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CAPCO

ALTERNATIVE MODELS

Future-proofing insurance: Asia insurers gearing up for digitization

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ALTERNATIVE CAPITAL MARKETS

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DEAR READER,

Welcome to edition 49 of the Capco Institute Journal of Financial Transformation.

Disruptive business models are re-writing the rules of our industry, placing continuous pressure on financial institutions to innovate. Fresh thinking is needed to break away from business as usual, to embrace the more rewarding, although more complex alternatives.

This edition of the Journal looks at new digital models across our industry. Industry leaders are reaching beyond digital enablement to focus on new emerging technologies to better serve their clients. Capital markets, for example, are witnessing the introduction of alternative reference rates and sources of funding for companies, including digital exchanges that deal with crypto-assets.

This edition also examines how these alternatives are creating new risks for firms, investors, and regulators, who are looking to improve investor protection, without changing functioning market structures.

I am confident that you will find the latest edition of the Capco Journal to be stimulating and an invaluable source of information and strategic insight. Our contributors are distinguished, world-class thinkers. Every Journal article has been prepared by acknowledged experts in their fields, and focuses on the practical application of these new models in the financial services industry.

As ever, we hope you enjoy the quality of the expertise and opinion on offer, and that it will help you leverage your innovation agenda to differentiate and accelerate growth.

Lance Levy, **Capco CEO**

FUTURE-PROOFING INSURANCE: ASIA INSURERS GEARING UP FOR DIGITIZATION

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ABSTRACT

Recent fundamental demographic and market shifts in Asia signal the need for insurers to look at the products, processes, and enabling technology required to stay relevant in the new era. Success in the region will require more than the insurers' own digital enablement. Effective application of emerging insurtech innovations specific to these markets will be critical to earn the right to play and win in the region. In this paper, we examine the economic and regulatory factors that are unique to Asia, as well as the diverse and evolving needs of regional consumers. An understanding of these factors and how they are inevitably linked to one another will help distill the nuances of what insurtech means to insurance companies and how it can help them gain competitive edge. This study delves into five key insurtech trends. It also looks at insurtech innovations and their use-cases that provide opportunities for insurers to shape their digital agenda and achieve growth in the region.

1. INTRODUCTION

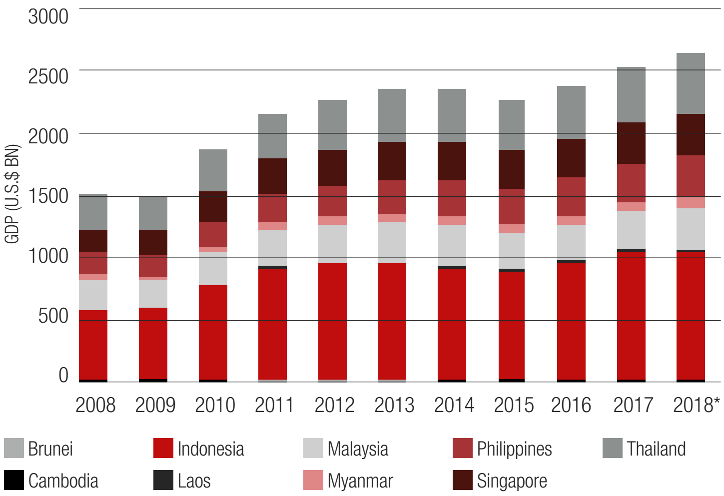
Major economic, societal, and technological trends are redefining the boundaries in which insurance companies operate in Asia. The region is experiencing unprecedented growth ushered in by urbanization and a burgeoning middle-class wealth. Coupled with lower regulatory barriers in certain countries, it offers important growth opportunities for insurers amidst a lackluster global outlook. These opportunities are currently underpinned by a wave of emerging insurance technologies and the unique demands of Asian consumers that in turn have profoundly impacted the way insurers operate in this increasingly competitive market.

There have been significant strides made by the industry to adopt emerging technologies to complement the value chain, adjust their business models and products, or entirely change the way they operate. In recent years, the insurance industry has embraced digital transformation in a bid to improve distribution, product margins, and, above all, to match or exceed customer expectations.

Recent fundamental demographic and market shifts in Asia signal the need for insurers look at the products, processes, and enabling technology to stay relevant in the new era. Success in the region will require more than the insurers' own digital enablement. Effective application of emerging insurtech innovations specific to these markets will be critical to earn the right to play and win in the region.

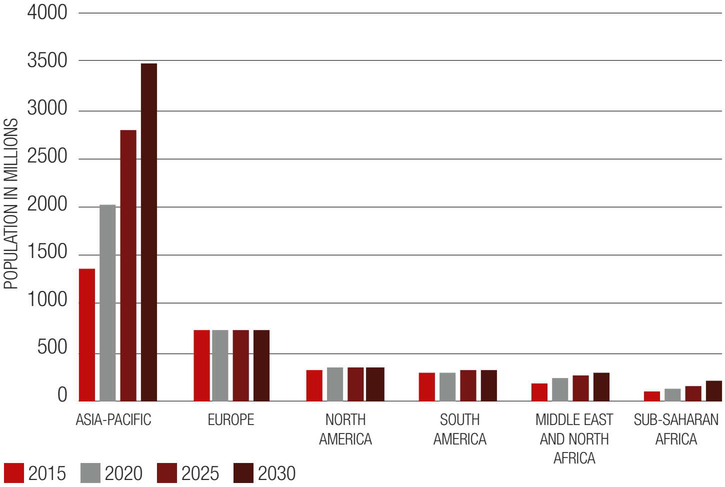
[1] The authors would like to thank Dominic Poon, Consultant, Capco for his contribution to this article.

Figure 1: ASEAN GDP growth (2008-2018)



Source: Statista.com

Figure 2: Global middle class growth forecast



Source: Statista.com

In this study, we examine the economic and regulatory factors that are unique to Asia, as well as the diverse and evolving needs of regional consumers. An understanding of these factors and how they are inevitably linked to one another will help distill the nuances of what insurtech means to insurance companies and how it could help them gain competitive edge. This study delves into five key insurtech trends. It also looks at innovations and their use-cases that provide opportunities for insurers to shape their digital agenda and capture growth opportunities in the region.

