Pricing and underwriting: An insurer's core competency

Pricing and underwriting are the core competencies of insurers — so where better to start our function-focused reviews of the value of InsurTech in this year's briefings, particularly as technology has already had a significant impact on the competitive pricing pressure on insurers in many markets.

Take, for example, the role of Internet price comparison websites (also known as "aggregators" and, arguably, the first real InsurTechs) in personal lines. As consumers, we can now compare numerous prices for the same or similar cover almost instantaneously and decide to buy if we are so inclined. Experience in the U.K., where the aggregator channel is most firmly established (accounting for more than 75% of new personal motor policy sales), shows that consumers are drawn to a simple and compelling technology proposition and often to the cheapest price, regardless of brand. This has served to intensify the force of adverse selection, punishing weaknesses in pricing or underwriting.

In affected markets, the result has been to trigger the beginnings of what we have described as a "technology arms race" of pricing sophistication. This sees forward-looking insurers using a far broader set of data sources, more advanced analytics and more agile processes to set and maintain their pricing and underwriting structures, and turning to tools such as Willis Towers Watson's Radar Live (see page 17) to enable this. Therefore, technology — having driven the requirement for increased pricing sophistication — is also providing the means to deliver it.

Data enrichment

Within this arms race, data have become both a suit of armour and a powerful weapon. On the one hand, insurers are becoming much more focused on marshalling their own, often previously underworked, internal data assets for pricing and underwriting purposes. This is especially the case when these may provide unique customer behavioral or risk insights — often when insurers are allied with retailers, banks or other affinity groups. Equally, many have embraced data enrichment from third-party sources such as customer or claimant identity verification data to strengthen counter-fraud defences. Many are also

moving into the realms of customer behavior analysis, based on customer-facing systems and real-time market data, which are now an endemic part of the wider retail market. In short, the need for proactive data strategy is widely recognized so that the data available for pricing and underwriting decision support doesn't leave insurers disadvantaged as compared with their competitors.

These developments don't only apply to high volume personal lines business. Commercial lines insurers, emboldened by emerging analytics techniques that make it feasible to extract useful pricing and underwriting information from much smaller data sets, are also pursuing this approach to support small to midsize enterprise (SME) business portals, intelligent automation and stronger case underwriting. Similar developments are rapidly making their way further up the premium band into mid-market and even large commercial insurance.

Good for customers

All this is good news for customers. For a start, fiercer competition inevitably drives down prices. But insurers are also looking at how the same data and analytics infrastructure can be used to deliver improved customer outcomes.

We see customer journey analytics being used to improve insurer/client interactions and to deliver more relevant and highly tuned contents and offers. Mass data enrichment and improved customer data management are enabling "no questions asked" or "few questions asked" sales processes, as pioneered by the likes of One Click Cover in the U.K.

In general, the data are enabling insurers to better tailor the offer, pricing and underwriting to the individual customer while improving the customer experience and outcomes — a win-win. The best insurers are most advanced in recognizing and driving this virtuous circle.

The mechanics of pricing sophistication

So that's the increasingly public face of insurance pricing and underwriting. But a lot is going on behind the scenes to make this all happen and to maintain insurers' future readiness.

In the pricing function there's more dynamic pricing based on agile and short-cycle decision making, with real-time

Q1 2019 Industry Theme

Pricing and underwriting: An insurer's core competency



algorithms increasingly making use of current market data (see this guarter's thought leadership from Neil Chapman). In the underwriting function, there is greatly increased analytical support for decline rules, underwriting scores and manual intervention, with considerable use of data enrichment within this, and more agile and proactive management of footprints and rules. InsurTechs need to play into these environments, supporting and enhancing, or extrapolating these established trends.

As such, an important current challenge for insurance pricing and underwriting departments is identifying, proving, sourcing and transforming risk factors from open source data, particularly in this era of open government data resources. With insurers needing to marshal external data sources across many different aspects of the risk including geography, customer and risk characteristics - we have seen the emergence of data aggregators who serve the industry by bringing together diverse relevant external data sources into a "one stop shop" for insurers, enabling real-time integration with insurer pricing and underwriting systems.

Our first featured InsurTech, HazardHub, does just this. In addition to aggregating property-level data, they also build out their data sources regarding natural and man-made

peril risks in the U.S. into digestible forms and scorecards so insurers can access a comprehensive view of the potential hazards associated with a property and use them in a more actionable and accurate approach to risk pricing.

Harnessing the Internet of Things

Another area that has attracted a lot of interest, and where InsurTech looks likely to have a substantial role to play, is the Internet of Things (IoT) and its application in - and to - monitored insurance.

The IoT perhaps first manifested materially in the insurance industry in the form of motor telematics policies (usage-based insurance) based on onboard monitoring devices. Monitors, within and around insured items or locations, are not a new thing, but advancing technologies have reduced costs and enhanced analytics capabilities and connectivity to the point that "monitored risk" insurance has become a thing

The information received from monitors provides far more granular data on which insurers can make more sophisticated pricing and underwriting decisions. In motor insurance, this veers toward information on

Q1 2019 Industry Theme

Pricing and underwriting: An insurer's core competency

acceleration, braking, cornering or speeding behaviors, which are correlated with risk. In marine insurance, cargo tracking and monitoring can support risk authentication in traditional coverages and are also opening the way to parametric and blockchain-enabled products.

The promise for pricing here is that more granular data, allied with advanced analytics, enables better risk selection and improved profitability through identifying low risk policies not identifiable by insurers having non-monitored data assets. It also promises benefits through customer self-monitoring and feedback, enabling customers to control their own levels of risk, whether this is through different or safer behaviors and practices. It is important to make a distinction here between monitored risk insurance generally and monitored risk propositions specifically.

The take up of motor telematics policies, a monitored risk customer proposition, has been greatest among highrisk customer segments in which affordability is an issue and the incentive to control risk and premium amount is greatest. So in the U.K., motor telematics have seen high rates of take-up among drivers under 25, who are involved in the most accidents per segment of the population and for whom premiums represent a big dent in disposable income.

Monitored risk propositions are far less attractive to lower risk customers for whom the perceived downside of being monitored and the prospect of ongoing interaction with the insurance industry, which isn't high on most customer's list of favorite pastimes, does not outweigh the magnitude of cost savings.

So for insurers, having access to demographic, behavioral and claim risk data is a benefit in pricing and underwriting but also in product and proposition development, as one size does not fit all when it comes to policyholders. Our second featured InsurTech, Concirrus, plays squarely in this space by providing marine and motor (re)insurers with access to real-time accumulation data and client fleet behaviors. The dynamic data allows (re)insurers to better understand their exposure, pricing adequacy and where they can proactively manage risk to reduce loss ratios and improve overall portfolio profitability.

Our third featured InsurTech, Root, takes the idea of monitored risk further and combines it with the notion of providing an app-based central point of contact for the insurance customer (app-based insurance), making use of the capabilities of the smartphone as a sensor for motor monitored risk data collection and facilitating a digital claim process.

Areas of caution with pricing revolutions

It is worth noting that all of the improvements and changes we are observing in the pricing and underwriting arena do not occur in a vacuum. There are implications for the broader insurance pool itself. There is an extremely fine balance between pricing the risk as close to the risk itself while maintaining the integrity of the concept of shared, pooled risk. If one's pricing goals are to get as close to individual risk itself as possible while maintaining a sensible profitable margin, then there is a risk, ironically, of dividing the risk pool into those who cannot afford to buy the insurance policy that reflects their risk and those who may no longer feel the need to buy insurance. There is real profitability in the delta between good and bad risks when pooled together. The trick is arguably to price risks right as features of a micro-risk and a macro-pool.

For insurance companies that wish to remain niche and target a common risk pool, there is sense in understanding their written risks better to stave off disruption from outside. But for larger carriers maintaining a healthy portfolio with truly affordable policies for all manner of risks, this can only really be achieved by spreading risks across the broader portfolio. Achieving this balance in the brave new world involves truly understanding how to make the best of the resources around us while making sensible commercial decisions.

Larger footprints

To a certain extent, you could say that in many markets InsurTech found its feet in pricing and underwriting. Having established that foothold, its footprint continues to grow larger and larger. With certain parts of our industry under such intense pricing pressure at the moment, we hope that this briefing will offer further insight into areas in which technology may help ease pricing pressures and improve underwriting results.

Pricing and Underwriting InsurTech Subsectors

Knowing the market



Fundamental to understanding the risk and the individual/ risk vector itself is the awareness and understanding of the geographical and strategic landscape in which the risk resides. This, in our view, is two-fold: 1) understanding the actual geographical market, and 2) understanding the strategic landscape.

Geographical nuances, geographical demands

Indisputably, geographical concerns are already considered in contemporary insurance pricing. From postcodes to countries - expectations of insurance, data quality and quantity, and loss experience all vary and, with them, how the insurance is priced, even for established insurance players. However, there can still be significant enough barriers to entry in individual markets to prevent access. The reasons for this are plentiful (too many players, little room for growth, high acquisition costs) but it could also be due to a lack of understanding of the geographical nuances and of the relevant data for the specific market.

One means of achieving access to markets is through leveraging new geospatial data. With advances in deep learning and machine learning, it is possible to analyze a multiplicity of data points and extract new data sources previously inaccessible by insurers, such as roof conditions or flood plain location.

In doing so, insurers gain a greater understanding of the market they are looking to write in. The data can then be considered and analyzed alongside an insurer's proprietary insights to give an insurer a robust and multisourced perspective on the risk.

Changing risk environment

As insurers increasingly leverage data from previously untapped sources, a regulatory minefield begins to emerge. These regulatory obstacles, which in some instances have yet to be encountered, could result in a level of trepidation on the side of the insurer in dealing with emerging data sets.

To confront this, regulatory bodies such as New York's Department of Financial Services have released new guidelines detailing that social media posts can be used to calculate insurance premiums, so long as the information does not unfairly discriminate or include bias against protected groups. This shows a positive step toward the acceptance of new data sources to inform pricing and consumers' ability to better understand and challenge the data being used to price their risk. For insurers, though, the ambiguity and limited applicability of these new guidelines is apparent. This regulatory advice extends solely to the state of New York. In addition, no U.S. state has released rules that govern how life insurers are to populate their algorithms informing price.

As regulatory bodies seek to catch up with the fastmoving world of technology, it could be that there will be a mismatch across environments as to what can and cannot be included. Regulatory compliance is at the heart of implementing innovative structures; Artificial intelligence (AI) technology could help bridge this gap to ensure insurers are competitively pricing through appropriate and compliant use of data.





Company case study

HazardHub

HazardHub is a leading provider of property-level geographic risk data sets for hazards in the U.S. Categorizing risks broadly into air, water, fire, earth, man-made and property characteristics, HazardHub then captures, standardizes and models the associated geospatial digital data to create a set of insights on a property.

In addition to leveraging existing data sets, HazardHub has developed a number of proprietary data sets to provide further insights on the risk. This includes some unique data points including sinkhole susceptibility, clandestine drug labs, fire hydrant locations and airport noise. Through a single application programming interface (API), they deliver over 475 hazard risks and 100 property characteristic data elements, including images — all of which can be leveraged by insurers to inform their pricing.

Insurers have typically relied on data they deem to be relevant to the risk that they are writing. HazardHub is looking to move insurers away from this nearsighted approach to underwriting and use hazard data variables beyond the basic identified needs. In building up a pool of data points and variables on a property, insurers gain a greater predictive understanding of the risk and, in doing

HazardHub in action 637 Hibiscus Glen, Escondido, CA, 92025 – the basics

Nearest Fire Station 1.1 Miles

Fire Station Name Escondido FD Station 4

Fire Station Staffing Full Time Escondido Fire

Protection Zone

Number of Fire

Stations in 5 miles

Nearest Hydrant Less than 250 Feet

Number of Hydrants in 1000 Ft 18

AAIS Fire Protection Class P2

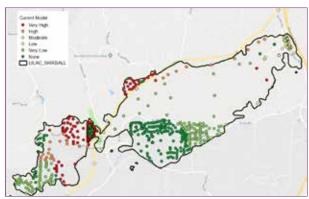
Distance to Coas 13.48 Miles

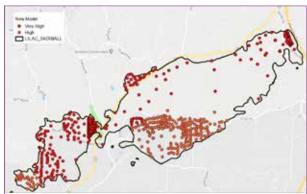
Geocoding Accuracy Rooftop



so, they could realize new risk factors that may damage or harm a property. To achieve this, HazardHub uses an A to F rating matrix. This categorization of risks into an accessible scorecard, which strips back the complexities, gives insurers a comprehensive view of the potential hazards associated with a property and enables a more actionable and authentic approach to risk pricing.

Bastrop, TX fire results Bastrop fire fuel load - WUI model





Fuel load- WU	model	HH advanced model		
Risk	%	Risk	%	
Very High	16.48%	Very High	40.76%	
High	0.77%	High	36.63%	
Moderate	9.69%	Moderate	20.89%	
Low	11.94%	Low	1.72%	
Very Low/none	60.94%	Very Low/none	0.00%	

Notably, HazardHub only charges insurers by the bind or by the transaction — believing instead that access to more informed data insight should be available to all. It also demonstrates a confidence in the power of their data insight and the value they can bring to the pricing and underwriting process. This is further underscored by the fact that HazardHub allows customers to access the algorithms and data variables used to build their models. This enables users to manipulate the variables that they use to price and build a customized data model for their chosen market.

