ACTUARIAL SOCIETY of HONG KONG 香港精算學會

Hong Kong Actuaries

Actuarial Society of Hong Kong's Newsletter

SUMMER VOLUME 02
July 2017

FEATURE ARTICLES:

Usage-Based Insurance - The New Normal of Auto Insurance? - Interview with Mr. Paul Qi

Life & Health Insurance Innovation with Wearable Technology

Insurtech: An Introduction on Key Emerging Technologies

COUNCIL UPDATE:

ASHK Health Committee Offers Advice on Voluntary Health Insurance Scheme

Feature Articles:

How Insurtech Transforms Insurance Industry?

Call for Articles or Views for the next issue of Newsletter

While all articles are welcome, we would especially like to receive articles for the Feature Articles and Knowledge Sharing sections. If you have written any inspiring articles or have read any interesting articles from other actuarial organisation(s), please feel free to let us know. We will try to reprint the article(s) in our newsletter to share with our members. For the above issues, please e-mail your articles or views to Rachel Chu by email at rachelchu@bluecross.com.hk or ASHK Office by email at info@actuaries.org.hk

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Note: Views expressed are not necessary those of The Actuarial Society of Hong Kong

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Dear Readers,

It's nice to see you the second time this year!

This issue features the theme of Insurtech, a recent hot topic we would like to explore with you. The feature articles cover the use of Insurtech and its effect on both General and Life insurance industry.

We are pleased to have Mr. Paul Qi to share with us the use of Usage Based Insurance (UBI) in auto insurance. Mr. Qi is the CEO of OKChexian, whose company has recently obtained the first patent in China for the UBI apps. Let's congratulate him for his success!

It is also our pleasure to have Mr. Sam Yeung, Senior Client Relationship Manager & Actuary of Munich Re. He will talk about the innovation of wearable technology on Life and Health Insurance.

In addition, Mr. Lie Jen Houng, Actuarial Consultant of Deloitte will give us an introduction on various types of Insurtech, such as Blockchain and Artificial Intelligence (AI) etc. You may be interested to know whether actuaries will be replaced by AI. To find your answer, read the article.

As always, we are open to recommendations on publications matters. Please do not hesitate to contact me at rachelchu@bluecross.com.hk or ASHK's office at info@actuaries.org.hk regarding any interesting ideas. We would be glad to hear from you.

I hope you enjoy reading the topic of this volume.

Best regards,
Rachel Chu
Editor

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Health Committee – Sam Yeung

ASHK Health Committee Offers Advice on Voluntary Health Insurance Scheme

The Health Committee met with the Food and Health Bureau (FHB) and Deloitte Consulting on 22 June 2017, to offer input on the Voluntary Health Insurance Scheme (VHIS). Since FHB appointed Deloitte to finalise the detailed requirements for implementing VHIS, Deloitte has met with multiple insurers and the Hong Kong Federation of Insurers to collect feedback on detailed VHIS requirements. ASHK, as the local professional organisation for actuaries, provides FHB and Deloitte with impartial professional opinions on actuarial aspects of VHIS to facilitate product design and to enhance sustainability of the planned VHIS plan.

Listed below are the highlights of the discussion. The Health Committee welcomes other members' input or questions.

Benchmark Premium Rates

- FHB and Deloitte clarify that the benchmark premium rates are necessary to assess the amount of tax incentives and the impact of VHIS plan on the public healthcare system, but not for premium rate regulation.
- ASHK advises that the assumptions of underlying risks are critical and since the risk profiles and expenses may vary significantly among insurers, FHB should handle the benchmark premium rates with care and proper disclosure to avoid misunderstanding among consumers.

Case-Based Exclusion of Pre-Existing Conditions

- ASHK suggests that, in principle, insurers should disclose the reasons for the exclusions and allow customers to provide supporting evidence to request appropriate adjustment. It is however difficult to standardise underwriting practices with a generalised guidance note.
- ASHK recalls that under the previous proposal with guaranteed acceptance and high-risk pool, the premium loading would be capped at 200%. If FHB wants to encourage insurers to offer a premium loading alternative to exclusions for a specified subset of minor or moderate conditions, the feasible range of the resultant premium loadings should be limited and unlikely exceed 200%. Deloitte may take this criterion into consideration if it decides to specify the subset of medical conditions to be subject to the loadings alternative requirement.
- To further encourage insurers to offer premium loadings to certain conditions which are mostly excluded at present and are thus difficult to price due to the lack of experience data, FHB can leverage data from Hospital Authority to help the industry price such conditions.

Benefit Schedule for Standard Plan

- ASHK comments that high benefit limits will lead to self-induced medical inflation while if the benefit limits are too low, VHIS will not achieve its policy objectives of "minimum adequate coverage." On balance ASHK recommends to set the minimum adequate benefit level at 50th percentile (i.e., median) of medical cost for the relevant treatment or procedure.

