



SOCIETY OF  
ACTUARIES®

2019 **ANNUAL  
MEETING**  
& EXHIBIT

October 27-30  
Toronto, Canada

## Session 022: InsurTech Trends, Challenges and Application Case Studies

[SOA Antitrust Compliance Guidelines](#)

[SOA Presentation Disclaimer](#)

## Session 022 - InsurTech Trends, Challenges and Application Case Studies

Presenters:

Chris Murumets, Managing Director, RGAX

Sharon (Xueyun Huang), FSA, Director & Consulting Actuary, Milliman China

Sunil Rawat, Founder & Chief Executive Officer, Omniscience

Moderator:

Yanjie Feng, FSA, MAAA, Prudential

Date: October 28, 10:30am to 11:45am



# SOCIETY OF ACTUARIES

## Antitrust Compliance Guidelines

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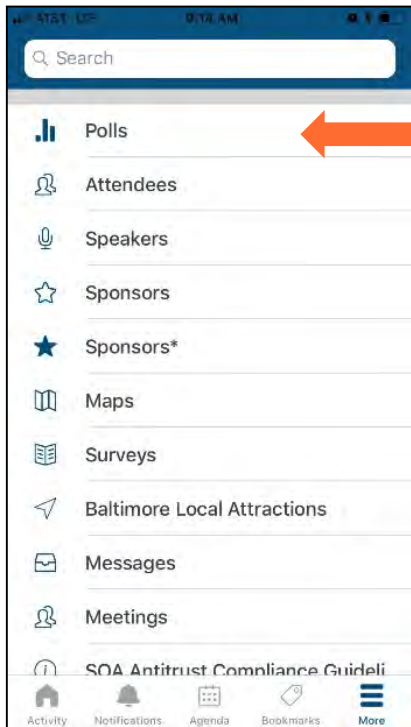
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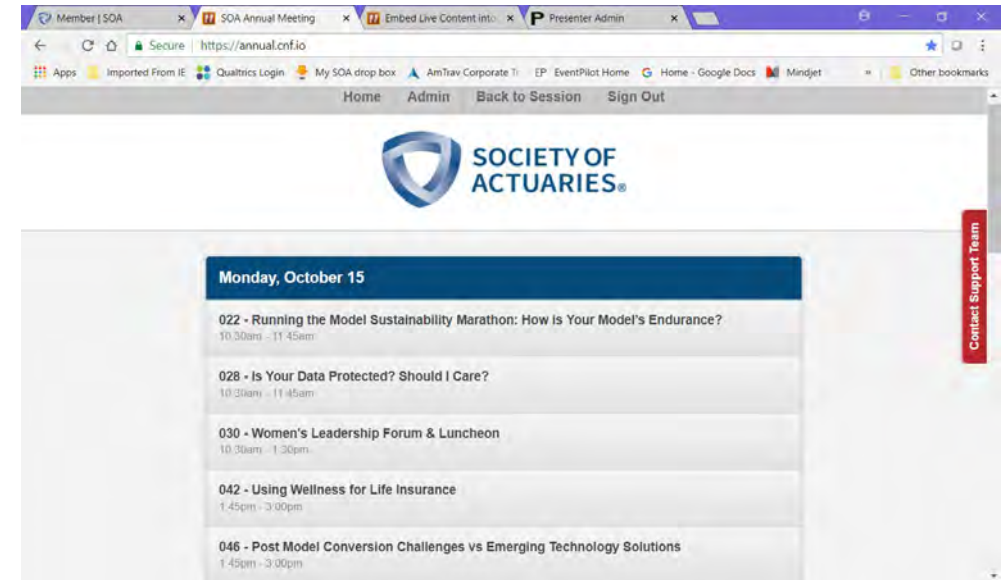
# To Participate, look for Polls in the SOA Event App or visit [annual.cnf.io](https://annual.cnf.io) in your browser

Find The Polls Feature Under **More**  
In The Event App or Under This  
Session in the Agenda



or

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## *Live Content Slide*

*When playing as a slideshow, this slide will display live content*

**Poll: In your opinion, which of the following areas is the most challenging in digital transformation for insurance?**

## *Live Content Slide*

*When playing as a slideshow, this slide will display live content*

**Poll: In your opinion, how would Online Insurance, Big Data, Artificial Intelligence, Cloud Computing, and Biometrics Identification be impactful to your company growth in next five years? Scale 5 is the most impactful.**

## *Live Content Slide*

*When playing as a slideshow, this slide will display live content*

**Poll: How would you describe the current status of your company's investment in Insurtech?**



## *Live Content Slide*

*When playing as a slideshow, this slide will display live content*

**Poll: In your opinion, which of the following approaches is the most practical for incumbent insurers to collect more data?**

# InsurTech in China

Sharon Huang, FSA, FCAA

28 October 2019



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# Agenda

- 2017, the first year of InsurTech era in China
- Changes to China's insurance business
- Major challenges going forward

# 2017, the first year of InsurTech era in China



# What makes 2017 the turning point?

- Prevention financial risk and regulatory tightening is the theme of China's financial policy in 2017

Since the 2011 Financial Sector Assessment Program, China's impressive economic growth has continued, and it is now undertaking a necessary but prolonged economic and financial transformation. *While the financial system has facilitated this high growth rate, it has developed rapidly in size and complexity and it has emerged as one of the world's largest with financial assets at nearly 470 percent of GDP.*

Tensions, however, have emerged in various areas of the Chinese financial system. ....