2. CHANGING ENVIRONMENT – ASIA IS THE BRIGHT SPOT

2.1 Understanding the potential of Asia

To gain a good understanding of the insurance industry in Asia, we need to take into account the macroeconomics of the region, as the industry's growth often moves in tandem with the economic progress of a country. In the era of tempered global economic growth, Asia is one of the bright spots. From a general insurance standpoint, Asian countries (excluding Japan) accounted for 76% of the overall global insurance industry premium growth in 2017 (U.S.$157 billion).[2] Life insurance experienced a 14% growth in premiums, with China accounting for nearly 80% of it (U.S.$73 billion).[3]

Spotlight on China: China has been experiencing a steady GDP growth of around 6% year-on-year, helping it become the second largest economy in the world. Its insurance market has also grown to become the third largest in the world. In the period of 2010-2015 alone, the Chinese market grew by 80% to reach U.S.$385.5 billion in gross written premiums, outpacing Japan and the U.S.

Southeast Asia: during a similar period, economies of the Association of South East Asian Nations (ASEAN) has experienced similar growth. From 2008 to 2018, ASEAN GDP grew significantly from U.S.$1.7 trillion to U.S.$3 trillion (Figure 1).

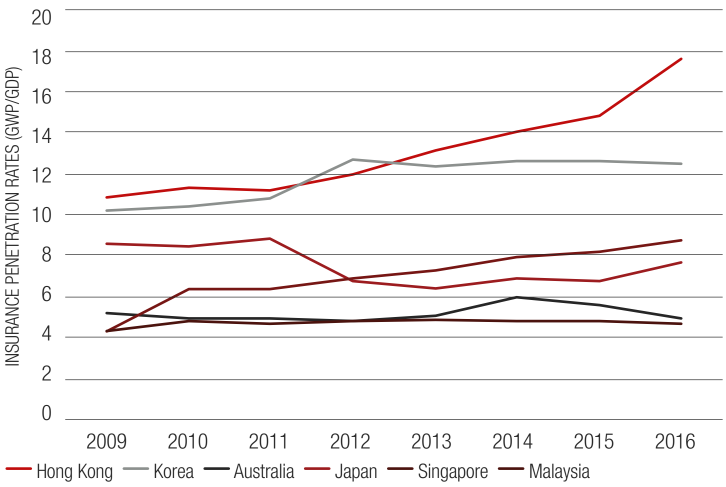
2.2 Shifting economic tides and customer preferences

Although the demographic changes in Asia's are impacting demand for insurance products, the industry must also account for the nuances of consumption patterns in the region.

Like their peers in the west, Asians consumers are open to innovation and value how new technologies are helping them connect with the rest of the world (smart phone users in the region have increased from 39 million in 2007 to potentially 1.81 billion in 2018).[4] The modern Asian consumer is also more educated and faced with more choices than previous generations. For these

[2] Asia Insurance Law Review, 2018, "Asia: region powers 76% of growth in global insurance markets," April 27, https://bit.ly/2Cic4FS
[3] Asia Insurance Law Review, 2018, "Asia: region powers 76% of growth in global insurance markets," April 27, https://bit.ly/2Cic4FS
[4] eMarketer, 2017, "Internet and mobile users in Asia-Pacific: eMarketer's country-by-country forecast for 2017-2021," November 21, https://bit.ly/2AQVIEv

Figure 3: Select APAC countries' insurance penetration rates (2009-2016)



Source: OECD

consumers, the traditional model of relationship-based sales for simple financial solutions and products is no longer adequate.

Asia's growing millennial generation has greater purchasing power than the baby boomers' and gen-Xers that came before them. Their "me-first" mentality has been continuously influenced by technologies, where internet access, coupled with pervasive social media, have changed the modes of consumption. Consumers now demand a multitude of choices at their disposal, price transparency, convenience, and simplicity with the aim of instant gratification. Personalized, face-to-face interactions accompanied by branch visits and meetings with insurance agents are no longer the expectation.

In addition, the number of people joining the middle classes in the region is also growing, by an average of 10.5% (Figure 2). One example is in Indonesia, where the middle and affluent classes are expected to grow to 135 million by 2030.

According to a recent report by the Brookings Institute, the new middle classes will be predominantly Asian with "almost nine in ten out in China, India and South and Southeast Asia." This offers great promise for businesses, including insurance companies, as this segment is projected to reach 4 billion people by 2020 and 5.3 billion globally by 2030.

Brookings Institute further calculates that the middle-class markets in China and India will reach U.S.$ 14.1 trillion and U.S.$ 12.3 trillion by 2030, respectively. By comparison, the U.S. middle class market is projected to be U.S.$15.9 trillion by 2030.[5]

In China, the domestic sharing economy has already reached U.S.$500 billion in 2016 and is projected to grow by an average annual rate of 30% over the next five years.[6] The way insurance is delivered has been greatly influenced by this shift in consumer demographics and preferences.

The combination of surging affluence, flourishing societal and political landscapes (evidenced by becoming home to 46% of the world's population by 2020), globalization of economic policies, and liberalization of regulations has set Asia on course to take a prime position in the demand for insurance, and digital as its preferred channel.

Despite the increase in premium growth, the region still has a long way to go to reach the more developed insurance markets of the worlds. The average per capita spending on insurance coverage is the around U.S.$357, which is considerably lower than the average for the rest of the world, which is U.S.$1,340. According to Forbes, Asia holds 43% of the world's population but only 13% of total premiums in 2016.[7] The combined market size of Indonesia, Thailand, the Philippines, Vietnam, and Malaysia in 2015 was only 13% of Japan's and 4.5% of the U.S., in terms of gross written premiums. The penetration rates for life and non-life insurance combined stands at about 1% to 5.5% for these five nations, as opposed to about 11% for Japan and 7% for the U.S.[8] This deficiency highlights the significant opportunity for insurers to capture the uninsured and further foster financial inclusion.

Countries that have experienced significant growth in penetration rates in the past seven years are Singapore, Hong Kong, and Korea, with the latter two being the highest in the region. Singapore has shown strong signs of stable growth and the potential to catch up with HK and Korea, per OECD data. Other countries in APAC have a stable penetration rate of around 5% to 7%, with HK leading the way at 17.6% (Figure 3). This could be considered as a benchmark, acting as a barometer towards which other countries can strive.

[5] Kharas, H., and K. Hamel, 2018, "A global tipping point: half the world is now middle class or wealthier," September 27, https://brook.gs/2xMJ5c7

[6] Yang, Y., 2018, "China's sharing economy is minting multibillion-dollar tech unicorns," South China Morning Post, March 8, https://bit.ly/2DtljVF

[7] Choi, M., 2018, "How Asia's entrepreneurs are disrupting the finance industry," Forbes, March 26, https://bit.ly/2DqBKSL

[8] Tani, S., 2017, "Insurance promises Asia much more than peace of mind," Nikkei Asian Review, March 23, https://s.nikkei.com/2R2eNZr

3. ALL ROADS LEAD TO DIGITAL

Insurance has always been a data business. It covers various risks by creating pools of funds based on different insurance lines factoring in loss probabilities as well as consumer behavior. Forecasting these risks with greater accuracy and providing transparency to consumers will positively impact insurance premiums and create opportunities for customer segmentation. This can also have the ripple effect of creating new business models and products.