Pricing and Underwriting InsurTech Subsectors

Knowing the risk

The more frequent analysis of contemporary data to inform underwriting has become an integral part of the modern day pricing process. This is supported by a reliance on probabilistic theory and analyticallydriven insight over, or in support of, experience-driven judgement. These data-driven insights are derived from first-party data - the personal information accrued directly from policyholder, risk studies, loss history and claim data – all of which are analyzed and potentially enriched with other third-party data sources to inform the price they attribute to the risk in hand.

For some policyholders, particularly in less sophisticated markets, a perception remains that the purchase of insurance can be a convoluted and lengthy process that attempts to expose relevant details through a number of questions. There exists an embedded misalignment of ambitions: Some insurers want to obtain as much information as possible on the risk, while some customers hold an interest in insurers underestimating their risk in order to avoid being overcharged, with neither group truly realizing their aim.

Reasons for this perceived misalignment stem in part from the impenetrability of the pricing process for the insured, and also from a reliance on insights delivered by the insured and the veracity of them. The latter will be considered here.

Increasingly, third-party data has been leveraged to inform underwriting and augment the accuracy and authenticity of the insights being delivered; this, in and of itself, is not new. However, with the explosion of big data, Al, blockchain and loT-driven insights, and the growth in companies leveraging them, we are seeing a multiplication of the number of statistically significant variables that can feed into a price. For example, in leveraging big data a number of carriers have found a statistically significant link between individuals who hold life insurance policies and safer driving. The promise of these technologies being able to provide real-time, dynamic data feed - and transforming the pricing process from one of retrospective insights based on historical data to one which retains those initial insights to create a more holistic view of the risk profile that an insured presents – is very powerful.

This shift in perspective means that the insurer can be more critical and precise in the variables that they wish to consider to determine behavior and risk pricing and, with it, create a more competitive and accurate price.

Big data: smart data

There is a mountainous quantity of data at our fingertips. It would be naïve, however, to assume that with more data comes greater quality and greater insights. Insurers may therefore feel under greater pressure to be more strategic in the data they choose to leverage and source. It will not be a process of obtaining all that is relevant but a deliberate and calculated process of unpacking the real insight through continuous testing and observation.

We cannot talk about personal data collection without mentioning regulation. How will fairness and discrimination principles be enforced as we move toward an increasingly granular and individualized assessment of a policyholder's risk profile? Or how will we continue to enable individuals to have the right to "informational self-determination"? Facebook blocked a U.K. insurer's attempt to analyze language used in Facebook posts as an indicator of driving quality. Is it possible that in the future insurance companies will be penalized for using social media profile data? Will further laws be introduced to confront this as New York's Department of Financial Services has done?

Nonetheless, increased access to third-party data, dynamic and real-time data feeds, and IoT-derived insights, to name a few, will undoubtedly result in a pricing process that will be able to accurately assess an individual's risk profile without heavy reliance on an insured's own provision of data.



Concirrus &

Company case study

Concirrus

Founded in 2012, Concirrus is capitalizing on the growing use of AI and machine learning to process and analyze vast quantities of data to understand the underlying behaviors of risk. The insights derived from robust data analytics provide (re)insurers with improved risk selection, accurate pricing, dynamic portfolio management and realtime risk management all within a single, unified platform.

Quest, their leading insurance data platform, enables (re)insurers to:

- Optimize their existing portfolio through dynamic data analysis
- Improve risk pricing and selection when writing new business through dynamic portfolio management and predictive analytics

Optimization: dynamic data

With increased availability of historic and real-time risk data, better connected assets and a growth in Al and machine learning insights, insurers can obtain more accurate and transparent data to help identify new correlations in their portfolio.

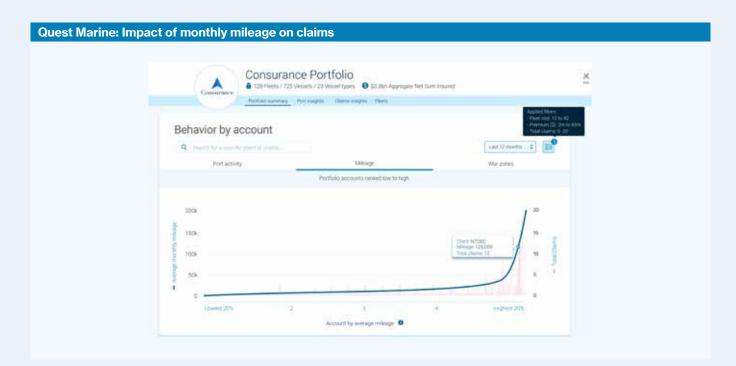
For Concirrus, in Quest Marine, this sees them analyzing static demographic vessel statistics (including, but not limited to, class, flag, year of build, shipyard and tonnage) and combining it with historic, real-time and predictive behavioral data (such as mileage, days at sea, areas of operation, average speed and more) to determine the correlations and risk indicators associated with a fleet.



These static and dynamic data insights are then combined with insurers' claim data to unearth areas where they can reevaluate their portfolio pricing based on actual fleet risk, areas of operations and activity rather than predicted risk.

For example, the platform can determine if a vessel enters a war or ice zone and, when it does, can trigger the appropriate policies that reflect the time spent in the zone. In doing so, it provides the appropriate and correct coverage required by the insured without enforcing a price premium across their entire policy.

Rather than embedding an inherent bias in beliefs that a certain behavior is good or bad, the platform simply floats to the surface the risks that resulted in claims. Much like Google's search algorithms, Concirrus' core technology reacts to real-time changes in the data. They provide an underwriter with the tools to interpret risk in ways not previously possible and, in doing so, transform a traditional business from technology laggards to technology leaders.

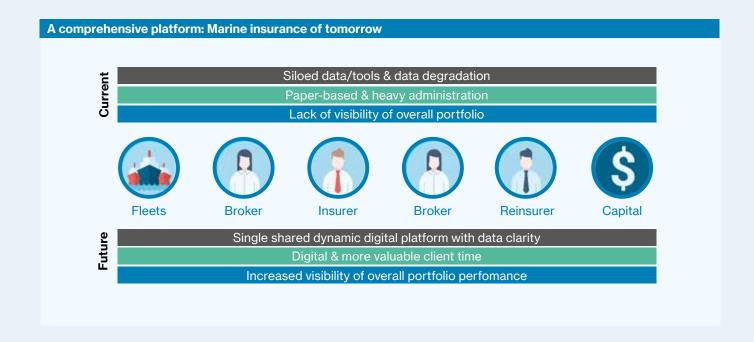


Opportunity: predictive analytics

By leveraging AI and machine learning algorithms, Concirrus can analyze insurers' existing portfolios to help them better understand their projected loss ratio and enable them to have a better understanding of how to construct their portfolio in the future. By enabling a granular level understanding of their risks, insurers can better manage their portfolios and create a pooling of risks that better reflect their risk capacity.

Concirrus' Quest platform is currently used and trusted by global marine and motor (re)insurance organizations, but the traction it has achieved is due to the technology's applicability outside of these markets.

In September 2018, they raised \$6.58 million in a Series B funding round with Eos Venture Partners and IQ Capital Partners participating. The latest round of funding takes the total raised to just over \$15.5 million.



Pricing and Underwriting InsurTech Subsectors

Knowing the individual



With the increased availability of technology, there has been a transition toward a switching economy. In the U.K., this has resulted in an explosion of price comparison websites; other geographies and regions have been slower to adopt these types of comparison tools. Driven by the ease of switching insurance companies, margins have been squeezed as customer retention becomes more difficult for a number of carriers.

There is a held perception by some in the buyer's market that the missing link in all of this was the democratization of the insurance for the insured. It could be argued that insurers continued to price based on aggregated historical data and insights derived from it – the insureds' identity was largely absent. Technological innovation is working to shift this and better reflect the individual insureds in the financial product that they are buying.

Ambiguity and complexity

Perception has been that insurance has largely relied on policyholders having an ambiguous understanding of their own risk. Premiums would rise, policy coverage would change - with the insured largely having little to no understanding of why.

The fault of this cannot solely be placed at the feet of the insurers. However, through the proliferation of connected devices (IoT, telematics, wearables, sensors) the insurers now have increased access points to derive and scrape proprietary data insight from the insured. This enables them to better understand the risk that an individual represents: who they were, who they are now and how their needs have changed. In having a precise and granular way to understand their customers, they are able to better understand what risk they represent and how valuable they may be to the insurance company as a financial asset. Sequentially, the insured (or would-be insured) can also often access this data, and may similarly have a better view on the risk that they represent to the insurer.

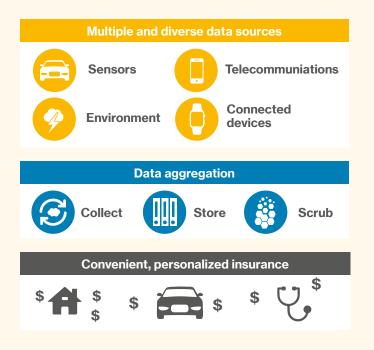
Rather than making a retrospective assessment, insurers are able to take a real-time look at a specific risk. This also enables insureds to understand their own risk grading, captured in real-time, and then understand how their actions are feeding into their risk profile and affect their premiums through changes in behavior. In doing so, the role of insurance shifts from being a customer of insurance to being a user of insurance, whereby insureds have a reason for their engagement with their insurer and, in turn, the insurer has an opportunity to positively influence relationships and their customers' risk profiles.

While none of this is particularly groundbreaking or even new, consumer expectations have changed and continue to change. It is important to recognize the social demand for transparency and fairness. Consumers typically do not mind giving up their personal data if they can see direct value being attributed to it (normally in the form of a price reduction or improved service offering). In the age of cheaper technology, openness of data and changing consumer expectations, the relationship between the insurer and the insured is changing - it is far more open, reciprocal and better described as a two-way relationship. Carriers that do not embrace the technology that supports this type of relationship could find themselves at a competitive disadvantage.

Sustainability

The question remains how sustainable this is as a marketwide initiative. Insurance works on the aggregate and relies on the law of large numbers to achieve sustainable returns. If insureds become too cognizant of the risk an insurance company attributes to them, do the riskconscious individuals choose to forego insurance entirely and instead chose to absorb the risk themselves? This anecdotally extreme example is unlikely to occur en masse, but will this individualization impact how insurers pool risks together?

Figuring this out will involve complex value judgements to understand what trade-offs remain the most important for the insured and for the insurer (e.g., privacy over personalization).





Car insurance in the eyes of Root is an industry that needs to be reinvented - rates are assigned based on demographics largely beyond an user's control (location, age, and so on) and insurers tend to use a blanket approach to pricing by collating the driving records of all drivers to determine the appropriate rate. Root, the first entirely mobile/app-based motor insurer in the U.S., has reversed this traditional proposition by using mobile phone technology, machine learning and telematics to set insurance rates based primarily on driving behavior. Analyzing driving variables to assess the risk a driver poses when behind the wheel, including braking, turning and phone use while driving, Root uses its proprietary algorithm to identify and offer policies only to those drivers categorized as "good."

To get a customized quote with Root, the company asks drivers to complete a test drive that lasts two to three weeks monitored through their smartphone. This process, combined with the insights derived from its proprietary algorithm, enables Root to slowly reduce their reliance on demographic variables in the pricing process and move toward one that is increasingly based on real-time, observed behavior. Because Root doesn't insure bad drivers, the savings for good driving can be substantial according to Root, good drivers save up to 52% off their current rates and, on average, they save approximately \$100 per month.

Driving score is the leading factor in Root's pricing **Traditional** Root's pricing model pricing model VS. **Driving Score** Age Other **Bureau of Motor** (marital status, gender, Vehicle Records zip, vehicle type, prior Credit insurance)

Simplifying claims

This digital proposition extends to the claim process. Any claims that need to be made can all be done through the Root app. By using photography, Root confirms the claim and then leverages the appropriate resource. For example, for a windshield claim, the app can schedule an appointment with the repair company, and, if your car is being repaired, it may offer a rental car or Lyft credits.

As of Q4 2018, Root had written more than \$100 million in direct premiums and downloads of the Root app have grown 60% month-on-month since November 2016. They have raised more than \$177 million in funding and their recent Series D round of \$100 million was led by Tiger Global Management, with Redpoint Ventures, Ribbit Capital and Scale Venture Partners all participating.

Root is currently licensed in 24 states, with plans to be nationwide by 2020.

Where they are and where they will be

Root is currently licensed in 24 states with plans to be nationwide Where they are Where they will be

Incumbent Corner



Discovery Vitality – the 20-plus-year-old InsurTech 'start-up'

Interview with Barry Swartzberg, chief executive officer of Vitality Group, and co-founder of Discovery

By Greg Solomon, head of Life and Health Reinsurance, Willis Re International



With a focus on InsurTech, and particularly on the pricing aspects of that ecosystem, Greg spoke to his fellow South African Barry about Discovery (the insurer) and Vitality (its paradigm-changing wellness program and brand).