*The system's increasing complexity has sown financial stability risks.*

- IMF Financial System Stability Assessment of PR China, 2017

Representative financial regulatory measures taken in 2017

- Set up the *Financial Stability and Development Committee* under China's State Council for the purpose of strengthening coordination between financial regulators and supplementing regulatory shortcomings
- Over 20 key financial regulatory rules were released and over CNY 8 billion regulatory penalty charged which is record high.

**For insurance industry**

- Asset driven business model represented by insurers like *Anbang* coming to an end.
- Selling high volume of short-term products with little insurance content that are similar to WMPs and bank deposits were curbed.

# What makes 2017 the turning point?

- The small and medium-sized insurers' business development met difficulties under insurance industry's transformation





# What makes 2017 the turning point?

- In 2017, Ping An unveiled its “Finance + Technology” strategy which has powerful demonstration effect to the other insurance players



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平安医保科技  
科技驱动管理式医疗平台



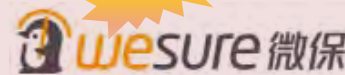
金融壹账通  
ONECONNECT

# What makes 2017 the turning point?

- By the end of 2017, the top internet giants in China have all entered into insurance industry



Ant Insurance General Agency Firm



Insurance Brokerage Firm

Insurance Brokerage Firm

# What drives the rapid development?

- Large unmet insurance needs – life side

Mortality protection gap

USD bn	2000	2004	2007	2010	2014	CAGR* (2004 to 2014)
China	3,735	6,540	11,193	18,573	32,074	17%
India	2,071	3,067	4,998	7,027	8,555	11%
Japan	6,198	6,554	6,305	8,617	6,579	0%
South Korea	1,756	2,479	3,697	3,645	5,296	8%
Australia	542	784	952	1,078	1,087	3%
Indonesia	258	442	526	693	793	6%
Thailand	303	326	438	531	767	9%
Vietnam	97	137	230	363	629	17%
Hong Kong	391	421	430	439	538	2%
Malaysia	170	225	293	397	524	9%
Singapore	155	168	227	300	402	9%
Philippines	80	111	196	274	372	13%
Taiwan	105	234	198	186	177	-3%
<b>Total</b>	<b>15,861</b>	<b>21,487</b>	<b>29,686</b>	<b>42,123</b>	<b>57,794</b>	<b>10%</b>

Mortality protection gap per working person with dependent

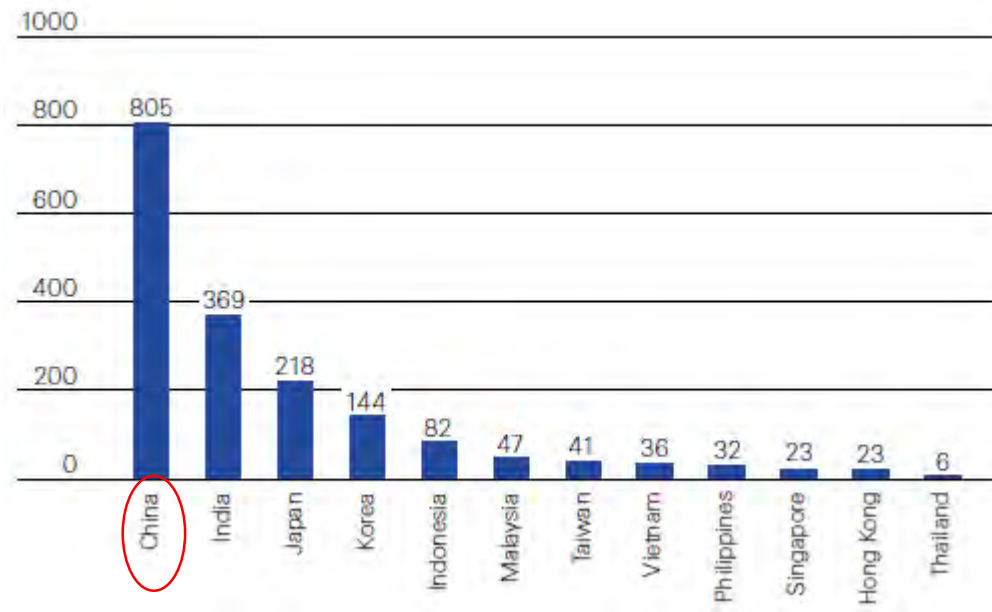
USD	2000	2004	2007	2010	2014	CAGR* (2004 to 2014)
South Korea	154,912	208,243	302,210	292,095	402,589	7%
Hong Kong	233,497	238,914	235,248	239,070	286,512	2%
Singapore	149,727	157,156	183,009	212,999	254,596	5%
Japan	183,428	196,710	188,421	258,217	201,606	0%
Australia	112,656	153,227	173,292	184,067	175,685	1%
China	10,314	17,376	29,146	47,981	80,937	17%
Malaysia	34,741	41,848	51,511	65,750	79,014	7%
Thailand	17,614	17,714	22,889	27,362	38,416	8%
India	10,225	13,573	21,450	30,135	35,181	10%
Taiwan	21,509	45,747	37,030	33,618	30,762	-4%
Vietnam	4,705	6,024	9,571	14,236	23,161	14%
Philippines	5,116	6,317	10,980	13,989	17,232	11%
Indonesia	5,281	8,466	9,605	12,103	12,951	4%