Globally, the traditional agency and bancassurance models are slowly being replaced through richer data engineering. However, the biggest disruptions to the industry is coming from digital, in both consumer and peer-to-peer business models. A recent study has suggested that the global "digital insurance market" will grow at an annual CAGR of 13.7% for the next five years.[9]

Big Tech has since cannibalized the industry in terms of distribution, marketing, and product sophistication. Chinese tech giants Tencent and Alibaba together established Zhong An, the first online only property insurance company, and have jointly entered the market to capture a slice of the sizeable industry by leveraging their vast, pre-existing communities as a ready-made channel to distribute their insurance products. Simultaneously, new and innovative products that insure against trends and current events have led to the rise of micro insurance. For example, Zhong An's medical policy on "overdrinking" during the 2014 World Cup period offered medical fees for intoxicated fans. The company also offered a "Night Owl insurance," which also covered medical and emergency related expenses.

The industry has also recognized the value of digitization. The development of digital-only offerings such as Kyobo Lifeplanet, Singapore Life, and Vouch allows for more leads to be generated through the digital ecosystem than through traditional agents. In December 2018, the Hong Kong Insurance Authority granted a virtual insurance license to Bowtie, a Sun Life-backed digital start-up, which plans to directly offer consumers commission-free health-focused insurance products.[10] It is expected to be up and running by mid-2019. This direct-to-consumer trend poses a great threat to insurance agents and brokers.

Asian customers are increasingly tech savvy and mobile, with ever-increasing expectations from their insurance providers on products, services, and pricing – at every significant stage of their lives. In addition, individual consumers are increasingly relying on mobile phones as a channel to interact with their financial services providers. There has been a gradual increase of mobile phone user penetration throughout the region, expected to reach nearly 60% by 2019. Insurtech companies can offer prospective digital customers their services via mobile phones and bypass traditional agents.

4. DEAL FLOWS

The convergence of the aforementioned macroeconomic trends has resulted in an influx of global intellectual capital and an appetite for investments. There were U.S.$697 million of insurtech funding in Q4 2017 alone, and a total of U.S.$2.3 billion for the entire year – a 36% increase from U.S.$1.7 billion recorded in 2016. Industry incumbents and new entrants to the market have both pushed towards greater digitization.[11]

The Chinese market again shined brightest, where there was a 44% increase in funding to 173 tech start-ups from 2016 to 2017. The listing of Zhong An, the first digital-only insurer, was a milestone for the industry. With its successful IPO in Hong Kong in September 2017 it raised U.S.$1.5 billion, making it the largest insurtech company in the world. One of Zhong An's initial founders is Ant Financial, an affiliate of Alibaba, which operates the world's largest digital payment platform. Its strength in technology and client resources supported Zhong An's successful product development of an e-commerce insurance product. Such investments in the development and adoption of new insurance technologies is expected to result in savings of around U.S.$ 300 billion per year for the Asian insurance industry by 2025.[12]

Over the past two years alone, there have also been significant deals and partnerships between insurance companies and insurtechs across different Asian countries. The overarching goals of these deals are to improve the

[9] https://bit.ly/2HnM9Cr
[10] Insurance Asia News, 2018, "Sun Life invests in 'virtual' Hong Kong startup Bowtie," December 21, https://bit.ly/2RDNoCi
[11] Willis Towers Watson, 2018, "Quarterly InsurTech briefing Q4 2017," February 1, https://bit.ly/2nEZ5Yk
[12] UBS, 2017, "Insurance, technology and Asia: how are they interconnected?" September 4, https://bit.ly/2RGTCBE

customer experience, create innovative products, gain market scale, and generate efficiencies. The highlighted partnerships in Figure 4 is a testament to the fact that Asia is supportive of insurtech's wider adoption. We expect more deals – partnerships, mergers, or outright acquisitions – to further accelerate the seamless delivery of the insurance value chain to the customers.

5. THE STATE OF PLAY – INCUMBENTS AND INSURTECHS

In an era where speed, convenience, and flexibility are no longer sources of differentiation but customer expectations, established players and newcomers alike have had to move up the learning curve quite rapidly. Banking and capital markets players have adjusted their digital agenda and placed innovation and technological

Figure 4: APAC insurtech deals landscape (note worthy deals and partnerships in the region)

INDIA

- **2018 – Acko,** receives US$12 million from **Amazon**, and launches passenger insurance for ride-hailing service, Ola
- **2018 – PolicyBazaar** lands US$200 million in funding from **SoftBank** to work towards enhanced customer experience, seamless platforms, and range of product offerings

CHINA

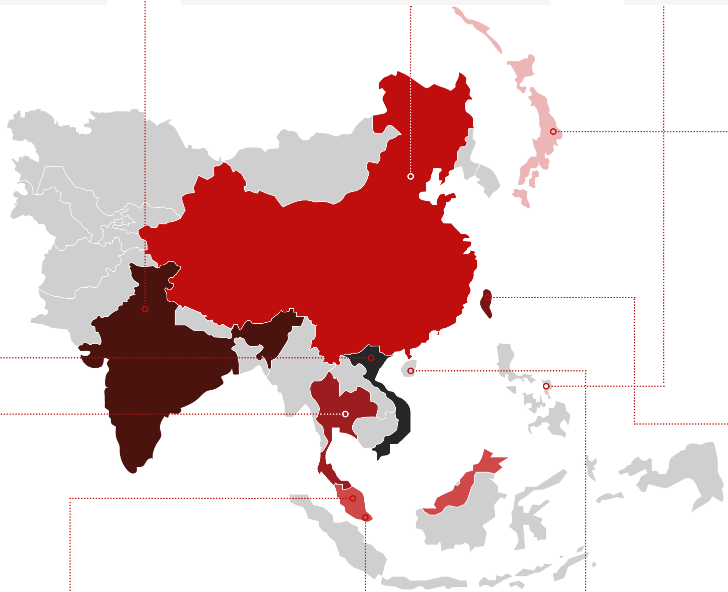
- **2018 – PingAn** and **Sanofi** pharmaceuticals team up to advance chronic diseases management, optimize the use of big data within healthcare, and explore approaches to collaborative healthcare funding
- **2017 – Baidu Inc** teams up with **China Life Insurance** to create a US$2.12 billion investment fund to back advanced technology companies and improve mobile internet and AI

PHILIPPINES

- **2018 – PhilCare** releases the HeyPhil app, using AI to help customers efficiently consult with doctors and shop for health insurance on their mobile devices.
- **2019 – MariaHealth** partners with VCs Core Capital and Gobi Partners, further expanding into the Philippines and enabling customers to easily compare what different healthcare and insurance brands have to offer.