Greg: You know, Barry, I remember starting work as an actuarial student years ago, having to pay for my health insurance through a "medical aid," and watching my meager salary being swallowed by 20% plus annual increases in medical aid contributions. And then a product called Discovery came on the scene. Not only were their premiums lower, but annual premium increases were much lower, and there began a rapid migration of companies to this new health insurance concept. Now, barely 20 years later, you're insuring millions of lives in over a dozen countries.

Barry: Yes, from what was only a concept 27 years ago, to a multinational financial services organization - health care, life assurance, short-term insurance, savings and investment, banking and wellness - covering over 10 million people in 19 countries. It has been a very interesting journey.

I'd like to start by asking you what's your 30-second elevator pitch for who Discovery is, and what/who Vitality is for?

Discovery was started with the core purpose of making people healthier. Initially it began as health insurance, but the Vitality business model grew out of that, incentivising and rewarding healthy behaviors. Vitality makes our clients healthier by rewarding them for positive behavior changes, like exercising, eating healthy and going for preventive screenings. The financial impact of the resulting improvements in life and health create an actuarial surplus that is used to further fund the incentives that drive additional positive behavior change.

So a self-sustaining loop?

Yes. A loop of shared values that create benefits for the member (increased value, better health) and for the business (fewer claims, greater profitability, healthier risk pool) and for society (a healthier and more productive workforce). We call it Vitality Shared-Value Insurance – a model being used in 19 countries through partnerships with some of the world's leading insurance organizations.

When people talk InsurTech they often limit their thinking to new start-ups. Discovery and its Vitality business model, on the other hand, have been around in various forms for over 20 years, using wearables and creating a health ecosystem for much of that time, but still you continue to innovate like many of these new companies. How do you see yourselves?

Innovation is ingrained in our company culture. Contrary to the popular view that innovation is spontaneous, we think it needs to be institutionalized. This is shown in our business through various calendar-based innovation events, such as our annual September product launches, where we introduce innovations across our businesses. As a result of this discipline, we have introduced over 150 product innovations since 2013.

Our core purpose of making people healthier has led us to understand that within the most complex matters of life, death and money, there is a common strand: behavior. It turns out that four poor lifestyle choices are responsible for 60% of the world's preventable deaths and 80% of the disease burden. Similarly, five financial behaviors explain 80% of credit default risk and why people don't have sufficient retirement savings, and five driving behaviors explain 60% of fatal road accidents. Our approach is to use incentives to change irrational lifestyle choices, employ technology as an enabler, and integrate this into financial services. Applying this fundamental concept and model to different behaviors, in different markets, has enabled us to innovate while remaining true to our core purpose.

You've partnered with a number of companies around the world: AIA in Asia, Ping An in China, Sumitomo in Japan, Generali in Europe, John Hancock in the U.S. Ignoring the similarities in your offerings around the world, can you tell me about the differences in how Vitality operates?

While the principles and overarching structure of the Vitality business model remain the same, the offering is tailored to each market to suit the needs of each environment. That said, there are key differences.

Some markets have a full Vitality program (including gym benefits, travel benefits, healthy-food, device benefits, health checks, and so on) similar to the mature and welldefined model in South Africa. Other markets have lighter versions of the program, which typically contains what we call Active Rewards (which I'll talk about later), health checks and the device benefit.

We also have Rewards Partners, who are entirely marketdependent. We typically aim to partner with well-known brands with a large footprint in each market. For example, the rewards partner for the flight benefit in Australia is Qantas, whereas in South Africa it's Kulula and British Airways.

How do you go about choosing an insurance partner?

I think we will need more than a few minutes to talk about this!

After having done this so many times, and having gone through the process with many other companies, suffice it to say it's a detailed and comprehensive process. But I will try summarize it as follows:

We start with market scans, sometimes assisted by a partner of ours. This gives us information on political, economic and legal climates. Then we do an initial scan within each country in terms of which insurance companies could be ideal candidates for a Vitality partnership and enter into discussion with them. For those who are interested to take this further, they will enter the business case phase where they complete metrics and information on their product lines, product mix, loss ratios, new business growth, membership numbers and profitability. We then do a final due diligence and make our choice from there.

Although Vitality is fundamentally a wellness offering, underneath everything it comes down to data. Right?

Well, I can see why you say that. But we like to focus on the end-consumer and not on the data.

Yes, of course, huge amounts of data come out of the Vitality program, and yes, the data both incentivizes and measures the behaviors and the results. But if we go back to the core of why Discovery was set up in the first place, it's about making people healthier. We like to think that underneath everything, it comes down to improving the behavior of our members. And from this process, data is a result.

How has your data capture evolved over the last 20 years?

As the ways of engagement in wellness, and benefits and rewards of Vitality expanded over the last two decades, the sources of data multiplied. We have kept up with this

by incorporating all of the data generated by Vitality in our data warehouse and also made it easier for our members to submit data automatically. This might include their jog automatically feeding into our system through their Apple Watch, or their gym's computer system automatically notifying us that they checked in for a workout.

Over time we have actually been able to see the impact of wellness engagement on health, and we now have compelling evidence of the health benefits of exercise, nutrition, good driving and illness prevention.

Also, privacy laws have changed significantly over the last two decades, and we've always ensured that we have appropriate consents and adopt state of the art security measures to protect members' personal data.

We never collect or use data without explicit consent from the member. We obtain rights to access and use the Vitality performance and related actuarial or insurance data in compliance with applicable privacy and security regulations and best practices. Anonymized data and metadata is used to develop our products from the behavioral insights obtained. The Vitality 1 platform - which is a global technology system for gathering and integrating data lets us collect the data across the globe with our partners in addition to solutions across the discovery group. Our data set is growing in scale and will accelerate into the future as more markets go live. And yes, there will be more markets beyond our current 19!

Initially your pricing might have made reference to external data, but you've accumulated a huge amount of internal data since the program began years ago. Do you still make reference to external data, or is it totally "data self-sufficient"?

Actually, we have never really depended on external data - Vitality generates so much rich data within the program itself. All of the data that we use is provided by our members, or, for instance, their doctors (again, only with their consent).

So no external data sources at all?

There are some very specific and limited circumstances that we obtain data externally, and always with member consent. An example might be credit scores in the context of an application for a credit card.

Machine learning, neural networks, AI – these are buzzwords from the fintech world, but given the huge amount of data you collect each day, how necessary and how advanced are these tools for you at the moment?

We have considerable data from across our markets - all saved into our secure data warehouse. Given this, we most certainly require the use of the most advanced analytical tools available, including machine learning, neural networks and so on.

And the people?

Exactly! We try to keep our focus on the people and not on the data. And in this case, it's about the people dealing with the data. We have been growing a team of highly talented data scientists and actuaries - not only to apply these tools to the most demanding modeling projects, but also to interpret the results and apply it to behavioral analysis. The types of problems that we're trying to solve include exploring the link between nutrition, exercise and the prevention of chronic disease, and exploring the ways in which incentives and rewards visibly help people to change behavior to avoid chronic conditions.

We understand that telematics devices that measure the quality of your driving can have immediate impact: bad driving now could mean an accident now. But for wellness, good and bad habits (like exercising versus smoking) can take a long time to materially impact on your health. How does that play out within Vitality?

Human behavior is difficult to shift, as people tend to think in the short term and ignore the future. For example, if we compare health care spending with good behavior, the former has immediate benefit with delayed costs, while the latter has immediate costs but only a delayed benefit.

While many current programs or apps just nudge people toward healthier choices, Vitality's insight was plugging this approach into insurance systems, so that tangible value could be generated, captured and shared.

But don't assume that the benefits are imaginary, or somewhat delayed. We've actually seen fairly rapid improvements in health through our program. For example, a three and a half year engagement study showed that, among Vitality members, hospital admission rates are 10% lower; chronic conditions are 27% lower, and cancer prevalence is 19% lower (compared to a nonintegrated population).

Current trends have also provided opportunities for further innovation. For example, the emergence of wearable technology allows people to accurately measure and track many aspects of their wellbeing. This led us to a solution called Vitality Active Rewards, a platform for dynamically tracking and rewarding physical activity. It gives clients physical activity targets based on their unique profiles and rewards them with food and beverage discounts at top brands – enabled through apps and approved fitness devices.

We have found that the short-term nature of these goals (adjusted and rewarded weekly) has been profound in shifting behavior.

You give advice to your members and you incentivize good behaviors. But our understanding of the human body is progressing rapidly, with genetic testing now being done as home-testing kits, people making huge leaps in health with low carb/keto-style diets, HIIT (high intensity interval training), massive amounts of data on what really improves sleep quality, and so on. How does Vitality decide when to start recommending health-based changes that go against accepted wisdom - but still seem to be getting excellent results - or when it might (or might not) just be a fad?

The world of health prevention and promotion continues to evolve at a rapid pace. Vitality has always focused on being an evidence-based business. Having grown out of the health insurance sector, the clinical skills in assessing and evaluating new technologies, trends, treatments and screening techniques have been developed as core competencies. In addition to this, we have developed partnerships with various global experts across a multitude of disciplines who help inform our recommendations. Furthermore, we utilize clinical guidelines from credible bodies in the various regions that we work with.

What do you think is the next big leap for wellness - that technology hasn't quite enabled, but perhaps isn't far away?

Vitality spans multiple industries in driving better wellness outcomes, and we partner with many leading businesses globally. While there are probably many exciting things on the horizon, the field of AI is the area that will fundamentally shift the way we predict and manage health risks and incentivise behavior change.

Where does promoting health improvements reach its limit? What happens when you are healthy relative to a baseline and getting a discount, but now people are generally healthier, and the baseline is now as healthy as you?

We are a long way from achieving perfect wellness at population level. There are always new members joining Vitality, and almost everyone, regardless of whether they have been with us for years or have just joined, has room to improve their health and wellness. But even for the most engaged and healthy members, their challenge remains to maintain healthy behavior as they grow older - the natural tendency is unfortunately for people to exercise less over time. Incentives and rewards are equally necessary for starting and for maintaining healthy behavior.

As such, Vitality's job is never done.

Barry, this has been great. We really appreciate your time.

No problem Greg, it's always helpful to remind ourselves why we do this. And we're very pleased that, in spite of being over 20 years old, we still fit in the young-sounding InsurTech category.

Technology Spotlight

Radar Live: Real-time pricing at the point-of-quote



A new dimension to competitive insurance pricing

Radar Live is Willis Towers Watson's home-grown real-time pricing system, which brings together all the elements of an insurer's pricing analysis and implements them directly at the point-of-quote.

This capability is already transforming some insurance markets. For example, more than half of U.K. motor insurers by premium, a market in which Internet price comparison sites are hugely influential, license Radar Live. As the competitive pressure intensifies on other personal lines and some commercial insurers to get their rates to market more accurately and rapidly, the technology is attracting growing interest from around the world.

Radar Live sits at the sharp end of Willis Towers Watson's suite of pricing analytics software, including Emblem (predictive models), Classifier (analysis of geographic risk), Radar Base (scenario testing and management information), and Radar Optimiser (customer behavior analysis), all of which are designed to meet the needs of a modernizing insurance industry. Together and individually, they incorporate an expanding range of machine learning algorithms and use standard IT protocols to allow integration with existing administration systems.

All the products in the suite are designed by insurance professionals, working in conjunction with data scientists and expert programmers. This ensures that software features and developments are geared toward the operational efficiencies and competitive enhancements that we know from direct experience can and will make a difference to insurers' profitability. In particular, Radar Live supports:

- Pricing speed-to-market, accuracy and agility
- A pricing strategy built on deep data analysis and insight
- A full range of pricing approaches, such as data enrichment, granular risk models and individual policy price optimization (in markets where it's permitted)
- Rapid reaction to market developments
- Reduced risk of costly errors at a time when market pricing is becoming increasingly transparent
- Robust audit and governance controls
- The use of customer lifetime value metrics
- Scalable delivery of up to hundreds of millions of quotes per day
- Cost-effective processing, with hosted and cloud options.

Radar Live allows data to be used more effectively to make improved business decisions - an essential quality in the ever-changing insurance landscape.

Radar Live offers analytics and Implementation in a single environment Every exact model Rating algorithms Price optimization algorithms Underwriting rules **Projections** Policy admin Radar Live Radar Base Enhanced metrics and system Business Intelligence

Thought Leadership

Pricing agility comes to the fore

By Neil Chapman

Neil Chapman is global product leader - Pricing, Product, Claims and Underwriting in Willis Towers Watson's Insurance Consulting and Technology business.



Retaining flexibility and control of pricing is critical to remaining competitive in modern insurance markets. Choosing the right pricing ecosystem is at the very heart of understanding and evolving an insurer's market position.

Pricing is at the heart of every insurance operation, which is why insurers are increasingly investing in ways that will help them price in a more agile way. Until recently, price development and refinement for volume lines of business were difficult and often involved substantial IT costs. However, new technologies and methods are lowering barriers to innovation and insurance companies are increasingly realizing that faster, better pricing is rapidly becoming more of a necessity than a luxury.