Source: Swiss Re

# What drives the rapid development?

- Large unmet insurance needs – health side

Health protection gap ( USD billion )



Source: Swiss Re

Health protection gap per household

	Average gap per household		Average gap for the 5% of households with the largest gap	
	In USD	In % of household income	In USD	In % of household income
Singapore	13 776	10%	205 012	144%
Hong Kong	9156	7%	133 481	104%
Korea	7791	13%	105 406	175%
Malaysia	6864	20%	132 918	384%
Taiwan	4823	10%	61 380	124%
Japan	4095	6%	55 682	79%
China	1724	10%	19 107	111%
Philippines	1406	9%	20 999	131%
India	1382	18%	22 900	301%
Vietnam	1251	22%	19 054	330%
Indonesia	1230	10%	13 783	113%
Thailand	287	2%	2441	17%
<b>Emerging Asia</b>	<b>1565</b>	<b>11%</b>	<b>20 389</b>	<b>139%</b>
<b>Mature Asia</b>	<b>5318</b>	<b>8%</b>	<b>72 398</b>	<b>105%</b>
<b>Asia</b>	<b>1893</b>	<b>10%</b>	<b>24 941</b>	<b>131%</b>



# What drives the rapid development?

- Data: not only huge volume but also advantage in access to wider variety

- 829 million internet population
- 817 million mobile internet population

- 600 million online payment user
- 583 million mobile payment user

- 610 million online shopping user

- 410 million online travel booking user

- 27.6 hours spent online per week

WeChat, an app owned by Chinese technology company Tencent, allows users to “hail a taxi, order a meal, book a hotel, manage a phone bill, and buy a flight to the United States, all without ever leaving the app.” – *Kai-Fu Lee*

In the United States, these services, and thus the data, are divided between such firms as Uber, Postmates, Expedia, Verizon, and Venmo

*Source: China Internet Network Information Center*

# What drives the rapid development?

- China is catching up on capabilities of core technologies

## Who is winning the AI race?

	CN	EU	US
Talent	2.1	6.2	6.7
Research	3.8	3.8	7.6
Development	4.8	5.3	14.9
Adoption	7.7	1.3	1
Data	11.6	5.4	8.1
Hardware	2.5	1.5	6
Total	32.5	23.5	44.3

Chinese companies focus more on business model innovation and the application of technologies than on the technology itself

Source: Center for Data Innovation

# The changes to China's insurance business- with focus on product development



# Long term annuity insurance – lack of flexibility?



*Can be purchased anytime, anywhere, any amount*

*Receive cash dividend on monthly basis*



# Insurance is not social product?

*Instead of purchasing the product by yourself alone, share the purchase linkage to your friends and invite your friends to join together. Your friends' participation can help increase your policy's sum assured.*

爱升级：史上最最有爱的宝贝健康计划，多一人参与，所有宝宝受益

4月17日



试试~

【爱升级】史上最最有爱的宝贝健康计划！有宝宝的您也快来吧！

所在位置 >

可见范围 公开 >

# Insurance is No Fun?

- The different experience with Wesure

Free gifts offered for opening up Wesure

### ATTRACTIVE

Willing to come in and take a look. No pressure to make purchase.



# Insurance is No Fun?

- The different experience with Wesure

Various games to attract you keep coming back and spending more time on Wesure

### Fun

Earn credits for some very simple activity such as joining a hot topic discussion or looking into an insurance product or adding Wesure to the list of your favorite mini-programs



# Insurance: To be or not to be?

帮助他人  
守护自己

相互保 大病互助计划

0元加入, 先享保障  
一人生病, 众人均摊  
30万保障, 帮一个家

10,007,678 人已加入

立即加入

- On 16 Oct 2018, Trust Mutual Insurance Company and Ant Financial jointly launched “Xiang Hu Bao”, which was declared as a critical illness insurance product\* underwritten by Trust Mutual.
- 3,000,000 people joined within 3 days  
10,000,000 people joined within 10 days
- Why it is so popular?
  - 0 cost to join. Each participant will share the cost of claim benefit equally with cap limit of CNY 0.1 per claim case
  - Enhanced transparency and security:
    - Claim materials are available to all the participants for publicity.
    - If the insured and Trust Mutual could not reach agreement on claims settlement, the case could be submitted to internal jury whose members are existing participants of the plan
    - Use blockchain to record all the data
    - Trust Mutual charges 10% of each claim amount as its only source of revenue
- The product quickly caused big controversy in the industry. The regulator stepped in and made investigations on the case.

\* The insured will receive CNY 300K (aged 0-39) or CNY 100K (aged 40-59) if he/she is diagnosed one of the 100 dread diseases for the first time during the 1 year insurance period after 90 days waiting period.



# Insurance: To be or not to be?

- On 27 Nov 2018, Trust Mutual Insurance Company and Ant Financial announced that “Xiang Hu Bao” changed from an insurance product to a mutual aid program operated by Ant Financial due to notice from regulator stating that the previous plan is not consistent with the insurance policy provision filed with the regulator
- 30,000,000 people joined within 2 months  
80,000,000 people joined within 9 months
- What are the key differences?
  - No involvement from insurance company.
  - Ant Financial charges 8% instead of 10% of each claim amount as its only source of revenue of running the program
  - Ant Financial promised that each participant’s share of claim benefit for 2019 is capped at CNY 188 with any additional amount covered by Ant Financial
  - If the number of participants dropped to less than 3.3 million in the future, the program will not be dissolved immediately. Instead, Ant Financial will extend the protection for another year.