VIETNAM

- **2017 – GoBear Vietnam** launches travel insurance comparison product comparing 26 products with 100 travel insurance plans
- **2018 – Liberty Insurance** teams up with Momo to offer its leading products, Cancer Ca$h and TravelCare on Momo's "E-wallet"



JAPAN

- **2018 – Rakuten** buys **Asahi Fire & Marine Private Insurance Co.** to develop insurance products using customer data accumulated through e-commerce operations
- **2018 – Sompo Insurance** partners with LINE Financial, to create and provide a new type of smartphone-optimized insurance service

THAILAND

- **2017 – Muang Thai Insurance** introduces "Muang Thai iDrive," a new smartphone app that gives precise driving style and behavior
- **2018 – Hearti** expands to Thailand, focusing on micro-insurance and on-demand policies like time-specific insurance for phones, cameras, or luxury handbags while traveling

TAIWAN

- **2018 – Fubon P&C Insurance** to use e-certification for vehicle liability insurance so that customers can keep up with their coverage at all times on their mobile apps
- **2018 – Allianz Life** and **IBM** partner, using IBM Watson Conversation and IBM Cloud to create an advanced insurance chatbot

MALAYSIA

- **2018 – Allianz Malaysia** partners with **PolicyStreet** to provide better online access to its digital automobile, home, flight, and travel insurance products.
- **2017 – Fatberry.com** and **Tune Protect** partner, allowing Tune Protect to sell its motor, travel, and PA insurance using Fatberry.com's intuitive chatbot-like interface

SINGAPORE

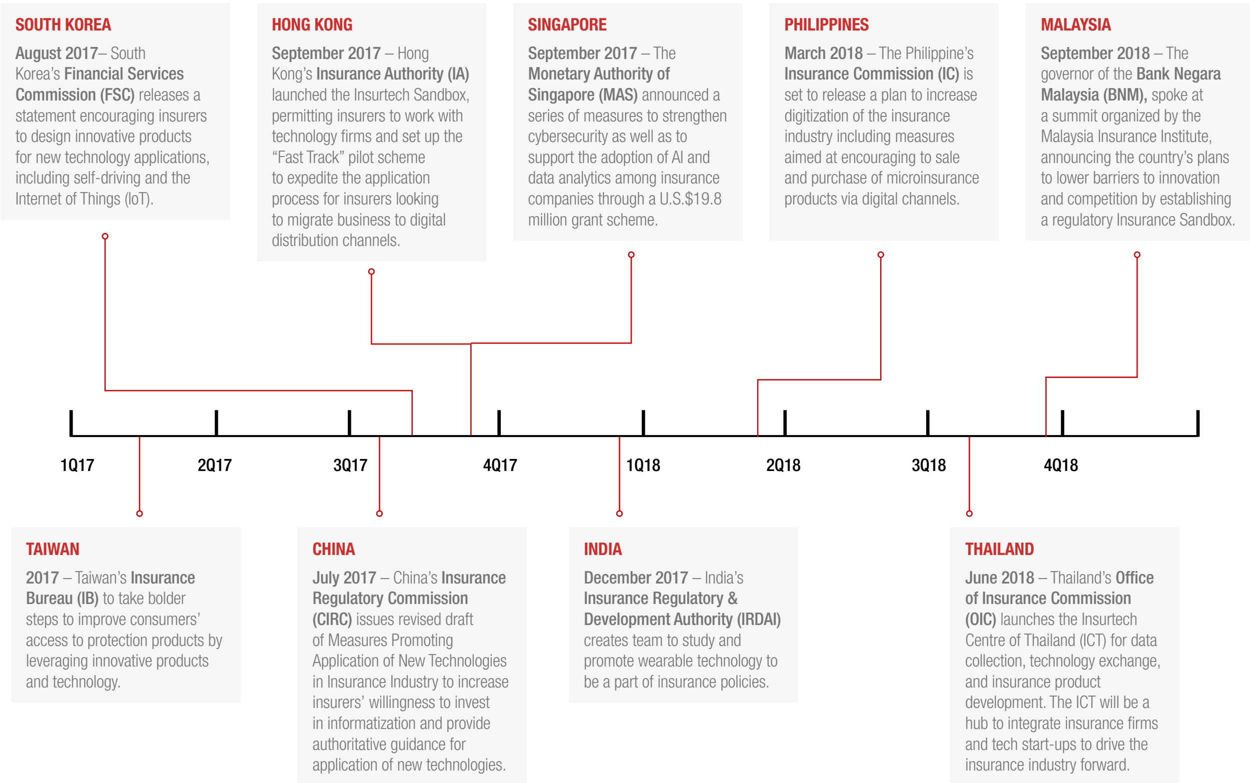
- **2017 – IAG** launches innovation hub in Singapore, drawing on its global innovation network and entrepreneurial community to enhance customer experience
- **2017 – PRU Fintegrate** partners with Kyckr, using its global network that provides real-time access to 80 million legal entities in 88 countries, aiding it in the regulatory space

HONG KONG

- **2019 – Bowtie** receives Hong Kong's first virtual insurance license and secures U.S.$30M in funding backed by insurance giant, SunLife, and Tencent founder, Pony Ma to offer affordable insurance products without the use of agents or banks
- **2018 – AIA Group** partners with **WeDoctor**, China's leading tech-enabled healthcare solutions platform, to provide innovative health offerings and protection solutions

Source: Capco Digital research and analysis

Figure 5: APAC regulatory landscape timeline



Source: Capco Digital research and analysis

transformation high on their list of priorities. The insurance industry is not far behind. It is collectively working on ways to accelerate their own transformations to keep pace with their consumers' changing needs and preferences.

However, the same questions that the early adopters of fintech faced in the banking and capital markets sectors, are now points of considerations for the insurance sector. At what rate should we pursue new technologies at the expense of our current working business models? Will it benefit our company and customers to be the first mover? Or is it a safer bet to be a fast follower? How should my organization approach and engage with emerging technologies?