This is manifesting itself as the latest generation of pricing tools. They exist within developed markets where there is an expectation that companies use more sophisticated methods to attract and retain the most valuable customers. Each company operates in a highly competitive market where deregulation is occurring and cross-subsidies are being rapidly removed.

Growing profit and volume

Competitive pressure over the last decade is reflected in how insurers' pricing methods have developed beyond simple claim models. They are now highly complex models overlaid with refined customer lifetime values that are enhanced with machine learning methods whose role is to consider portfolio goals.

Most insurers in the majority of developed markets use this approach, leveraging up-to-date customer information that spans all product holdings and is combined with rich external data. As competition ramps up globally and as insurers try to gain volume while remaining profitable, it means that they are significantly increasing their investments in pricing budgets - and talent.

It also means that the relationship with up-to-the-minute sales information is changing. While this information is common to direct insurers, it is increasingly available to intermediaries and insurers of small to mid-size businesses where the focus is shifting attention toward pricing agility. Insurers in regulated and emerging markets are looking to realize the benefits that can be achieved by being able to adjust prices within hours.

Get value for your money

This flexibility demands an investment in pricing systems. Understandably, insurers want to see significant benefits from these investments that will ensure they remain competitive, but processes will need to keep pace with this change.

Traditionally, pricing teams analyzed historical data to determine appropriate rate changes. The rate changes were then passed to a rate deployment team for implementation using a rate engine.

These rate calculations within policy administration systems were operated and maintained by the IT functions of insurers and intermediaries. In many cases, the process to update pricing parameters was time consuming and undertaken at least monthly. However, implementing enhancements to the rate algorithm beyond parameter changes - such as adding new factors or modifying the nature of the algorithm - was often a lengthy and expensive process, with time frames extending to years and costs stretching into millions.

This traditional approach tended to limit or delay the return on investment in new data sources, and deflect insights and model enhancements identified by the pricing team. It also limited the ability of a company to use a test-and-learn approach (underpinned by robust analysis), which was becoming increasingly necessary in more sophisticated and transparent markets.

Adopting a more agile approach to pricing requires companies to decouple rate deployment from the regular IT change process and put the control of pricing and price changes back in the hands of the pricing and underwriting teams. This approach emphasizes pricing agility – supporting the need to change prices and rate algorithms frequently and easily - and allows companies to more quickly deploy enhancements and make rapid changes within an ever-moving market.

Key benefits

An agile pricing system provides numerous benefits. In addition to implementing pricing strategies in real time, it has become clear that they can deliver a wider range of benefits to insurers and intermediaries.

Key benefits include:

- **Pricing sophistication** the ability to realize enhanced profitability from sophisticated pricing decision support and flexible pricing approaches, including the use of wider data sources, machine learning methods and the ability to deploy multi-product or multi-brand pricing strategies
- **Speed to market** increased pricing and portfolio management agility, enabling insurers to analyze management information, reach decisions and execute them within a day (or, if required, within minutes)
- Operational efficiency significant cost reductions through effective, rapid and accurate delivery of rates from conception to production
- Accuracy an integrated workflow, including audit and security for governance, significantly reducing the risk of errors in pricing

Beyond personal lines pricing

Commercial lines

Rapid, agile pricing is a business necessity for many personal lines insurers. However, with companies tasked with getting even more returns from increasingly competitive personal lines, companies are looking at commercial lines for increased profitability and growth.

In commercial lines, rating and underwriting approaches are evolving and becoming increasingly tailored to customers and supported by robust analysis. As insurers look for material gains in commercial insurance, there is an increasing need to supplement traditional underwriter-led pricing with modern pricing techniques. Having an eye on the future and investing in agile systems will be key to controlling future IT spending while maximizing the opportunities from commercial lines.

Claims

Claims also offer an opportunity for material gains in process improvements, and we are seeing insurers investing in their claim process to implement a data-driven approach. Even within highly regulated markets, claim assessment and triage offer an opportunity to deploy the latest analytic techniques.

Insurers are implementing machine learning methods at key stages of their claim process to deliver enhancement and cost savings throughout. In many cases, insurers are using the same agile pricing technology to create and deploy analytical models into their claim function, making it easy to update and enhance their predictive models and decision processes.

Life insurance

Life insurers have traditionally been slower to adopt agile pricing approaches, but this is changing fast as markets continue to become more competitive and customers become more demanding. The market is changing fastest for protection type products where premium size is a key factor in the purchasing decision. Insurers who can change prices quickly and easily, make use of new data sources or easily add new rating factors can gain real competitive advantage and better meet consumer needs in both slow and fast moving markets.

Take control of pricing decisions

For many years, pricing teams wanted to take control of their pricing, and now that is becoming a reality. With the right investments, new developments in software and infrastructure are allowing these teams the agility required in a modern market.

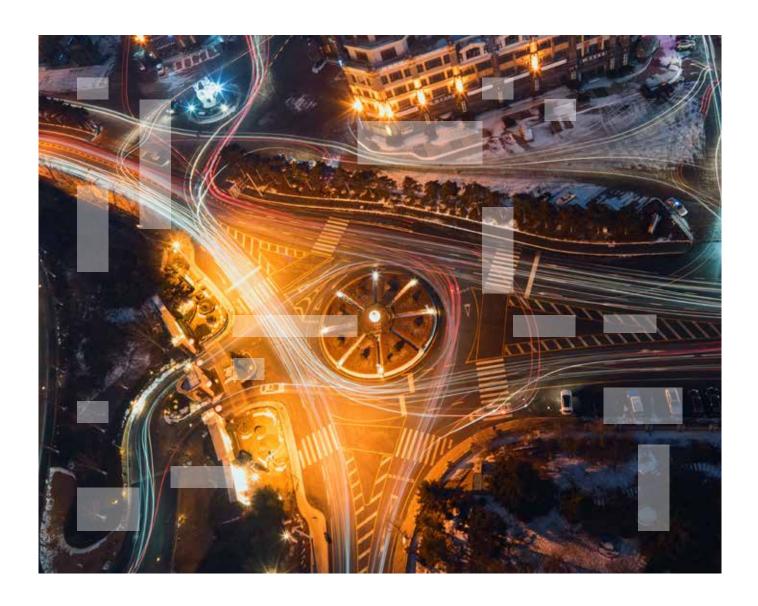
Global market demand is high, and Willis Towers Watson has participated in many pricing agility projects over the last few years.

So what does an agile pricing environment look like? Fundamentally, it delivers a robust framework to quickly evaluate current rate performance and analyze the impact of any proposed changes. The framework should provide up-to-date insight to support the pricing decision process. Agreed-upon rates should then be deployed quickly and easily without excessive involvement from IT. The approach should provide efficiency and savings, as it renders various aspects of historical rate deployment processes wholly redundant.

Agile pricing may seem a natural fit for a direct writer, but we are also seeing increased interest from insurers that are primarily broker or intermediary writers. Investments in insurer-hosted pricing (IHP) mean insurers can more effectively leverage their IHP investment by deploying agility pricing.

Looking to the future

There are many opportunities emerging in the market as well as challenges, such as potential regulatory intervention. Agile pricing systems provide a good platform on which to embrace these challenges. The systems inherently recognize that flexibility is needed to meet the unknown future, rather than seeking to anticipate what may occur. Companies adopting them will be well placed to adapt to the changing market.





Transaction Spotlight: Pie Insurance

Workers compensation InsurTech Pie Insurance raises \$45 million in Series B funding round



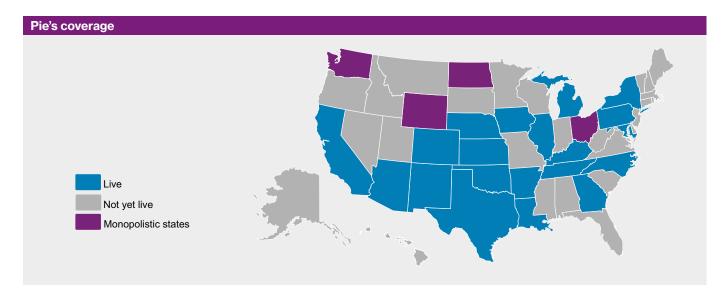
PIE INSURANCE

Founded in 2017, Washington D.C.-based Pie Insurance (www.pieinsurance.com), a provider of workers compensation insurance for small businesses, becomes one of the latest InsurTechs to raise a substantial Series B funding round in Q1 2019. Investors participating in the \$45 million round include SVB Capital, Sirius Group, Greycroft, Moxley Holdings, Aspect Ventures and Elefund. In prior rounds, Pie Insurance raised a further \$16 million, bringing its overall total to \$61 million.

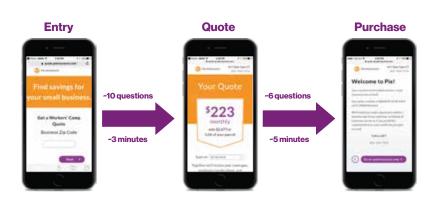
Pie Insurance wrote its first workers compensation policy in 2018. Its mission as a business has been to offer small businesses cost efficiencies through new pricing mechanisms, more appropriate workers compensation products and a very high quality of service. Pie operates as a managing general agency for Sirius America Insurance

Company, a subsidiary of Sirius Group (NASDAQ: SG), offering A.M. Best A-rated workers compensation insurance.

The most recent funding of \$45 million will be used, among other things, to support the company's plans for U.S. state expansion. The funds will also be used to improve the customer experience and expand Pie's current distribution channels. Pie currently offers workers compensation coverage in 20 U.S. states, with more state launches expected throughout 2019. Originally offered in AZ, CO, GA, IL, LA, TN and TX, the product is now available in AR, CA, IA, KS, KY, MD, MI, NE, NM, NC, NY, OK, PA, and Washington, DC.



The product itself is aimed at industries like construction, restaurant, manufacturing, trucking, cleaning and janitorial, landscaping, auto repair, retail and health care. Businesses can go online and provide their contact information followed by their answers to a small number of simple questions to get an online, direct quote in as little as two minutes. The information entered is enriched by third-party data, which Pie Insurance uses to create a competitively priced, robust workers compensation policy.



As a technology-enabled insurance company, Pie leverages extensive, high-quality data sets to algorithmically segment and price small business policies, assessing risks and passing along savings to small business owners. Pie's own proprietary research has suggested that as many as 80% of small businesses could be overpaying for their workers compensation insurance by as much as 30%. Already, thousands of small businesses have used Pie's online quoting engine, with users often seeing savings of over \$1,000 per year.

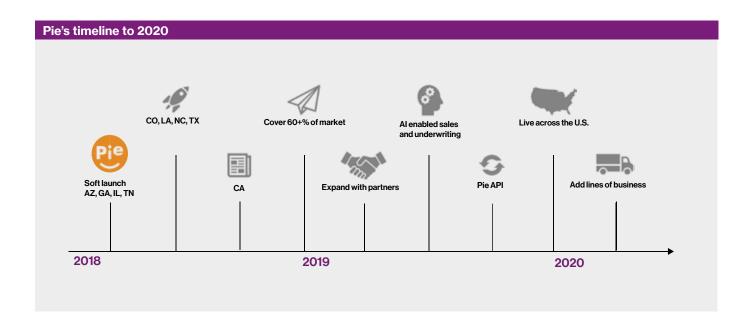
Pie's leadership team is led by co-founder and CEO John Swigart, who has a long history of success in tech-enabled insurance and financial services businesses. Prior to founding Pie, John served on the Esurance executive team for 13 years, where he initially led all the financial functions and then became the company's first chief marketing officer. John and his senior team bring to Pie over 50 years of insurance industry experience.

"Small business owners are hard-pressed to find a quick, convenient, fairly-priced workers compensation insurance offering. Pie has simplified traditional, cumbersome processes that add time and complexity to the purchasing process. Yet, unlike many InsurTechs, we are multichannel, not just direct to consumer online. We recognize the value that agents and brokers bring to the table and know that many of our customers also value their inputs. We have significant distribution through agents and brokers, and we will continue to grow this important channel by presenting them with a fast, easy online experience, just as we do consumers in our direct channel.

"Having worked in both the personal and the commercial lines space, one of the things I noticed is just how differently the issue of pricing is tackled. Personal lines writers are typically more algorithmic, model-driven and heavily dependent on individualized data sets. This approach allows them to quote policies in real-time, offer policies online, enables businesses to scale and, perhaps most importantly, removes bottlenecks around the prospective customer. The approach is guite different in certain commercial lines sectors. We have noticed in the workers compensation space that, historically, pricing has been quite human-centric with little variation on bureau rates. In certain classes of business, modern day commercial underwriting and pricing processes look similar to what we saw in personal lines in the 1970s. This is definitely not true for every carrier who writes commercial lines business, but it's fair to say that it is still common.

"When we started Pie Insurance, we decided to take the personal lines model, focusing on data-driven pricing and looking to support our underwriting functions with algorithms. We feel that this approach is better designed for the small business market, and it has allowed us to lower our expense ratio and gives us the ability to scale more easily.