The advertisement features a background image of hands holding a globe. At the top, it says '相互宝 帮助他人 守护自己' (Xiang Hu Bao Help others protect yourself) and '大病互助计划' (Major illness mutual aid plan). The main headline reads '0元加入 享30万互助金' (Join for 0 yuan, enjoy 300,000 mutual aid funds). Below this, it states '单个赔付案件的分摊费用不超过0.1元' (The sharing fee for a single claim case does not exceed 0.1 yuan). A progress bar shows '17225379 人已加入新计划' (17,225,379 people have joined the new plan). Logos for '支付宝 ALIPAY' and '芝麻信用 SESAME CREDIT' are displayed. A note mentions '2019年1月31日前的分摊费用由我们承担' (The sharing fee for users who joined before January 31, 2019, is covered by us). A final call to action is '立即加入' (Join now) with a sub-note '授权查询芝麻信用评估结果并关注生活号' (Authorize to query Sesame Credit evaluation results and follow the life account).

# Implications to actuaries

Traditional Actuary



Digital Actuary

*Deep understanding of insurance company's financial performance and their policy-holders.*



*Dynamic analytical capabilities with better tools to deal with the new/complex/real time data and new emerging risk.*



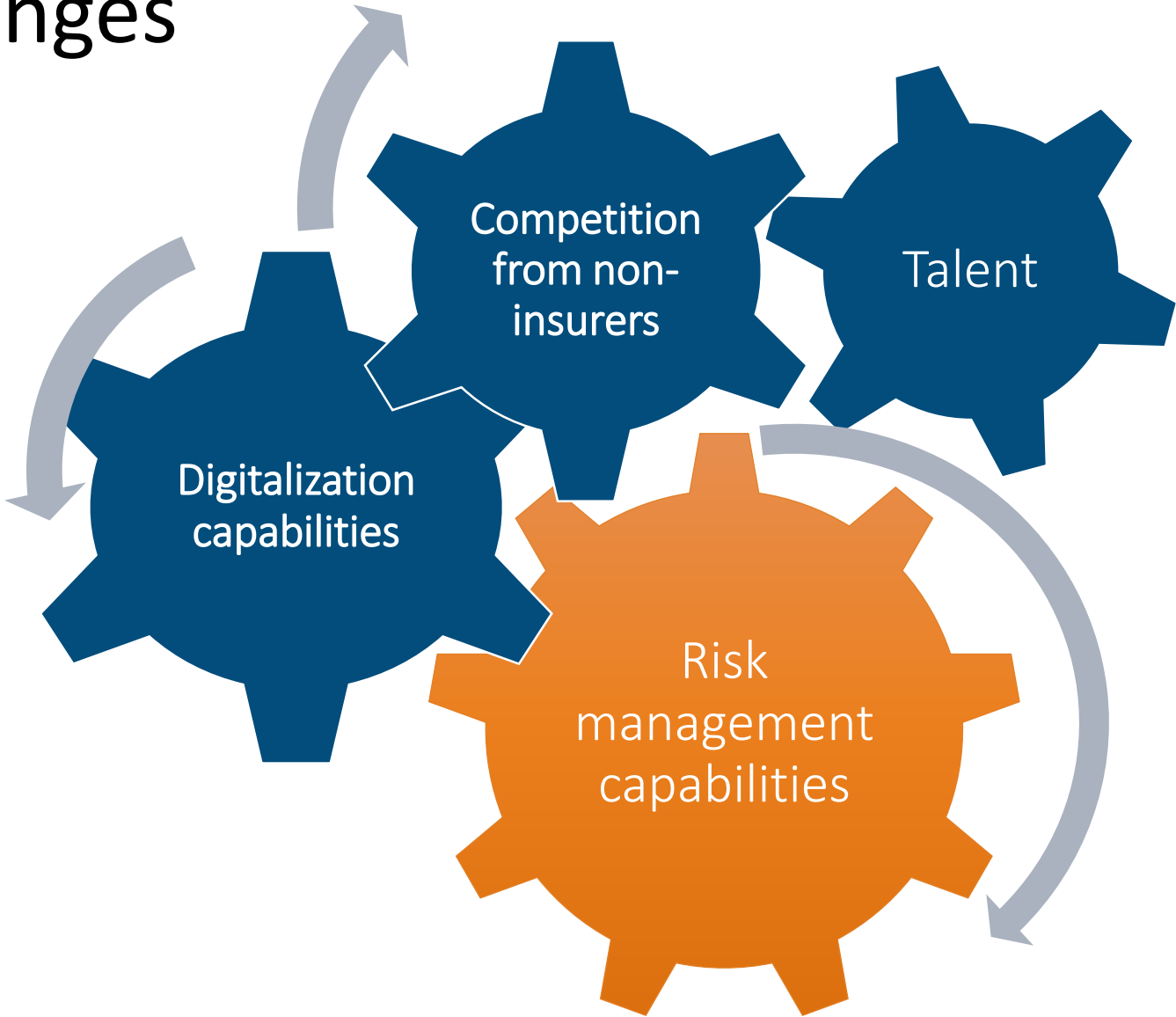
New Mindset:

- Customer oriented
- Competition from non-insurance companies

# Major challenges



# Major challenges





# The Future is Now

**Sharon Huang, FSA, FCAA**  
**Director and Consulting Actuary**  
**Milliman**

[sharon.huang@milliman.com](mailto:sharon.huang@milliman.com)



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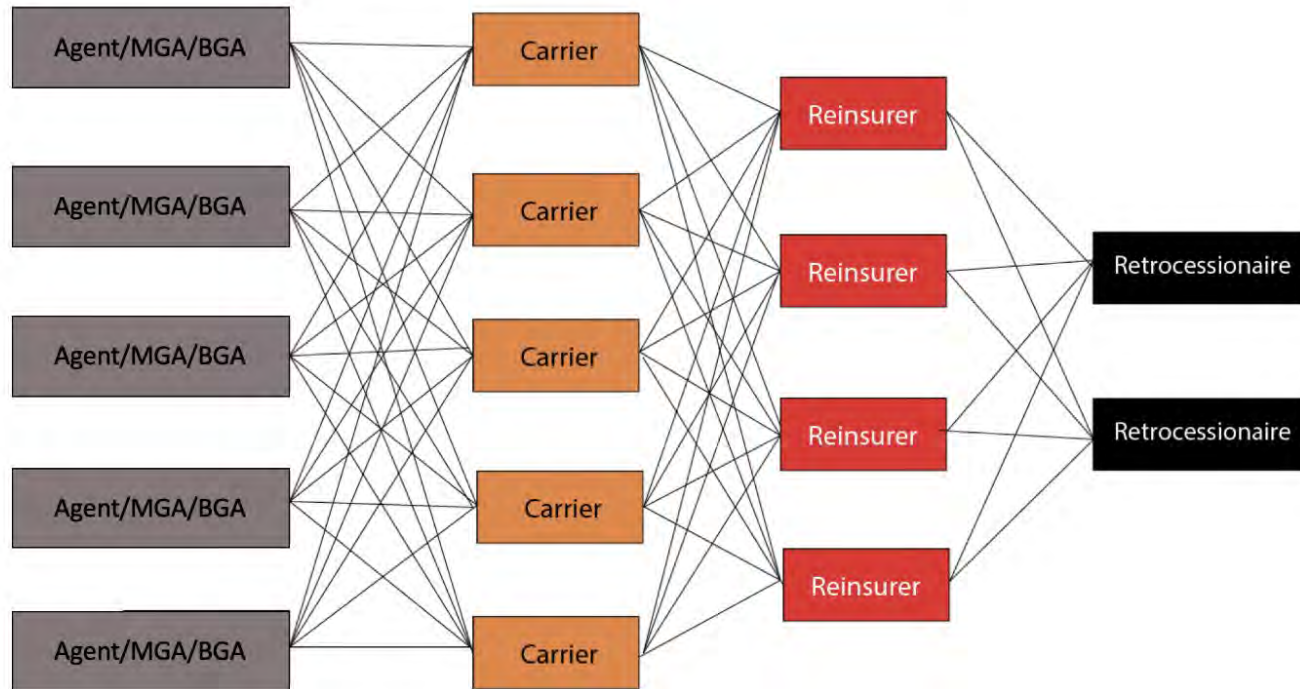
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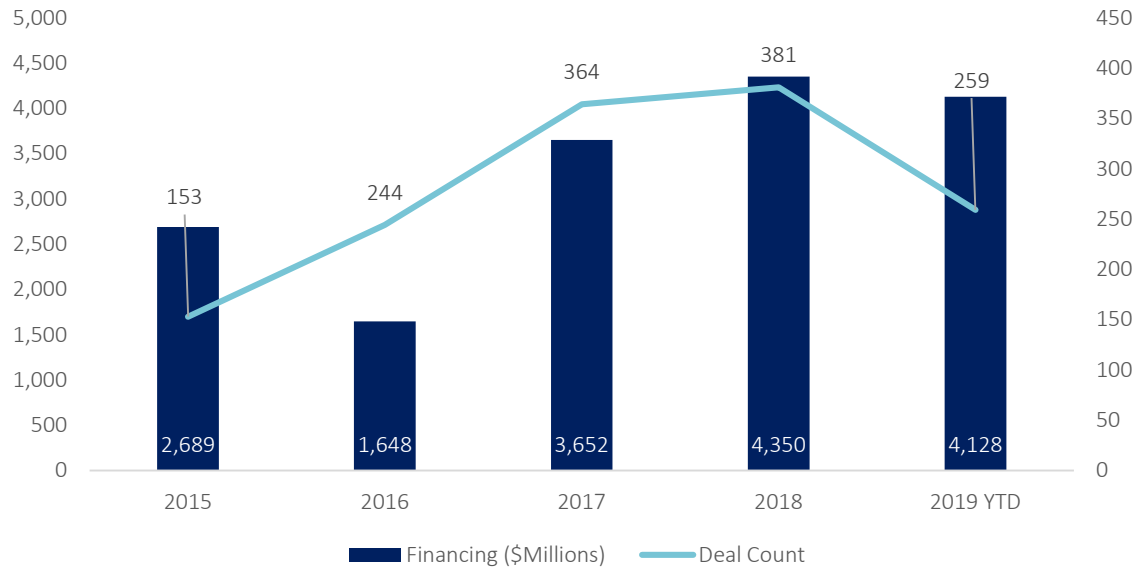
# The Operational Problem/Reality