What we observed in the earlier fintech wave was that the industry and emerging technologies could not be completely decoupled from one another. The key to having a meaningful technological impact and to unlocking the value of emerging technologies lies in the fusion between business and technology. This can only occur with a deep understanding of business, product, customer, and distribution channels. Insurers seem to be acutely aware of the potential of technology to disrupt their value chains but are still cautious in comparison to their banking peers. As of the third quarter of 2018, Asian insurers have spent U.S.$35.2 billion on technological advancements, up from U.S.$32.9 billion in 2016.

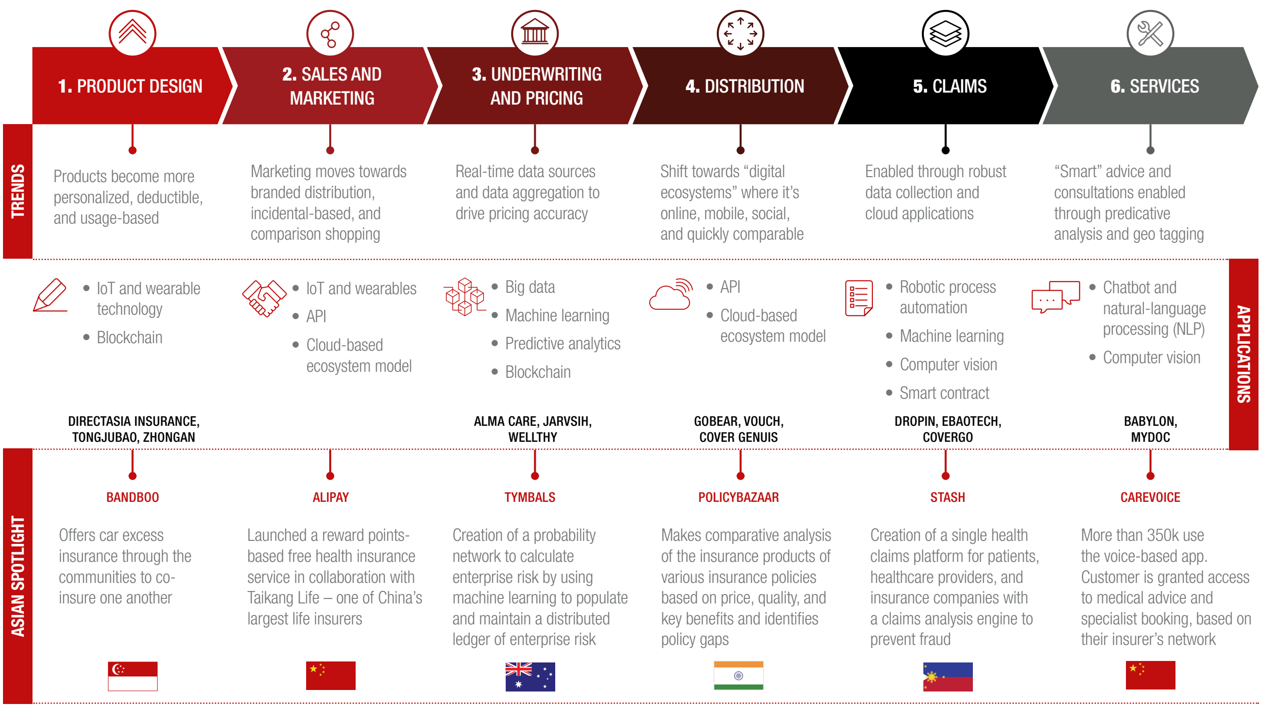
5.1 The regulatory landscape

While the insurtech innovation wave has been in sync with macroeconomic developments, regulatory bodies have also played an important role. With the guidance and encouragement from these local agencies, several countries in the region have experienced tremendous growth in insurance technologies and their industry's and nation's overall health. Over the past year, emerging and incumbent insurance companies have heeded the advice of their respective government regulators and followed their lead by partnering with technology firms to develop new products and simplifying the lives of insurance customers throughout the region.

Instead of pushing back and limiting the potential of these partnerships between insurance companies and technology firms, regulators such as Hong Kong's Insurance Agency (IA) and the Bank Negara Malaysia (BNM) are now launching programs to encourage the establishment of insurtechs. The IA recently set up their "Fast Track" pilot scheme to expedite the application process required for insurance companies when attempting to use digital, online distribution channels. It has led the way by launching an Insurance Sandbox that permits Hong Kong insurers to work with technology firms to experiment with new insurtech applications for their business operations. The BNM has also recently held a summit at the Malaysia Institute of Insurance, where the authority's governor spoke about the country's plans to lower barriers to innovations and competition by establishing their own regulatory Insurance Sandbox. Both of these regulatory bodies have made great strides in advancing these partnerships by lowering pre-existing barriers in a move that has become a necessary step in allowing the insurtech industry to thrive and provide customers with the products they demand.

Other countries have taken a different route to boost insurtech. By promoting the use of technology in their products and encouraging insurance firms to digitize, they have outlined a path for insurers to modernize their business strategy to help customers reap the benefits of insurance products of all kinds. The Monetary Authority of Singapore (MAS), the Philippines Insurance Commission (IC), and Korea's Financial Services Commission (FSC) have all announced plans to support the industry by promoting the development and application of new technologies in their products. The MAS has already gone as far as announcing a U.S.$20 million grant scheme that will encourage insurers to use AI, data analytics, and other advanced technologies in their products. The IC has targeted Philippine's large community of

Figure 6: The "super charged" insurance value chain



Source: Capco Digital research and analysis unbanked customers by promoting the development of microinsurance products with awareness campaigns. Korea's FSC is now promoting the use of a number of different advanced technologies, such as self-driving, the Internet of Things, healthcare, and electric vehicles. As these countries continue to invest in the industry and promote such technologies, the APAC insurance industry can follow in the footsteps of the finance industry in capturing the attention of Asia's increasingly tech-savvy consumers.

To promote an industry as vast as insurance, the APAC nations must create the environment necessary to help ideas and knowledge grow. By forming teams and establishing innovation hubs that foster the growth of the industry, some government authorities have taken the first steps in that regard. The Insurance Regulatory & Development Authority of India (IRDAI) and Thailand's Office of Insurance Commission (OIC) have started the process of creating an environment that promotes forward-thinking and knowledge exchange. The IRDAI has created a team dedicated to studying how wearable technologies can be used in risk assessment, risk improvement, and policy design. They also intend to advance the life insurance sector by using wearable devices to analyze fitness and healthy lifestyle. The OIC has gone as far as building a center that is fully dedicated to the advancement of the country's insurance industry with a focus on research, development of technologies, increasing accessibility of knowledge amongst the public, and connecting regulators with start-ups.