"In some U.S. states where Pie operates, small businesses represent a significant proportion of the state economy for example, in California, nearly half the state workforce is employed by small businesses - and the purchasing of workers compensation is naturally of huge importance. By 2020, it is estimated that up to 60% of U.S.-based small businesses will be owned and run by digitally native millennials who are naturally drawn toward buying products online, direct to consumer."



The Data Center InsurTech by the numbers

Q1 deal count marks the highest ever number of deals for a quarter.

85 deals with a total value of \$1.42 billion were announced in Q1 2019. This is the third straight quarter over \$1 billion in funding.

Compared with Q4 of 2018, deal count in Q1 2019 increased by 35%, while funding volume decreased by 11%.

- In Q1 2019, 54% of all InsurTech deals took place outside of the U.S. This compares to 42% of all InsurTech deal activity that took place outside of the U.S in 2016. This matches a trend set over the last two years in which an increasing amount of InsurTech activity is taking place outside of the U.S.
- Deal count in the U.K. increased by 50% this quarter, and the U.S. increased by 44%; deal count in China decreased by 38% this quarter.
- 65% of investments in Q1 2019 were in the Seed and Series A rounds, up 3 percentage points from Q4 2018. Q1 2019 also recorded the highest number of Series B (12) and Series C (6) investment rounds. From Q4 2018, these are up 33% and 100%, respectively.

Q12019 recorded the highest number of P&C transactions (56) since this publication started recording.

- This marked a 37% increase from Q4 2018's deal count and a 30% increase from Q1 2018. However, there was a 27% decrease in funding volume from Q4 2018, but a 160% increase from Q1 2018.
- Early-stage InsurTech funding continues to go to P&C. Since Q2 2017, P&C has outpaced L&H for early-stage (Seed and Series A) InsurTech funding.

29 L&H transactions were recorded in Q1 2019, the second highest since Q2 2017.

 From Q4 2018 and Q1 2018, this marked a 32% and 26% increase, respectively. For funding volume, Q1 2019 reported \$767 million in funding, a 10% increase from Q4 2018 and a 62% increase from Q1 2018.

Distribution-focused InsurTechs have taken over half of all InsurTech deals since 2014: globally, 54% of InsurTech deals since 2014 have gone to distribution start-ups. Only 6% of deals have gone to full-stack insurers, while 40% have gone to B2B start-ups. B2B start-ups have taken a larger portion of deals recently though, with 42% of all InsurTech deals since the start of 2018.

Q12019 recorded a record high of 10 deals over \$40 million, which marked a 67% increase from Q4 2018

- Q1 2019 also recorded 15 investments \$20 million and over, and 11 investments over \$30 million.
- Out of 21 quarters (from Q1 2014 to Q1 2019), Q1 2019 accounts for 15% of all investments of \$40 million and over

The largest deal of the quarter was a \$500 million Series E round in Clover, a Medicare Advantage start-up focusing on lowering costs and improving health outcomes, by Greenoaks Capital Management.

The remaining \$40-plus million transactions:

- Wefox received a \$125 million Series B investment which brought the German-based InsurTech's funding to \$164.31 million.
- Baloise Group made an \$84.25 million Series A investment into Friday, a German-based car insurer.
- China-based Shuidihuzhu received a \$74 million Series B investment, bringing their total funding to \$105.7 million.
- Acko General Insurance completed a Series C funding round of \$65 million. They have now received \$107 million in funding.
- Shift Technology completed a \$60 million Series C funding round, which brings their total funding up to \$99.72 million.
- CoverHound's \$58 million Series D round brought the InsurTech's total funding to \$114.25 million.

InsurTech by the numbers

- France-based Alan received a \$45 million Series B funding round from DST Global and Index Ventures.
- Pie Insurance completed a \$45 million Series B funding round, bringing the workers compensation company's total funding to \$60.3 million.
- A \$43 million Series B funding round was completed by Clearcover, bringing their total funding to \$57 million.

Technology investments by (re)insurers continue to level off

Q12019 recorded 30 investments, which marked a 3% decrease from Q4 2018.

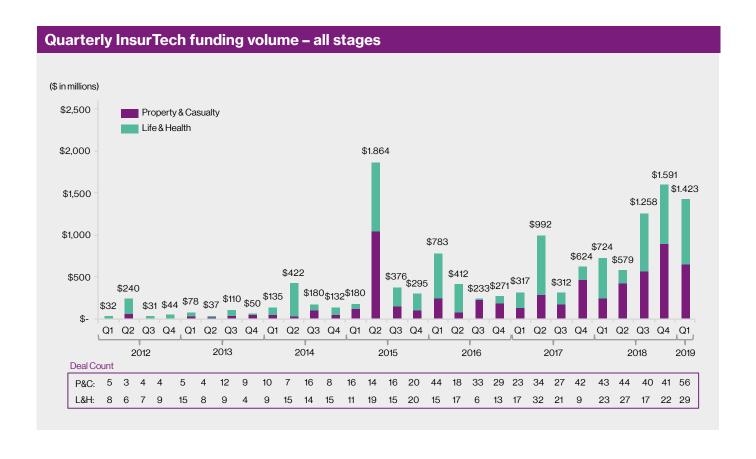
- U.S.-based technology firms remain the number one target with 50% of (re)insurer investments; this is up 18 percentage points from Q4 2018.
 - China-based firms received 10% of (re)insurer investments for the quarter; this is down by 9 percentage points from Q4 2018.
- There was a noticeable trend of fewer larger deals in this guarter, with 9 investments totaling \$391 million in the Seed and Series A funding rounds. This marked an 18% decrease in deals but an 79% increase in funding volume from Q4 2018.

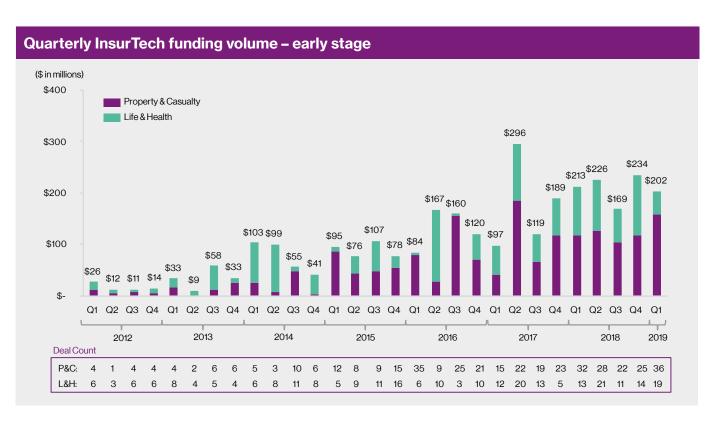
(Re)insurer partnerships have fallen from Q4 2018

There were 22 strategic partnerships between (re)insurers and technology companies in this quarter a 29% decrease from Q4 2018, which recorded 31 such partnerships. Examples include:

- Sompo Japan has partnered with One Concern on an interactive mapping tool for natural disasters.
- Travelers has become the exclusive provider of U.S. claim management services for Lyft, a rideshare firm.
- Munich Re announced a partnership with CyberCube to improve their analysis of cyber risk.
- AXA XL has partnered with Assurely to launch an insurance product for issuers and investors.
- Zurich has announced that they will provide claims management expertise and underwriting capacity for London-based Pluto, a travel insurance product for millennials.

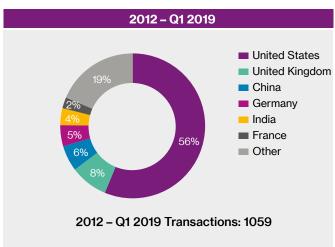
InsurTech by the numbers

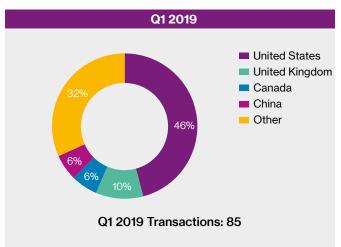




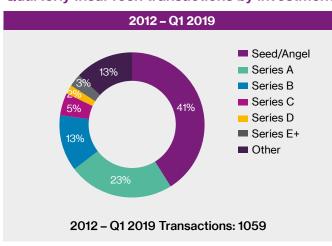
InsurTech by the numbers

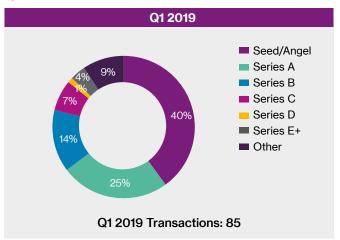
Quarterly InsurTech transactions by target country



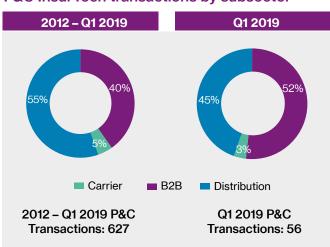


Quarterly InsurTech transactions by investment stage

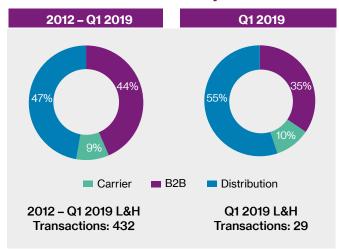




P&C InsurTech transactions by subsector



L&H InsurTech transactions by subsector



Q1 2019 InsurTech transactions – P&C

		Funding	g (\$M)		
Date	Company	Round	Total	_ Investor(s)	Description
02/01/2019	Digital Asset Services	0.5	0.5	Angels Invest WalesAshley CooperHambro PerksPaul TeatherPhil Buck	 Digital Asset Services is the developer of a security and insurance product, built on blockchain infrastructure, that reduces the risks of holding and using cryptocurrencies.
04/01/2019	Habit Analytics	2.06	5.18	 500 Accelerator Armilar Venture Partners Bright Pixel Partnership Fund for New York City Plug and Play Accelerator Portugal Ventures Techstars 	 Habit Analytics is a stack of real-time services and data intelligence for traditional insurance companies. They use human behavioral profiling to enable insurers to improve their underwriting models and promote additional services to their customers.
04/01/2019	Utilant	7.5	7.5	Aquiline Technology Growth	 Utilant is a provider of loss control inspection managemen software solutions for insurance P&C carriers and vendor companies.
07/01/2019	Clearcover	43	57	 500 Startups American Family Ventures Cox Enterprises Greycroft Partners Hyde Park Angels IA Capital Group Lightbank Silicon Valley Bank Undisclosed Investors 	Clearcover's API-first approach enables customers to have great insurance at affordable rates.
07/01/2019	Outline Insurance	6	6	SciFi VC	Outline Insurance is a provider of software solutions to help brokerages and carriers digitally transact E&S risk.
07/01/2019	yallacompare	8	16.9	 Argo Ventures Dubai Silicon Oasis Capital Mulverhill Associates Saned Partners STC Ventures Wamda Capital 	 yallacompare is a comparison site where users can compare and apply for bank accounts, insurance policies, credit cards, loans, cars and more in nine markets across the MENA region.
09/01/2019	BriteBee	0.04	0.04	Global Insurance Accelerator	BriteBee enables consumers to shop for trusted insuranc agents in an online marketplace.
09/01/2019	Cowbell	0.04	0.04	Global Insurance Accelerator	 Cowbell simplifies and expedites the process of obtaining accurate cyber insurance coverage for businesses by mapping insurable threats to the type of exposures.
09/01/2019	Liscena	0.04	0.04	Global Insurance Accelerator	 Liscena automates the decisions and interactions between policyholders and insurance companies with Al- powered claims adjusters.
09/01/2019	The Sentence Data Refinery	0.04	0.04	Global Insurance Accelerator	 The Sentence Data Refinery assists insurance companies by reading and interpreting sentence data related to events and activities in claim and underwriting files with speed and accuracy.
15/01/2019	hokan	1.29	1.85	 500 Accelerator 500 Startups Archetype Ventures BEENEXT MID Venture Capital Plug and Play Japan Saison Ventures Sony Innovation Fund 	 ALLINS is the developer of hokan, an Al-powered tool that can analyze insurance policies and offer recommendations. Users just need to upload photos of contracts and documents, and the program automatically digitizes the information and feeds that into the software. In turn, the tool can create charts, graphs and other visual representations of the provided data.
15/01/2019	Yuandudu			Albatross Venture In Capital	Yuandudu provides integrated solutions of Auto Insurance Claim Fraud Detection for insurance companies.
16/01/2019	Akinova			Hiscox Holdings MS&AD Ventures Plug and Play Accelerator Plug and Play Ventures	 Akinova is an electronic marketplace for the trading and transfer of insurance risk, using data analytics and machine learning on cloud infrastructure.
16/01/2019	Bond-Pro	10	10	Volition Capital	Bond-Pro offers their clients surety automation software for surety agencies and carriers.

Note: Blue font denotes current round investors.