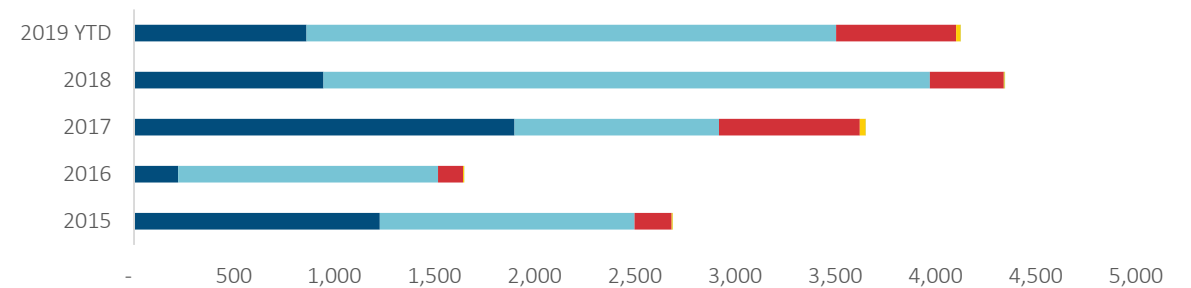
- Each line represents hundreds of pieces of data flowing between counter-parties
- The life insurance industry does not have a widely adopted data standard to share information
- It's even more complicated as the lines are bi-directional. Premium data flowing to the right, and claims data flowing to the left
- To evolve, the insurance industry needs to solve for these inefficiencies

# The Money ... How Much?

Global Insurtech Funding



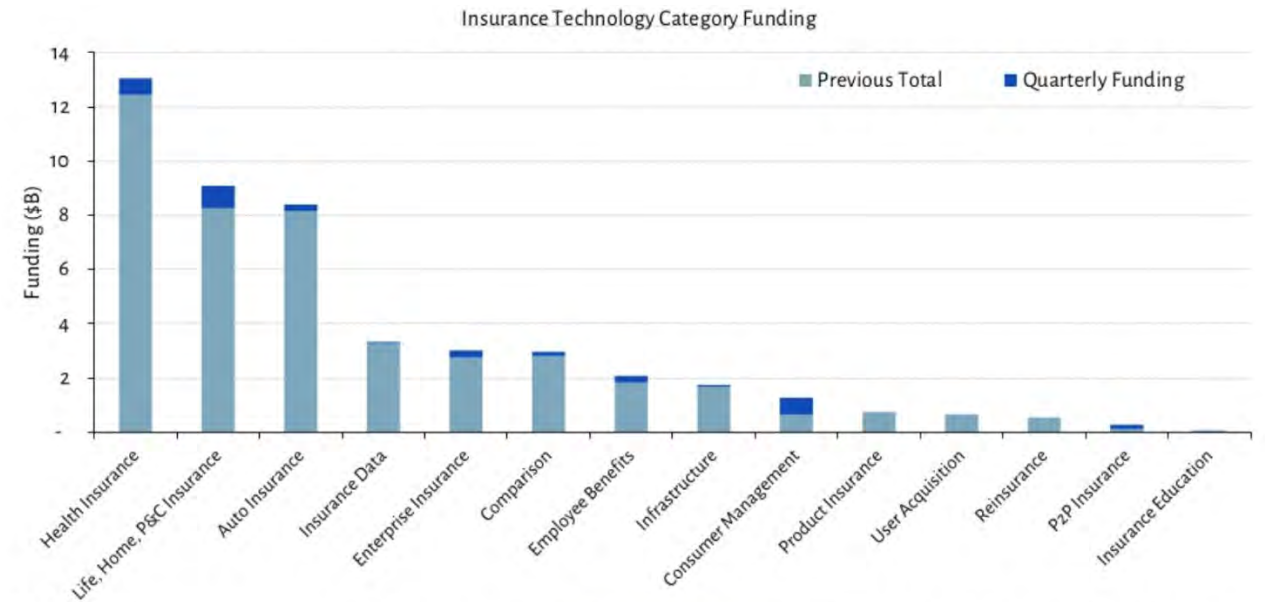
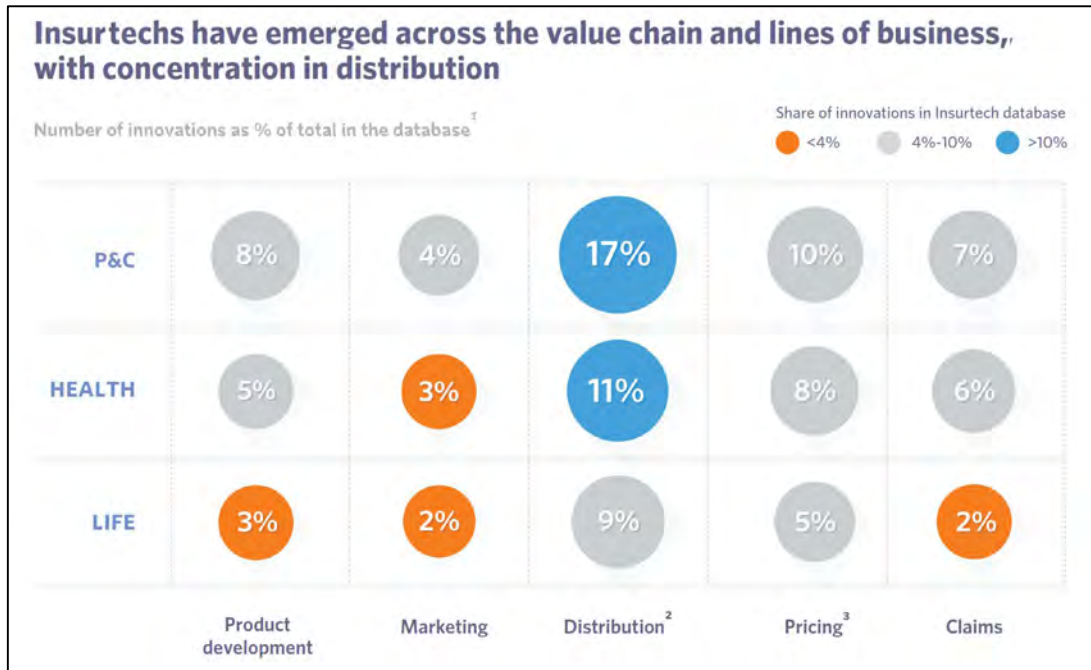
Insurtech Funding by Geography by Year (\$Millions)