As these prominent APAC nations take measures to remove regulatory barriers, facilitate innovation, and establish centers of innovation, it has become clear that APAC's growing number of tech-savvy customers can only benefit from the modernization of the industry. The application of technology in insurance has already been a success in Europe and North America, but now regulatory bodies in APAC nations are following suit and listening to the needs of their constituents.

5.2 Insurtech applications along the value chain

Insurance is a data-driven business. The industry will require even more sophisticated automation and technical expertise to achieve efficiency. Amassing data and subsequently tailoring offerings to the needs of individual and commercial customer segments are especially crucial.

We believe that the insurance opportunities offered by digitization and technologies that acquire, manage, and process data will be immense. Figure 6 presents examples of the ways in which technology is disrupting the industry.

By exploring ways to promote and support innovation and the sharing of knowledge within Asia's insurtech industry, various in-country regulators have created a climate of forward-thinking that can only help APAC catch up with its western counterparts – and possibly even surpassing them in certain instances.

6. TECH TREND SHIFTING CONVENTIONAL TIDES

We now examine the following top insurtech trends positively impacting – and even revolutionizing – the industry across the region. In some cases, companies adopt the cutting edge technologies pioneered by western innovators whilst customizing them for their respective local markets, while in other cases they develop their own technologies.

6.1 Insurtech trend 1: Open APIs as an accelerator

Trend: APIs (application programming interface) have accelerated digital and technological agendas within developed financial markets. While APIs were initially seen as a threat to financial providers, they are now seen as enablers to help create new and attractive customer experiences.

Implications: the growth of the ecosystem services has resulted in traditional insurers losing market share over the last few years. Customers now demand an inter-connected service marketplace that extends beyond insurance products and is an extension of their insurance products, such as financial planning, home security, or car maintenance. APIs help address this lack of insurer flexibility by allowing for extensive sharing of information and services with third parties and vendors. Integration with other product extensions allows insurers to create more touchpoints and provide better customer experience, create new digital products, increase sales and distribution, and eventually move into creating disruptive business models.

Increased competition is coming in the shape of Big Tech and global players. Alibaba and Tencent are using

Table 1: Open APIs use-cases across the insurance value chain

COMPANY	AXA SINGAPORE (Singapore)	ZHONGAN (China)
BUSINESS DRIVERS	• Provide "insurance as a service" to fintech partners, allowing customers access to AXA's different insurance products to increase cross-selling opportunities • Respond to the initiative from the Monetary Authority of Singapore (MAS) for players in the financial industry to publish open APIs	• Deepen cooperation with smaller companies within a specialized ecosystem of partners unable to develop their own platform • Offer "insurance as a service" to partners with access to niche customer pools
USE-CASE	• Opened up transactional API and partnered with SATS Ltd; integrating AXA within its "Ready to Travel" app, which allows users to get seamless insurance coverage while planning for their trips • Available for home, travel, and car insurance, with health and life offerings in the pipeline	• Zhong An opened up their APIs to offer customized insurance solutions for partners in various industries: – DXY.cn, an online community of physicians, offers bonus coverage and discounted premiums for patients undergoing regular sugar level blood tests – Xiaozhu.com, a short-term apartment sharing platform, offered home occupancy and accident insurance to homeowners and tenants – Mogujie, a social commerce website, offers personalized credit insurance with rates adjusted to spending and payment records
BENEFITS	• Expand distribution capabilities via partnerships with a variety of channels • Improve the customer experience	

their digital reach to create a fully digital-only insurance experience. Notably, the automobile industry is forging ahead to provide a "vehicle-to-everything" platform. Volkswagen and Tesla have started to offer insurance with a car purchase and Ford is working with Autonomic to create an open platform "Transportation Mobility Cloud" to build out infrastructure communications for cities. Success will belong to those that control the customer interface and its data.

What is next: open APIs allow various insurance companies' channel partners to integrate their services seamlessly across the customer journey. This will be a continuing trend as open APIs creates a win-win situation for all parties. Additional values are provided to the customer and the channel partners, while at the same time helping the insurance companies to expand their reach to new potential customer pools, join other ecosystems (e.g., Google Nest), and create their own API platform that can offer opportunities for further growth.

A case in point is Ping An insurance, which built an API platform that allowed the company to offer advanced auto claim technology to small and medium-sized insurance companies at an affordable price.

Improving the insurer's distribution channels is only potential source of benefit, ultimately open APIs have the potential of transforming the entire insurance value chain via the free-flow of customer information.

6.2 Insurtech trend 2: Positive behavioral reinforcement via IoT

Trend: altering people's behaviors without limiting their options or impacting them financially yields powerful results. Public and private sectors alike are looking at ways to nudge customers towards healthier lifestyles, with an eye towards promoting better outcomes for individuals and the society at large.

Implications: a well-established use-case is the black box insurance for the automobile. With the motion tracking feature in smartphones and telematics, this has promoted safe driving by rewarding a lower premium to drivers who demonstrate safe driving practices. With the recent development of wearables and smart devices, the approach could be leveraged in other fields of insurance. Wearables and smart devices that monitor health signs will give richer data on individuals, with a vast potential for insurers to leverage this information and customize the policy and reward the customers.

Table 2: IoT use-cases for behavioral reinforcement

COMPANY	QUEALTH (U.K.)	HEALTH2SYNC (Taiwan)	BEAM DENTAL (U.S.)	JARVISH (Taiwan)
BUSINESS DRIVERS	• Customers using multiple sources of fitness and well-being apps and devices to track their behavior • No centralized platform for storing and analyzing these health and fitness customer	• Glucometers are not connected to smartphones • No easy way to track blood level with existing glucometers in the market	• Conventional dental insurance does not help prevent costly dental problems • Unable to track the customer oral care behavior to personalize the policy	• Over 400 million motorcyclists in Asia with risks of fatality 20 times higher than car drivers and occupants • Insurance is expensive for riders • Pricing depends on demographics with no input from personal driving behavior
USE-CASE	• Aggregates health and lifestyle data and scores the risk of developing the Big Five preventable lifestyle diseases • Score is available as an API	• Connect glucometers with mobile app via phone dongle • Sync up precise blood sugar data	• Uses a smart toothbrush that tracks how users brush their teeth • Offer discount on premium to reward good oral care behavior	• Monitor rider behavior by sensors in the smart helmet • Evaluate the risk from tracked behavior data
TECHNOLOGY	• Smart device & IoT • Big data • Machine learning	• Smart device and IoT	• Smart device and IoT	• Smart device and IoT • Big data • Machine learning
BENEFITS	• Provide powerful risk analytics and prediction platform on assessing an individual's health • Insurers can access and build out their own apps and services via the data from API	• Track a user's blood sugar in a data-rich context • Enable insurers to reward good behavior (via tracked blood sugar level) by giving a premium discount • Incentivize patients to better control their blood sugar levels	• Beam's insurance plan is 10%- 25% cheaper than competitors • Ability to offer personalized policy according to data collected • Motivate individuals to improve oral care by lower premiums	• Enable insurers to offer customized policies ranked by evaluated risk levels from the tracked driver data • Promote safe driving behavior and reduction of the number of fatal accidents