Q1 2019 InsurTech transactions – P&C

		Fundin	g (\$M)		
Date	Company	Round	Total	- Investor(s)	Description
16/01/2019	FIGO Pet Insurance	1.5	12.63	 HCS Capital Partners Undisclosed Investors 	 FIGO is a Chicago-based pet insurance provider founded in 2015. It utilizes a mobile-friendly Pet Cloud that allows consumers to socially engage with fellow pet owners, find grooming and boarding locations, and discover other services within the pet ecosystem.
16/01/2019	Turtlemint	25	31	Blume VenturesNexus Venture PartnersSequoia Capital India	 Turtlemint is an online insurance seller that offers motorcycle insurance from various providers, allowing users to compare different plans.
29/01/2019	bsurance	4.57	5.19	SIGNA HoldingUndisclosed InvestorsUniqa VenturesweXelerate	 bsurance is an insurance company that specializes in B2B2C business models. Its customers include trading companies, energy suppliers, electronics retailers, and more.
29/01/2019	CoverHound	58	114.25	ACE Group Holdings Aflac Corporate Ventures American Family Ventures AngelPad Blumberg Capital Bullpen Capital Chubb Insurance Core Innovation Capital Ed Ojdana Hiscox Holdings MS&AD Route 66 Ventures RRE Ventures Source Interlink Companies Thomas Lehrman Tugboat Ventures	CoverHound is an online platform for comparing and purchasing insurance, built to deliver fast, accurate and rates from US carriers based on specific needs.
30/01/2019	Avinew	5	5	American Family VenturesCrossCut VenturesFrontier Venture CapitalRPM Ventures	 Avinew is an InsurTech company in auto insurance for autonomous and semi-autonomous vehicles.
31/01/2019	Ctrl			Knife CapitalSantam	 Ctrl is a car and household insurance advising app that enables users to request and accept quotes from different insurers, amend coverage and get advice without having to make a call or an appointment.
01/02/2019	Aureus Analytics	3.1	3.95	Alpine Meridian Arihant Patni Arun Venkatachalam Connecticut Innovations Hartford InsurTech Hub Microsoft ScaleUp Multi-Act Plug and Play Accelerator Rajan Anandan Steven Sule	 Aureus Analytics is a customer Intelligence and experience company that enables insurers and banks to deliver superior customer experiences to create greater customer retention, loyalty and value. The company does this by leveraging analytics and machine learning technologies and delivering insights at the point of decision.
01/02/2019	Photocert			Barclays Accelerator	 Photocert's software solution establishes and certifies the validity of visual evidence allowing businesses like general insurance, on-demand asset rentals and document certification to operate with efficiency and security, reducing incidents of fraud and misinformation.
04/02/2019	Hi Marley	8.75	8.75	True Ventures	Hi Marley has developed an intelligent conversation platform specifically designed for the insurance industry. The Marley platform enables insurance companies to communicate with their customers through messaging and deliver a fast and easy customer experience. The platform has flexible APIs and requires zero integration to get started.
05/02/2019	Cobertoo	0.02	0.02	 Startupbootcamp FinTech & Cybersecurity 	 Cobertoo offer mobile phone insurance plans with a charity donation component to monthly fees.
06/02/2019	Descartes Underwriting	2.28	2.28	BlackFin Capital PartnersLe Swave	 Descartes Underwriting jointly works with brokers and (re) insurers to come up with Property & Casualty insurance solutions across a variety of sectors and geographies.

Note: Blue font denotes current round investors.

Q1 2019 InsurTech transactions – P&C

		Fundin	g (\$M)		
Date	Company	Round	Total	_ Investor(s)	Description
06/02/2019	Jetty	25	40.5	BoxGroup Graph Ventures Khosla Ventures LeFrak MetaProp Red Swan Ventures Ribbit Capital Social Capital Solon Mack Capital SV Angel Valar Ventures	 Jetty is a financial services company that designs products and solutions that help people reach goals faster by removing obstacles and risks. Currently, Jetty focuses on solving the problem of renting a home with updated finance and insurance products that solve major headaches for consumers and landlords. Offered in combination or a la carte and accessible over any digital device, Jetty products are widely available across the United States.
06/02/2019	ProNavigator	2	2.32	 GreenSky Capital Innovation Grade Ventures MaRS Investment Accelerator Fund Undisclosed Angel Investors 	 ProNavigator has built an Al-powered chatbot specifically for the insurance industry. Their product helps insurance companies and insurance brokers capture, qualify and connect with leads in real-time.
07/02/2019	Zubie		24	Best Buy Capital BP Ventures Castrol innoVentures Comporium Communications Magna Magna International Melody Capital Partners NGP Capital October Capital OpenAir Equity Partners	Zubie provides a service for business enterprises including automotive, insurance, and mobile/telecom operators, as well as consumers and small businesses to connects cars to the internet to deliver real time location, trip history, maintenance alerts, engine diagnostics and driving insights to a smartphone. The company also offers the ZinC Open API platform, which allows a diverse set of developers and partners to create apps leveraging its platform and vehicle data.
12/02/2019	Socotra	5.2	19	8VC MS&AD Ventures Nationwide Ventures Undisclosed Angel Investors Undisclosed Investors USAA	Socotra is a cloud-based, productized insurance core platform that enables carriers to easily and efficiently manage complex interactions throughout the lifecycle of policies, whether single line, single state or multi-line, multi-country. The platform supports underwriting, policy administration, claims, billing, reporting, and more.
13/02/2019	Inshur	7	9.4	 MTech Capital Munich Re/HSB Ventures Undisclosed Investors 	 Inshur is a mobile-first digital platform for commercial TNC insurance. Its customers drive enormous distances on a daily basis in densely populated urban areas. Through machine learning and telematics, the company will create predictive claim modeling applicable to all areas of auto insurance.
20/02/2019	WorldCover	3.12	3.24	 CreditEase Fintech Investment Fund MS&AD Ventures Plug and Play Ventures Y Combinator 	WorldCover is a US-based insurance technology company that uses a peer-to-peer model to provide farmers in developing worlds with crop insurance against natural disasters and provides investors with diversified returns from the non-traditional financial markets.
25/02/2019	Sunday Insurance	10	10	Vertex Ventures SE Asia	 Sunday is a fully-integrated sales and services InsurTech that uses artificial intelligence and digital platforms to offer personalized insurance products and services that suits al types of individual and business risks.
25/02/2019	The Guarantors	15	26.97	 50 Partners Alven Capital Arnaud Achour Global Founders Capital Kima Ventures Partech Partners Residence Ventures Rocket Internet SilverTech Ventures White Star Capital 	The Guarantors acts as a guarantor for renters without sufficient credit, income or without credit history. Renters can qualify for the apartment of their dreams, while landlords get the same security as a lease prepayment.
27/02/2019	By Miles	6.66	8.44	Fintech Fast Forward Hambro Perks InMotion Ventures InsurTech Gateway JamJar Investments Octopus Ventures Undisclosed Angel Investors	By Miles is a car insurance provider aimed at people who live in cities and use their car infrequently.

Q1 2019 InsurTech transactions – P&C

		Fundin	g (\$M)		
Date	Company	Round	Total	Investor(s)	Description
01/03/2019	Acturis			Astorg PartnersSummit Partners	 Acturis is an IT service provider to the Insurance Industry offering front and back-office system used by brokers and underwriters.
04/03/2019	Assurely	0.75	1.37	Scout VenturesUndisclosed Investors	 Assurely is a platform that creates and customizes insurance products for marketplaces. Assurely has developed an insurance product called CrowdProtector to protect investors on crowdfunding platforms.
04/03/2019	Shift Technology	60	99.72	 Accel Bessemer Venture Partners Elaia Partners General Catalyst Iris Capital Paris&Co Plug and Play Accelerator 	Shift develops a software-as-a-service (SaaS) designed to detect potential insurance fraud. The company's software uses mathematical modelling and algorithms to detect fraudulent behavior.
05/03/2019	InvestSure	0.68	0.74	 4Di Capital Compass Insure Lireas Holdings Merrill Lynch Royal Bafokeng Holdings 	 InvestSure is an insurance product that insures listed shares bought on participating trading platforms, against losses arising out of the deceptive or misleading acts of management of the company. The insurance is offered on shares listed on the Johannesburg Stock Exchange (JSE). Investors can insure their shares as they buy them, as well as insure their existing portfolio.
05/03/2019	Pie Insurance	45	60.3	 Aspect Ventures Elefund Greycroft Partners Moxley Holdings Sirius International Insurance Group SVB Capital 	 Pie Insurance provides workers' compensation insurance directly to small businesses.
05/03/2019	Wefox	125	164.31	 AngelList CreditEase Fintech Investment Fund Davidson Technology Growth Debt Goldman Sachs Horizons Ventures IDInvest Partners Lena Meyer-Landrut Mubadala Ventures Salesforce Ventures Samuel Skoblo SBI Investment Seedcamp Sound Ventures Speedinvest Target Global Victory Park Capital 	Wefox enables customers, insurance brokers and insurance providers to transact and manage insurance products digitally.
07/03/2019	Friday	84.25	84.25	Baloise Group	Friday offers digital car insurance with features including kilometer accurate billing, monthly terminations and completely paperless administration.
12/03/2019	Cover Genius			King River Capital	Cover Genius is a provider of car rental, travel, package, white goods and consumer electronics insurance to ecommerce platforms.
12/03/2019	WeGroup	0.06	1.27	imec.istartPoland PrizeSpredsUndisclosed Investors	WeGroup is a provider of peer-to-peer (P2P) insurance products based in Belgium.

Q1 2019 InsurTech transactions – P&C

		Fundin	g (\$M)		
Date	Company	Round	Total	- Investor(s)	Description
13/03/2019	Acko General Insurance	65	107	Accel Amazon Ashish Dhawan Atul Nishar Binny Bansal Catamaran Ventures Hemendra Kothari Intact Ventures Kris Gopalakrishnan Rajeev Gupta RPS Ventures SAIF Partners India Subba Rao Telidevara Techpro Ventures Venk Krishnan	 Acko General Insurance is a digital insurance company which provides a variety of insurance policies ranging from car insurance to two-wheeler insurance (scooters, motorcycles) to mobile phone insurance to Ola Insurance. Ola Insurance is passenger insurance for Ola's ride-hailing service and covers items like minor accidents involving riders as well as insurance against missing flights due to traffic delays. The insurance claim system is built into the Ola app, per Acko, to simplify the process for users.
13/03/2019	byteRyde	0.12	0.12	AngelPad	 byteRyde provides insurance for Autonomous Cars, specifically Tesla Model 3's, taking into account the safety feature of self-driving cars.
14/03/2019	HandEX			 Andrew Shaw Christoph Steffens High-Tech Grunderfonds Ingo Saleck Undisclosed Angel Investors 	 HandEX is using technology to make it easy for exporters and importers to access the financing they need for international trade. It facilitates and integrates the issuance of export loans and export insurance covers, including guarantees issued by the German government.
14/03/2019	Saphron	1	1	Sage Venture PartnersTalino Venture Labs	 Saphron is making a financial service platform to make insurance accessible in Southeast Asia.
15/03/2019	Al Insurance	0.15	0.15	Y Combinator	 Al Insurance builds claims management software for small insurance companies. By introducing digital workflows and predictive analytics, Al Insurance is changing how claims are handled.
15/03/2019	WeatherCheck	0.15	0.15	Y Combinator	 WeatherCheck monitors properties for severe weather damage so that insurance carriers, mortgage companies, and property owners can take action.
19/03/2019	C2SEC	1.49	1.49	Cloud Angel FundF10Sequoia Capital China	 C2SEC provides cyber risk analytics for insurance companies and enterprises.
20/03/2019	BriteCo	2	3.8	Brian SpalyJeff TaylorUndisclosed Investors	 BriteCo is an InsurTech startup that partners with jewelers to allow consumers to insure fine jewelry and watches within minutes of purchase.
20/03/2019	Covered Insurance Solutions	3.04	4.63	Ozmen Ventures Petra Capital Partners Rapid City Economic Development Partnership Undisclosed Investors	 Covered Insurance provides a smarter, simpler and more convenient insurance marketplace platform that is focused on streamlining consumers' insurance transactions and experiences.
25/03/2019	Cerity			Employers Holdings	 Cerity is an Austin, TX-based InsurTech startup that is developing software that uses artificial intelligence to match workers compensation policies to small businesses that otherwise wouldn't get them.
26/03/2019	ComparaMejor		10	ComparaOnlineUndisclosed Investors	ComparaMejor is a digital platform that allows its users to compare, buy and finance auto insurance policies.
26/03/2019	Corax Cyber Security	2	7.37	Undisclosed Investors	 Corax Cyber Security is a software company helping organizations and the insurance community make better decisions on cyber security actions and investment. Corax's Cyber Risk Analytics Platform quantifies cyber risk for organizations and their surrounding ecosystem and automatically shows how much insurance cover and what security measures offer the highest return on investment. This means customers get the right pricing and coverage for cyber insurance and can build a secure organization in the most cost-effective way.
26/03/2019	Finaeo	3.99	5.67	 500 Startups Alex Norman iGan Partners Impression Ventures iNovia Capital Luge Capital RGAx Rising Tide Fund Robo Ventures 	 Finaeo has created a front-end software platform for insurance advisors that helps with repetitive tasks, such as auto-filling applications. It also offers real-time application submission, adjudication, and application status of insurance claims.