	2015	2016	2017	2018	2019 YTD
Asia Pacific	1,226	220	1,898	946	861
Americas	1,272	1,297	1,021	3,026	2,642
Europe	185	125	703	369	599
Middle East	4	4	29	3	22
Africa	1	2	2	2	2

■ Asia Pacific ■ Americas ■ Europe ■ Middle East ■ Africa

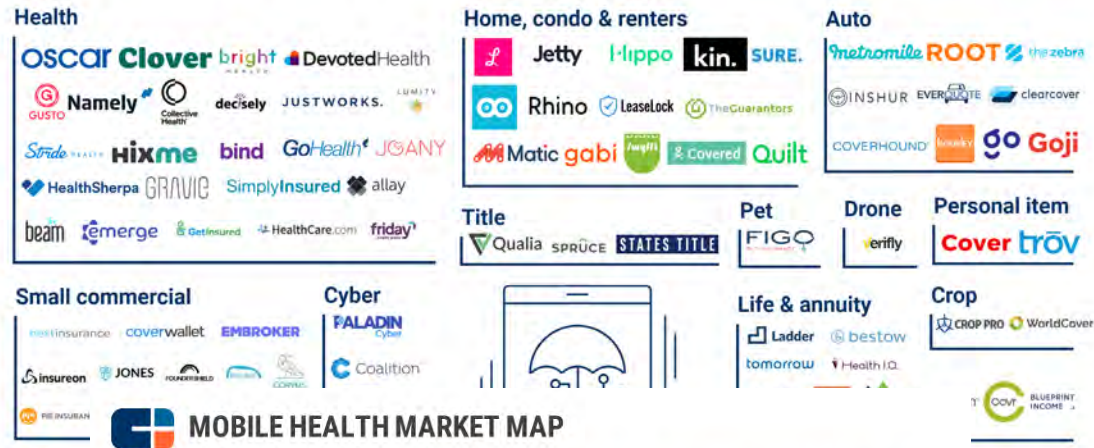
# The Money ... Where is it Going?





# The Signal In the Noise

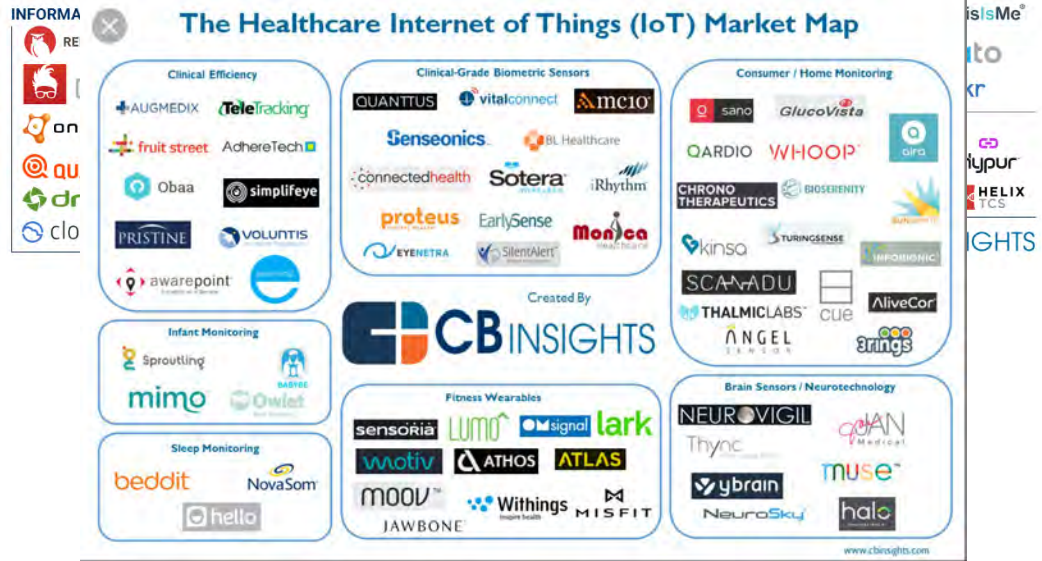
## US Insurance Tech Market Map



## MOBILE HEALTH MARKET MAP



## REG TECH MARKET MAP





# Swim Lanes?

TECHNOLOGY NEWS MAY 22, 2019 / 12:05 PM / 5 MONTHS AGO

## Allianz leads C\$100 million funding round for fintech Wealthsimple

Since 2015, Canadian insurer and investment manager Power Financial, which has C\$800 billion in assets under management, has invested C\$165 million in Wealthsimple.