What is next: IoT technologies will continue to offer both insurers and consumers considerable advantages – from improving the accuracy to price risk to lowering insurance premiums. A case in point is the emergence of healthtech companies, who create enormous opportunities for insurers. With the enormous amount of health, fitness, and lifestyle data maintained by these innovators, partnerships with healthtech players can generate significant advantages for both parties. This is not limited to healthtech companies alone. Other insurtech companies monetize their user base data and have thus developed a sustainable revenue stream through cooperating with the insurers.

Possessing rich data and deep understanding of users can help in the development of highly personalized products. In addition, these technologies offer the means to track positive behaviors, such as healthy lifestyles, good driving habits, and desirable building maintenance, and reward them with lower premiums. This will translate into deeply engaged customers and increased customer loyalty.

6.3 Insurtech trend 3: Cloud and blockchain enabling personalization

Trend: interoperability, as applied to the healthcare industry, emphasizes the importance of effective use of data in healthcare. This results in improving processes and patient care, thus generating more proactive treatment plans. Interoperability will pave the way for the adoption of data-driven operating models in the healthcare and insurance industries.

Implications: sharing of medical data is not only helpful to patients to receive the best medical advice and services, it also helps insurers have greater visibility about the medical background of patients. Insurers can provide a more personalized policy via predictive analytics of medical records, including family medical history, in the future. Interoperability between healthcare providers can help prevent the development of long-term illness and costly claims, thus promoting well-being of all patients in the long term.

Table 3: Cloud and blockchain use-cases for personalization

COMPANY	PING AN HEALTH CLOUD (China)	GEM (U.S.)	MEDREC (U.S.)
BUSINESS DRIVERS	• Patient's data are scattered among different organizations, making it difficult for them to access past records	• Organizational data silos rendering insurance value chains inefficient	• Lack of centralized repositories to store and handle medical records
USE-CASE	• PingAn Health Cloud members can, with the patient's permission, access their health records instantly, including information from providers and insurers • Offers health risk assessment, smart self-diagnosis, and triage using the data housed in the cloud	• GemOS allows patients, providers, and insurers to securely view a patient's health timeline in real-time, improving speed and transparency throughout the claims process. • Adds security via permissioned blockchains in which patients control access and there is a shared ledger system in which every new change is recorded.	• Indexed medical records on the blockchain linking access to the patient's medical records across multiple doctor databases • All relevant parties can access a patient's health records instantly with the patient's permission
TECHNOLOGY	• Cloud	• Blockchain (Ethereum) • Smart contracts	• Blockchain (Ethereum) • Smart contracts
BENEFITS	• Huge amount of aggregated data can be used to support the underwriting and pricing of health insurance products • Customers can enjoy personalized policies by sharing medical backgrounds with insurance companies • Healthcare data enables effective health risk assessments to identify diseases in the early stages of an illness and reduce claims	• Quick verification and reimbursement of health claims • Healthcare data enables effective health risk assessment to identify diseases in early stages and prevent claims	• Decentralized network allows for sensitive medical data to be shared with the blockchain technology securely • Aggregated and anonymized metadata could be obtained for predictive analytics by acting as miner to verify the exchange of information

Furthermore, the conventional approach for insurers to assess the risk and price a healthcare policy relies predominantly on health snapshots obtained at the single point of time when the customers onboard. The sharing of medical data and fitness data will allow insurers to have a comprehensive view of the customer's condition and lifestyle, in a continuously fluid fashion.

Other stakeholders, such as researchers, can also utilize the rich data available to foster a data-driven healthcare ecosystem.

What is next: insurers now have the opportunity to play a very significant role in the healthcare ecosystem. They can either establish and lead in creating a unique solution or enter into partnerships and alliances with emerging players. The next evolution of insurance will be primarily driven by data exchange and sharing between different stakeholders in the ecosystem – from new customer acquisition, fraud prevention, predictive analytics on risk and pricing, to instant claims processing. Being isolated from the ecosystem and missing this considerable opportunity results in a loss of competitive advantage in the long run.

6.4 Insurtech trend 4: AI, machine learning, and IoT leading to automation

Trend: recent advancements in blockchain and AI have brought about a high degree of automation that can profoundly influence the operations of the insurance industry. Machine learning has advanced greatly in recent years, particularly in deep learning and image recognition. By training neural networks with a vast number of sample photos, AI technology can be taught to recognize objects as well as details within images. In the property insurance context, AI can assess the level of damage, down to the parts impacted, in the event of a car accident. This offers the potential to replace some human activities for claim investigations and verification. For example, the level of damage of a car and its parts in a vehicle accident. This makes it possible to replace some manual activities in claim investigations and verification used to be done by humans. Natural language processing (NLP) fuels the evolution of chatbots, which are now becoming more user-friendly and human-like. Chatbots are starting to handle more complicated customer service scenarios – Google Duplex can answer phone calls as humans can. And these AI technologies are made accessible as a cloud service from providers such as AWS (Amazon Web Services) and Google Cloud.

The proliferation of IoT technology may also advance automation. Insurers will be able to monitor homes and vehicles in real time, and if there is a catastrophe resulting in a large-scale claim, the insurer can mobilize satellites, drones, and weather open data immediately to prepare for the claims with matched policyholders. SkyClaim, a service developed by Skymatics, offers crop damage analysis reporting solutions for crop insurance. By using drones surveying and computer vision technology, it helps the insurers and the policyholders to easily determine the crop damage and yield loss.

Implications: claims management plays a very significant role in the customer experience of an insurance product. Further, rather than employing complicated claim forms manually filled by the customers and going into a lengthy reimbursement process, technology-advanced insurers are automating this by implementing smart contracts, open data, machine learning, and IoT technology. Traditional claims management will likely focus on more complicated and unusual claims, disputed claims where technology helps the negotiation, investigation, and settlement.