Q1 2019 InsurTech transactions – L&H

		Fundin	g (\$M)		
Date	Company	Round	Total	_ Investor(s)	Description
07/01/2019	MDsave		29.38	Cambia Health Solutions Change Healthcare Undisclosed Investors WindRose Health Investors	 MDsave is an online healthcare marketplace, bringing together patients seeking affordable, reliable care with providers offering high-quality services at fair prices. They simplify the healthcare billing process for patients and providers alike through negotiated rates, bundled pricing, and up-front payment. The MDsave marketplace also helps employers and payers offer more value to employees and policy holders with out-of-pocket deductible costs.
09/01/2019	ebbie	0.04	0.04	Global Insurance Accelerator	 ebbie specializes in e-application development and underwriting automation for life and health insurance companies.
09/01/2019	everyday life	0.04	0.04	Global Insurance Accelerator	 everyday life makes purchasing the right life insurance policy easier using artificial intelligence (AI) to provide high-quality advisor services and personalized recommendations.
09/01/2019	Micruity	0.04	0.04	Global Insurance Accelerator	Micruity supports entities looking to synergize employee benefits with human resources (HR) strategy by enabling the addition of financial-focused insurance products, such as deferred annuities, to the company pension plan.
09/01/2019	Prosper eDNA	0.04	0.04	Global Insurance Accelerator	 Prosper eDNA increases accuracy and planning for insurance companies working in life, long-term care and annuities by making accurate lifespan predictions, and enabling personalized epigenetic (not genetic) monitoring.
14/01/2019	Singapore Life	13	135	 Aberdeen Standard Investments Aflac Chong Sing Holdings FinTech Group IPGL Michael Spencer 	 Singapore Life is a life insurance company fully licensed by the Monetary Authority of Singapore. Singapore Life offers high net worth universal life solutions for those that prefer Singapore and the Singapore regulatory environment as a destination for their wealth and protection needs.
17/01/2019	Limelight Health	33.5	43.8	Aflac Corporate Ventures AXA Venture Partners Launchpad Digital Health MassMutual Ventures Plug and Play Accelerator Plug and Play Ventures Portag3 Ventures Principal Life Insurance Company Transamerica Ventures Wanxiang Healthcare Investments Wells Fargo Strategic Capital	Limelight Health, a provider of mobile enterprise technology for health insurance agencies, aims to streamline and simplify complex employee health benefits processes.
18/01/2019	Anorak Technologies		12.05	FinTech Innovation LabKametPlug and Play Accelerator	Anorak is an online platform that assesses how much life insurance coverage a user needs and scans major insurance companies to find the right policy for the user.
22/01/2019	Pluto			Financial Conduct Authority Zurich Insurance Group	Pluto develops a Messenger chatbot that allows customers to buy and manage travel insurance.
28/01/2019	TheBank.vn			CyberAgent Capital NCORE VENTURES	 TheBank.vn compares and evaluates financial products such as credit cards, unsecured loans, mortgage loans, savings interest rates, and insurance products. It also connects customers to financial services.
29/01/2019	Yolo	5.71	6.89	 Barcamper Ventures Mansutti Miro Ventures Net Insurance Neva Finventures 	Yolo has built a platform that enables consumers to activate micro insurance products in real time and pay-per-use.

Q1 2019 InsurTech transactions – L&H

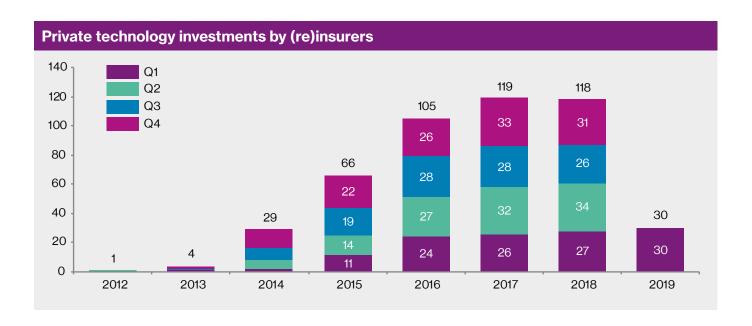
		Fundin	g (\$M)				
Date	Company	Round	Total	_ Investor(s)	Description		
30/01/2019	Clover Health	500	925	AME Cloud Ventures Arena Ventures Arena Ventures Athyrium Capital Management Brainchild Holdings Casdin Capital First Round Capital Floodgate Google Ventures Greenoaks Capital Management Nexus Venture Partners Palm Drive Capital Sequoia Capital Sequoia Capital Social Capital Spark Capital Sura Ventures Undisclosed Investors Western Technology Investment Wildcat Venture Partners	Clover Health is a data-driven health insurance startup focused on lowering costs and producing improved health outcomes. The company uses analytics and custom software to direct clinical staff to proactively fill in gaps in the care of elderly and low-income members.		
30/01/2019	Kruzr	1.3	1.3	Better Capital Saama Capital	 Kruzr is a preventive motor insurance technology startup, which helps insurance companies personalize policy premiums & improve their risk model by delivering an engaging preventative driving assistant to their customers. 		
31/01/2019	GoCo.io	7	15.28	 ATX Venture Partners GIS Strategic Ventures OneDigital Health and Benefits Salesforce Ventures Undisclosed Angel Investors Undisclosed Investors UpCurve 	 GoCo.io offers an online platform that makes it easy for businesses to manager their employee benefits, onboarding and payroll transactions. 		
01/02/2019	Mango Life			Startupbootcamp FinTech	 Mango Life is an online platform for getting a quote, procuring and streamlining life insurance. 		
11/02/2019	loveduobaoyu			Bertelsmann Asia InvestmentsZhenFund	 loveduobaoyu provides insurance knowledge and consulting services. 		
18/02/2019	Alan	45	86.3	 CNP Assurances DST Global Index Ventures Kima Ventures Partech Partners Portag3 Ventures Power Financial Corporation Startup Garage Paris from Facebook Undisclosed Angel Investors 	 Alan is a Paris-based digital health insurance company that develops subscription-based software for insurance with clear pricing and transparent reimbursement policies. Alan is a primary insurer that distributes its own health plans directly to companies and individuals. 		
21/02/2019	Clareto			 Health Catalyst Capital Management NRV 	 Clareto is a digital health and InsurTech company that seeks to commercialize use cases and pursue market opportunities, with an initial focus on modernizing life insurance underwriting. 		
26/02/2019	Breathe Life	3.4	3.4	Diagram HoldingReal VenturesUndisclosed Angel Investors	Breathe Life is a Montreal-based provider of consumer-focused solutions for the insurance industry. The Breathe Life platform delivers a modern, customer-centric experience with tools and analytics that are reshaping the insurance industry and driving business growth.		
06/03/2019	Catch	0.15	5.25	Khosla VenturesKindred VenturesNyca PartnersY Combinator	 Catch offers a personal benefits platform, offering tax withholding, retirement plans, health insurance, and more all integrated in one place. It serves the people who don't have access to employer benefits, including freelancers, contractors, gig workers, founders, and full-time employees with inadequate benefits plans. 		

Q1 2019 InsurTech transactions – L&H

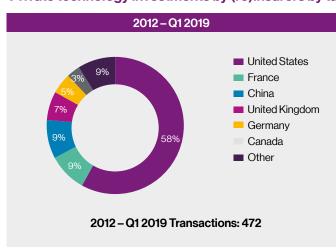
		Funding	g (\$M)		
Date	Company	Round	Total	Investor(s)	Description
07/03/2019	SafetyWing		0.5	 byFounders CreditEase Fintech Investment Fund The Nordic Web Ventures Y Combinator 	 SafetyWing is insurance for digital nomads. It is building a global safety net tailored to the needs of online freelancers and entrepreneurs. Users compare competitors for coverage, choose a start date, and get coverage for up to 30 days every 3 months.
08/03/2019	Lifepal			ATM Capital	Lifepal is an online platform that aggregates insurance options for those living in Indonesia.
13/03/2019	CXA	25	58	B Capital Group BioVeda Capital EDBI F&H Fund Management Fuchsia Venture Capital Heritas Capital Management HSBC Venture Capital Humanica MDI Ventures OpenSpace Ventures Philips RGAx SingTel Innov8 Sumitomo Corporation Equity Asia Telkom Indonesia	 CXA offers a self-service platform that allows employers to give their employees access to a range of health, wealth and wellness offerings, personalized based on the individual's health and life-stage data. Employees can purchase offerings by drawing down on existing insurance policies provided by their employers and using funds that are then released into the platform's eWallet to make transactions cashless, fast and easy.
13/03/2019	Hibob	20	45	Arbor Ventures Battery Ventures Bessemer VenturePartners Eight Roads Ventures LocalGlobe Presidio Ventures Sumitomo Corporation Taavet Hinrikus	 hibob, aka bob, is a cloud-based system that integrates human resources, benefits, pension, auto-enrollment, and data in one secure online data storage platform. The company's platform improves the workflow of managing and engaging employees, saving hours of administration. hibob has offices in Tel Aviv, London, and New York.
14/03/2019	Doubao	14	14	Bojiang CapitalCapital WingsHaoxindaHerui Leye	Doubao is an internet insurance product platform that aims to provide employees with benefits planning, health management, and insurance services for enterprises.
19/03/2019	EaseCentral	19	27.6	 Centana Growth Partners Compound Deep Fork Capital Freestyle Capital Propel Venture Partners Transmedia Capital Upside Partnership 	Ease has developed a platform meant to help small and medium sized businesses with HR and benefits enrollment and administration.
20/03/2019	Kindur	1	11.25	 Anthemis Group Clocktower Technology Ventures Inspired Capital Partners Jake Gibson James Walker Point72 Ventures 	Kindur offers a platform to support Baby Boomers as they transition into retirement.
22/03/2019	Catch	5.1	5.25	Khosla VenturesKindred VenturesNyca PartnersY Combinator	 Catch offers a personal benefits platform, offering tax withholding, retirement plans, health insurance, and more all integrated in one place. It serves the people who don't have access to employer benefits, including freelancers, contractors, gig workers, founders, and full-time employees with inadequate benefits plans.
27/03/2019	Shuidihuzhu	74	105.7	 BlueRun Ventures Cosun Venture Capital Gaorong Capital IDG Capital Meituan Dianping Sinovation Ventures Tencent Holdings Yuri Milner ZhenFund 	Shuidihuzhu is an insurance platform that plans to solve the problem of high medical fees faced by most patients, especially those with a critical illness. When a user is diagnosed with a serious disease like cancer, the platform will crowdfund the medical fees from all of its users.

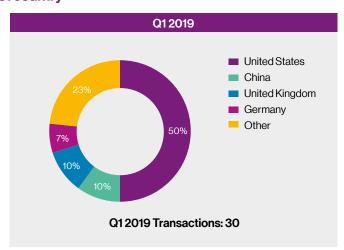
Note: Blue font denotes current round investors.

Private technology investments by (re)insurers

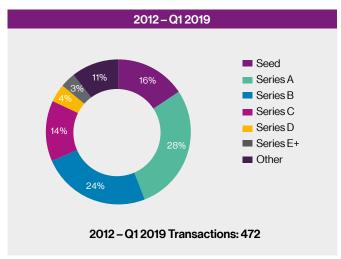


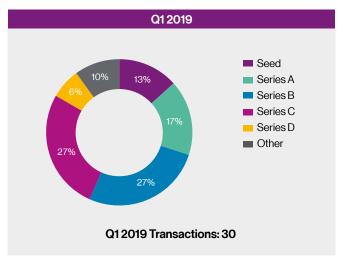
Private technology investments by (re)insurers by target country