## Introducing Tesla Insurance

The Tesla Team • August 28, 2019

Crunchbase Solutions Products Resources

Mosaic Insurance Alliance acquired by Metromile

# CVS Health Completes Acquisition of Aetna, Marking the Start of Transforming the Consumer Health Experience

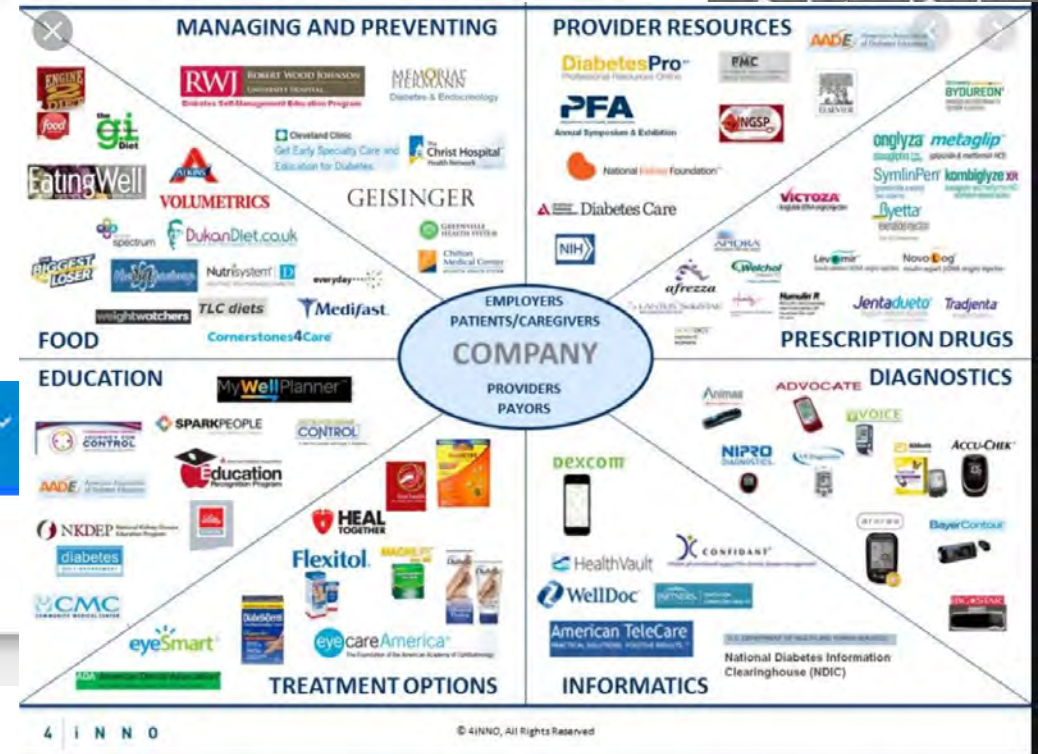
Wednesday, November 28, 2018

Combined company brings together capabilities of two leading organizations to establish innovative health care model

Media Contacts

CVS Health

CVS Pharmacy – Retail



## Insurance Players With Innovation Units

Recall insurers with innovation units below



## Sun Life Financial acquires Maxwell Health

- Robust technology platform provides complete benefits administration -

NEWS PROVIDED BY  
Sun Life Financial -  
Jun 04, 2018, 04:00 ET

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STARTUPS • VENTURE

# German Insurance Giant Allianz Upsizes VC Fund To \$1.1B

evedo February 20, 2019

BUSINESS • STARTUPS • VENTURE

## Insurtech Startup Ethos Raises \$60M in GV-led Series C, Marking Third Raise In 14 Months

Mary Ann Azevedo August 27, 2019



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## Prudential to Pay \$2.35 Billion for Online Startup Assurance IQ

Largest insurer by assets expects three-year-old company to help it draw middle-class customers

## Next Insurance raises \$250M from Munich Re, becomes a unicorn

Manish Singh @mfsr / 8:21 am EDT • October 7, 2019

Comment

### RGAX to Acquire LOGIQ<sup>3</sup> Group

Subsidiary of Reinsurance Group of America, Incorporated to Expand Technology and Service Offerings to the Insurance Industry

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ST. LOUIS--(BUSINESS WIRE)--RGAX, a subsidiary of Reinsurance Group of America, Incorporated (NYSE: RGA) today announced that it has agreed to acquire LOGIQ<sup>3</sup> Inc. – a group of companies that provides technology, consulting, and outsourcing solutions to the North American life insurance and reinsurance industry. The LOGIQ<sup>3</sup> Group includes LOGIQ<sup>3</sup> Corp., APEXA, Cookhouse Lab, and Tindall Associates Inc. (TAI).