Table 4: AI, machine learning and IoT use-cases for automation

COMPANY	AXA'S FIZZY (France)	LEMONADE (U.S.)	ZHONG AN (China)
BUSINESS DRIVERS	• Written confirmation by the airline is required for claiming compensation for delayed flights • Verification of the delayed flight takes time and manpower	• Tech-savvy customers expect an instant response, and it is costly to maintain a well-training and responsive customer service team to be available 24/7 to assist the customers	• With the innovative insurance products developed by ZhongAn, there is a considerable amount of claims submitted • Fraudulent and exaggerated claims with photoshopped images
USE-CASE	• Offer instant and automatic payment if a customer's flight is delayed for more than two hours	• Submit claims and promptly receive payouts via chatbot • Guiding customers step-by-step throughout the claims process without involving human customer service	• Phone screen warranty – determine if the screen is in a good condition or broken from the photo sent by the customer • Automobile insurance – determine the damage to a car from pictures and estimate the loss from the photo sent by the customer
TECHNOLOGY	• Blockchain (Ethereum) • Smart contract	• Chatbot / NLP	• Computer vision • Machine learning
BENEFITS	• Offer a fully automated customer experience during the claims process • Compensation decision is triggered by external data (global air traffic databases), which underscores the improved credibility of the service • Eliminate the resource needed to handle the claim	• Makes the process simpler and faster, thus improving the customer experience • Built-in anti-fraud algorithms • Augment the customer services team • Cost saving	• Reduce the resource and time needed for investigation to process a claim • Prevent fraud by detecting if the image is manipulated • Improve the customer experience

What is next: automation in claims management will be moving from cost and resource savings to enhancing the customer experience by enabling instant and seamless claims process. With the rising population of millennials and tech-savvy users, using AI for customer service will be a core feature demanded. Insurers should either start developing their own capacity in AI or seeking the right technical partner to deliver the new customer experience.

Progress in IoT and blockchain will also build the foundations for smart contacts, enabling fully automated claims management. With more innovators in the blockchain field starting to introduce real-world data to the blockchain, insurers should consider the possibility of developing new products associated with the blockchain and offer completely automated claims management via smart contracts. In the future, the FNOL (first notice of loss) contact will not be made by the customer but triggered automatically by smart devices and smart contract monitoring open data.

6.5 Insurtech trend 5: Blockchain as the fraud police

Trend: the immutable nature of blockchain ensures that the records stored in the chain are almost certain to be genuine. A well-understood application of this nature of blockchain is cryptocurrencies, such as bitcoin. Transactions are stored and locked in the blockchain, and it is impossible for anyone to alter them; hence the integrity of the entire system can be generally ensured.

Implications: it is estimated that about 10% of global compensation claims for property damage or personal accidents are fraudulent, meaning that genuine customers end up paying more for their premiums. Using the records from blockchain can improve the management of fraud risk and result in lower premiums.

There are current use-cases of blockchain that can help to prevent insurance fraud by improving the provenance of property and the reliability of the tracking records in the supply chain. In addition, personal identity authentication mechanisms via smart contracts are now empowering insurers to verify the identity of those making claims. With these extra layers of verified information from the chain, insurers now can better control fraud risk and reduce the costs associated with fraudulent claims.

What is next: fighting insurance fraud will be a continuous effort and blockchain offers the prospect of perfect data integrity; it will be part of toolkit used to examine the reliability of claims via innovative solutions in the market.

Meanwhile, the amount of data available in the blockchain will continue to grow, the benefits of which go beyond just combating fraud. With the complete history of customers, such as the health and fitness data in the medical chain,

Table 5: Blockchain use-cases for fraud prevention

COMPANY	CIVIC (U.S.)	EVERLEDGER (U.K.)	STATWIG (India)
BUSINESS DRIVERS	• Medical identity thieves make claims on other peoples' policies, resulting in financial losses to insurers and customers	• Lack of data on luxury assets resulted in risk of scamming an insurer	• Logistics records can be easily manipulated • Insurers have difficulty in accessing and validating proof of loss of the shipments and process claims in cargo insurance
USE-CASE	• Authentication data shared with the requesting party with the user's approval • Alerts users via a push notification when their identity is being used at the time of the transaction	• Recording the lifecycle of a diamond using the Diamond Time-Lapse Protocol on blockchain • Shared records visible across the industry participants	• Provide real-time, tamper-proof, end-to-end tracking for shipments • Insurers are able to track shipments for proof of losses and offer risk reduction services
TECHNOLOGY	• Blockchain (Ethereum) • Smart contracts	• Blockchain (Ethereum) • Smart contracts	• Blockchain (Ethereum) • Smart contract • IoT
BENEFITS	• Insurer can easily validate whether the identity of the person submitting the claim is correct • Protect users against identity theft	• Prevent fraud in luxury property insurance • Manufacturers, sellers, and consumers of the diamond are stored in the blockchain trackable by the insurer; it is very challenging to commit fraud on such well-tracked assets	• Preventing fraud in cargo insurance claims

insurers will be able to undertake predictive analyses and accurately price their policy for each individual. This underscores the concepts discussed above on positive reinforcement and inter-operation of technologies like AI, blockchain, and IoT. These emerging technologies can reshape the insurance industry landscape.

7. CONCLUSION

The growth of the insurance industry in the Asian region is clearly linked to macroeconomic factors, as well as continued investment in the region. The demographic composition of Asian countries is rapidly changing. The rising purchasing power of the middle-class in urbanized areas with relatively low market penetration for insurance is a powerful growth driver in Asia. In addition, the rising millennial generation fuels innovation. The tech-savvy population increases propensity for early and easy adoption of digital solutions.

Insurtech is rapidly transforming markets in the West, and Asia is fast reaching its inflection point and will be the next catalyst for the transformation of the industry. Insurtech has contributed significantly to global premium growth in 2017, and we expect this trend to continue, creating outsized opportunities for traditional insurers as well as new digital insurance companies and big tech companies.

Increased competition in APAC is expected among incumbents and new players. Consequently, a solid understanding of the unique landscapes of the fast-growing markets in Asia and the agility to adapt to new trends via proprietary technology investment and partnerships will be critical to the success of insurers.

The unique macroeconomic dynamics of the Asian region as well as insurtech ecosystem innovation are being further aided by supportive governments and improved regulations. With the continued rollout of various initiatives initiated by the different insurance governing bodies the industry transformation will continue.

For these reasons, we expect further transformation of the traditional insurance industry in Asia. Relationship-based sales, currently the dominant approach in the region, will increasingly be characterized by disintermediation as customers continue to gain greater transparency on pricing and coverage ushered in by new technologies. Insurers will increasingly face the challenge of creating new value propositions and providing unique customer experiences. The strategic imperative rests on the insurers becoming adept and agile to harness the potential of insurtech, which will then enable them to stay ahead of the curve.

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