Private technology investments by (re)insurers by investment stage





Q1 2019 private technology investments by (re)insurers

		Fundir	ng (\$M)		
Date	Company	Round	Total	(Re)insurer investor(s)	Description
07/01/2019	Clearcover	43	57	 American Family Ventures 	 Clearcover's API-first approach enables customers to have great insurance at affordable rates.
07/01/2019	Zhangshang Tangyi	100	130.79	Ping An Insurance	 Hangzhou KangSheng Health Consulting is the developer of Zhangshang Tangyi, a mobile diabetes management app that allows patients to record their own health data and to receive medical advice.
07/01/2019	yallacompare	8	16.9	 Argo Ventures 	 yallacompare is a comparison site where users can compare and apply for bank accounts, insurance policies, credit cards, loans, cars and more in nine markets across the MENA region.
08/01/2019	Noblr	20.03	20.03	White Mountains Insurance Group	 Noblr provides consumers with real-time insurance rates and real- time feedback on driving behavior by leveraging telematics and Noblr's own technology.
10/01/2019	Airdoc			Ping An Ventures	 Airdoc is a deep-learning-based algorithm services company providing AI medical solutions, which can realize the detection, segmentation, and image recognition of specific pathological tissue. Airdoc provides service for medical industries, with a focus on image recognition analysis.
14/01/2019	Singapore Life	13	135	Aberdeen Standard Investments	 Singapore Life is a life insurance company fully licensed by the Monetary Authority of Singapore. Singapore Life offers high net worth universal life solutions for those that prefer Singapore and the Singapore regulatory environment as a destination for their wealth and protection needs.
15/01/2019	Outdoorsy	50	81.5	 Aviva Ventures 	 Outdoorsy connects users with a nationwide network of RV owners, so they can reserve and rent RVs direct from the owner.
16/01/2019	Akinova			Hiscox HoldingsMS&AD Ventures	 Akinova is an electronic marketplace for the trading and transfer of insurance risk, using data analytics and machine learning on cloud infrastructure.
17/01/2019	Limelight Health	33.5	43.8	 Aflac Corporate Ventures AXA Venture Partners MassMutual Ventures Principal Life Insurance Company Transamerica Ventures 	 Limelight Health, a provider of mobile enterprise technology for health insurance agencies, aims to streamline and simplify complex employee health benefits processes.
22/01/2019	Zeitgold	10.88	27.28	AXA Venture Partners	 Zeitgold develops a mobile app designed for small businesses, allowing users to perform financial tasks such as booking and accounting.
22/01/2019	Pluto			Zurich Insurance Group	 Pluto develops a Messenger chatbot that allows customers to buy and manage travel insurance.
29/01/2019	Zenpark	11.43	20.17	MAIF Avenir	 Zenpark turns private parking into public shared parking. The company designs and operates an end-to-end solution that allows drivers to park their cars in access-controlled private parking lots. At the same time, Zenpark offers parking owners a source of revenue and accompany cities in their mobility policies.
29/01/2019	CoverHound	58	114.25	 Aflac Corporate Ventures Chubb Insurance Hiscox Holdings MS&AD 	 CoverHound is an online platform for comparing and purchasing insurance, built to deliver fast, accurate and rates from US carriers based on specific needs.
29/01/2019	JUSDA	356.45	356.45	China Life Insurance	JUSDA is a B2B supply chain management solution provider.
29/01/2019	bsurance	4.57	5.19	 Uniqa Ventures 	 bsurance is an insurance company that specializes in B2B2C business models. Its customers include trading companies, energy suppliers, electronics retailers, and more.
30/01/2019	Avinew	5	5	 American Family Ventures 	 Avinew is an InsurTech company in auto insurance for autonomous and semi-autonomous vehicles.
31/01/2019	Augury	25	51	Munich Re/HSB Ventures	 Augury is an Al-based machine health solution provider that offers a mobile based solution that automatically diagnoses machines, gives treatment recommendations and predicts future failures. This way, anyone can perform "Predictive Maintenance" (PdM) with no prior training.

Q1 2019 private technology investments by (re)insurers

		Fundin	g (\$M)		
Date	Company	Round	Total	(Re)insurer investor(s)	Description
31/01/2019	Ctrl			Santam	 Ctrl is a car and household insurance advising app that enables users to request and accept quotes from different insurers, amend coverage and get advice without having to make a call or an appointment.
11/02/2019	Human API	10	16.71	 Guardian Life Insurance Company of America Scor Life & Health Ventures 	 Human API lets application developers create meaning from data streams of personal health through one simple, secure API. The company exposes each data stream as an endpoint that can be called, and the data source is abstracted away, leaving one simple, clean, stable API.
12/02/2019	Socotra	5.2	19	MS&AD Ventures Nationwide Ventures	 Socotra is a cloud-based, productized insurance core platform that enables carriers to easily and efficiently manage complex interactions throughout the lifecycle of policies, whether single line, single state or multi-line, multi-country. The platform supports underwriting, policy administration, claims, billing, reporting, and more.
13/02/2019	Affinity	26.5	40	MassMutual Ventures	 Affinity provides patented technology that structures and analyzes data points across emails, calendars, and third-party sources to give companies in the financial services, real estate and technology industries the tools to automatically manage their valuable relationships, prioritize important connections, and discover untapped opportunities.
13/02/2019	Inshur	7	9.4	Munich Re/HSB Ventures	 Inshur is a mobile-first digital platform for commercial TNC insurance. Its customers drive enormous distances on a daily basis in densely populated urban areas. Through machine learning and telematics, the company will create predictive claim modeling applicable to all areas of auto insurance.
13/02/2019	Stable	6	6	Ascot Underwriting HoldingsBaloise Group	 Stable provides price risk management for the food and farming industry.
28/02/2019	Contrast Security	65	119	AXA Venture Partners	 Contrast Security is a provider of security technology that enables software applications to protect themselves against cyber attacks. Contrast's patented deep security instrumentation is the technology that enables highly accurate analysis and always-on protection of an entire application portfolio, without scanning.
04/03/2019	Jupiter Intelligence	23	33	Mitsui Sumitomo Insurance Venture Capital Nephila Capital QBE Ventures	 Jupiter provides data and analytics services to better predict and manage risks from weather and temperature changes, sea-level rise and storm intensification caused by severe weather and medium-to long-term climate change. The company's first two products, FloodScore and HeatScore are focused on climate-related risk assessment and management.
13/03/2019	Acko General Insurance	65	107	Intact Ventures	 Acko General Insurance is a digital insurance company which provides a variety of insurance policies ranging from car insurance to two-wheeler insurance (scooters, motorcycles) to mobile phone insurance to Ola Insurance. Ola Insurance is passenger insurance for Ola's ride-hailing service and covers items like minor accidents involving riders as well as insurance against missing flights due to traffic delays. The insurance claim system is built into the Ola app, per Acko, to simplify the process for users.
19/03/2019	Ojo Labs	45	71.37	Northwestern Mutual Future Ventures	OJO is an Al tool that allows consumers to ask questions at any stage of their home search process. The Al assistant, like Alexa or Siri, aims to solve two problems: consumers not asking their real estate agent questions, and consumers who feel like when they do ask questions early on in the process, their agent tries to sell them on properties.
26/03/2019	Finaeo	3.99	5.67	• RGAx	 Finaeo has created a front-end software platform for insurance advisors that helps with repetitive tasks, such as auto-filling applications. It also offers real-time application submission, adjudication, and application status of insurance claims.
26/03/2019	Vlocity	60	152.8	New York Life Insurance Company	 Vlocity delivers industry-specific cloud and mobile software that embed digital, omnichannel processes for customer-centric industries. Vlocity is built in partnership with the Salesforce CRM platform.
27/03/2019	Teraki	2.3	5.38	American Family Ventures	 Teraki provides embedded, pre-processing software for sensor data in the automotive industry. When embedded in automotive electronic systems, the software enables hardware to process the vast amount of data generated by in-vehicle sensors and control units (ECUs, MCUs, TCUs) to improve vehicle safety and autonomy at lower operational costs.

Q1 2019 strategic (re)insurer partnerships

Date	Company	(Re)insurer partner(s)	Description
02/01/2019	Betterview	• Conifer	 Conifer, a Michigan-based property and casualty insurer has partnered with Betterview, an Al-powered software and services provider that captures aerial imagery from drones and other data sources to determine the risk of potential insurance claims and evaluate the potential for future losses. Conifer will use Betterview's tools to support their commercial underwriting teams and the underwriting evaluation process
03/01/2019	Lyft	Travelers	 Travelers, a leading provider of property and casualty insurance for auto, home, and business, has become the exclusive provider of U.S claim management services for Lyft, a rideshare firm. Lyft is the second largest and fastest growing ridesharing firm in the US.
09/01/2019	Honda	• USAA	 San Antonia-based USAA has collaborated with Honda to develop a driver coaching app. The software will be integrated into Honda's onboard driver program and will issue warnings to drivers on potential issues, including when they enter a school zone or if they are going too fast approaching a sharp turn. It will also include a rewards platform which provides drivers with scores on their driving and advice on how to improve. It is expected to be available in the summer of 2019
09/01/2019	Ease	Colonial Life	 Colonial Life, a US-based leading provider of financial protection benefits, has expanded their partnership with EaseCentral, an online benefits enrollment platform. Having already partnered successfully for two years, this partnership expansion will enable both companies to better serves their mutual customers through benefits enrollment solution which is high-touch and high-tech.
11/01/2019	Carousell	• AXA	AXA Singapore and Carousell, a Singapore-based online marketplace that operates across Southeast Asia, have partnered in a move that allows Carousell's users to purchase second-hand car and motorcycle insurance coverage through the Carousell app. Users receive instant quotes for a range of plans which they can purchase directly through the app.
15/01/2019	Singapore Life	Aflac	 Aflac, an US-based insurance company has invested \$20 million in Singapore Life, a life insurance company, in exchange for a private equity stake. The deal will see Aflac partner with Singapore Life on a reinsurance agreement on certain protection products.
15/01/2019	Shift Technology	 P&V Group 	Shift Technology, an Al-solutions provider, has entered a long-term agreement with P&V Group, a leading Belgian insurer. The move will see P&V Group automating their fraud detection capabilities.
21/01/2019	Pluto	Zurich Insurance	Zurich has announced that they will provide claims management expertise and underwriting capacity for London-based Pluto, a travel insurance product for millennials.
29/01/2019	Truepic	 Jewelers Mutual 	 Jewelers Mutual, the U.S.' only carrier that specializes in jewelry and jewelry business insurance, have announced that they will use Truepic to perform virtual inspections at the point of underwriting. Truepic uses AI, cryptography, and computer vision technologies to authenticate photos and videos.
04/02/2019	FPT	 Allianz 	FPT, a leading Vietnamese technology group, will establish a joint venture with Allianz. The move will see Allianz entering into the general insurance sector in Vietnam.
15/02/2019	Lexus	Travelers	 Travelers, a leading provider of property and casualty insurance for auto, home, and business, will be the auto insurance provider for the new Lexus Complete Lease. The Complete Lease program is for the Lexus UX compact crossover vehicle and runs for two-years,
			20,000-miles. The policy from Travelers will be an auto liability and physical damage coverage with a \$500 deductible.
18/02/2019	Garmin Health	Scor	 Scor, a France-based reinsurer, has partnered with Garmin Health, a wearable technology provider, to improve its underwriting insights in the Asia Pacific region.
			 The partnership will enable Scor to develop a more accurate insight to an individual's biological age and through so will be able to minimize their risk and purchase cycles while delivering competitive pricing to their consumers.

Q1 2019 strategic (re)insurer partnerships

Date	Company	(Re)insurer partner(s)	Description
01/03/2019	CyberCube	Munich Re	 Munich Re has announced a partnership with CyberCube to improve their analysis of cyber risk. CyberCube is a Software as a Service provider, delivering data-driven cyber analytics to inform cyber risk aggregation modeling and insurance underwriting.
04/03/2019	Shift Technology	- CNA	 Shift Technology, an Al-solutions provider, has entered into an agreement with CNA Financial Corporation. CNA, one of the U.S. 'largest commercial P&C insurance companies, will use Shift Technology's platform to automate their fraud detection capabilities.
07/03/2019	Assurely	• AXA XL	 AXA XL has partnered with Assurely to launch an insurance product for issuers and investors called CrowdProtector. The product safeguards new online capital formation strategies, including equity crowdfunding and security token offerings.
07/03/2019	Planck	Berkshire Hathaway GUARD	 Planck, an Al-driven platform for commercial insurance, has partnered with Berkshire Hathaway GUARD Insurance Companies. The move will allow Berkshire Hathaway GUARD to expedite its digital underwriting for its small and medium business segments and will enable GUARD's underwriters to dedicate their time on quoting and underwriting good risks rather than on the data cleansing and sorting process.
07/03/2019	BlueVine	Nationwide	 Nationwide has expanded their relationship with BlueVine, an online small business lending company. Nationwide will offer BlueVine's fast and flexible financing solutions to small business through their Business Solutions Center. BlueVine offers lines of credit up to \$250,000 and invoice factoring up to \$5,000,000 in funding availability.
20/03/2019	Slice Labs	Nationwide	Slice Labs, an insurance cloud services platform provider, has partnered with Nationwide to develop on- demand rideshare insurance solutions for those in the transportation gig economy
25/03/2019	One Concern	 Sompo Japan 	 Sompo Japan has partner with One Concern, a US-based start-up which has created an interactive mapping application that can predict the scale and intensity from natural disasters on a localized level. The partnership will see them rolling out the app to businesses and municipalities to help them understand natural disaster risks, develop contingency plans, and provide financial protection against any potential loss or damage.
26/03/2019	Cape Analytics	State Auto	 State Auto, a digital provider of property and casualty insurance, is leveraging Cape Analytics's product for its homeowners insurance offering. The move will enable State Auto to make better decisions and streamline their underwriting process. Cape Analytics uses aerial imagery and Al to provide comprehensive and accurate property information.
28/03/2019	Outdoorsy	Liberty Mutual	 Liberty Mutual has partnered with Outdoorsy, the world's fastest growing RV rental and outdoors experiences marketplace. The partnership encompasses three levels of RV rental insurance for both owners and renters in the US and Canada.
29/03/2019	Lyft	- GEICO	 As part of Lyft Driver Services, they are promoting GEICO's rideshare insurance. Drivers who hold this insurance will get a \$250 deductible for physical car damage and they will receive an extra \$0.25 on every ride they give. Lyft Driver Services is a new list of perks and services designed by Lyft to make driving easier and save their drivers money.

Quarterly InsurTech Briefing

Additional information

The Quarterly InsurTech Briefing is a collaboration between Willis Re, Willis Towers Watson ICT and CB Insights. Production is led by the following the individuals. For more information, or to discuss the results of this report, please direct inquiries to InsurTech@willistowerswatson.com.

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