Migration to VHIS Plan

- ASHK expects the situation concerning existing or closed blocks varies significantly among insurers. As such, ASHK recommends FHB to allow insurers to develop their own underwriting approach and program for letting existing members migrate to the VHIS plan.
- A prolonged window of migration increases the risk of anti-selection from existing members.

Coverage of Mental Conditions

- ASHK comments that the diagnosis of mental conditions is often subjective, and that treatment tends to be prolonged and subject to relapses. Most important, the coverage of mental conditions under VHIS plan may not offer relief to the public healthcare system.

Health Committee – Sam Yeung

Coverage of Congenital Conditions

- ASHK comments that such coverage is subject to anti-selection and will be difficult to price.

Non-surgical Cancer Treatment

- ASHK comments that the "per cancer" benefit limit is preferred to "per year" benefit limit from the viewpoint of ensuring the sustainability of VHIS plan.

Advanced Diagnostic Imaging

- ASHK comments that coinsurance or co-payment may not affect utilisation of advanced imaging for individuals with multiple insurance policies, but will have a cost reduction effect. The coverage may be considered inadequate, however, for individuals that currently do not have medical insurance coverage and are the target segment for VHIS plan. It is nevertheless meaningful to introduce coinsurance as a signal to the public to reduce elective use of such tests and reduce ramp-up demand from those that are not well covered before VHIS.
- ASHK comments that the appropriate use of advanced imaging before hospital admission may be better addressed through clinical guidelines (e.g., admission report requirement) and definition of "medically necessary." ASHK concurs that setting the benefit limit near the outpatient charge level will help steer the tests from in-patient to outpatient setting.

Interested ASHK members please feel free to contact Sam Yeung, Chairperson of the Health Committee, with comments or questions.

▲ Members of the ASHK Health Committee at the meeting (left row): Ben Ng, Lawrence Tsui, Ken Cheung, Albert Chu, Sam Yeung, Orchis Li, and Steve Tong.

Workshop for University Students 2017

To foster communications between the industry and prospective joiners as well as to help students in career planning, ASHK and Actuaries Institute Australia will jointly deliver a workshop in late September 2017 for local university students who are interested in pursuing the actuarial profession.

Passing the Torch

Eager to Share Views and Experiences

CALL FOR VOLUNTEERS

Inspire Young Talents

If you are interested, please contact Ms. Sarah Hui of the ASHK Office at 2147 9168 or via email sarahhui@actuaries.org.hk.

Join Us to Nurture Budding Actuaries!

Usage-Based Insurance - The New Normal of Auto Insurance? - Interview with Mr. Paul Qi

Paul Qi
MA(Actuarial Science), BE(Information Science), BA(Law)
CEO
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ASHK: Could you kindly share with us what is Usage-Based Insurance (UBI)?

PQ: The concept of UBI got popular. It reflects the insurance market needs change in the phase of new technologies such as smartphone, smart cars, IOT, AI and etc. But from insurers' perspective, newer technologies only raise the bar of competition and make risk management more complex. So the actual application of UBI is cautiously executed and so far has evolved from "Pay As You Drive" to "Pay How You Drive" and lately further to "Manage How You Drive". Technologies that are more interactive and grant easier access to more data will eventually prevail.

ASHK: From your perspective, have these technologies been widely used in insurance industry of other countries? How does it compare with Chinese market?

PQ: Across the world we've seen many InsurTech ventures, but with majority taking place in Europe and US, where the industry of insurance is more developed and meanwhile technology startups are also more blessed. The market of insurance in China is still developing. But as we witness in other industries, late mover might have advantage and leap directly to higher phase. We do see many InsurTech rising up in China in the past two years, especially with UBI.

ASHK: Would you mind giving us some examples of Insurtech rising up in China?

PQ: There are around two hundred InsurTech startups that got funded in the past three years. The majority of the startups focus on health and auto, and others focus on special lines such as Jewelry Insurance. Also a few "Internet Insurers" were licensed. I've witnessed how technologies like telematics, wearable devices, big data, chat bots, blockchain are spreaded from InsurTech startups to traditional insurers.

ASHK: UBI involves accessing personal data. How to strike a balance between privacy and data collection? And how to ensure the data quality?

PQ: Telematics technologies involve accessing personal location data, and can sometimes be sensitive. Users' permission has to be granted before data can be collected and utilised. At OKChexian, we ask for users to approve the access to sensor data upon the installation of the app, and users can see and edit trip data anytime they like. We own the patent in China for detecting driving behaviour with smartphone sensors.

ASHK: What benefits do these technologies bring to the insurance industry?

PQ: UBI enables insurance industry to better manage risks in many ways. First UBI helps to monitor realtime risks as they occur and with much more details. It also promotes awareness among the insured and gradually lower frequency of claims. At last, UBI helps to further digitise the industry from underwriting to claim and lowers operating cost. Eventually technology will reshape the entire insurance industry as we know today. It's gonna bringing benefits and retiring legacies at the same time.

ASHK: How does UBI help underwriting, claim and how does it lower the operating cost?

PQ: At OKChexian, we monitor users' driving regularity and habits on a daily basis. For each driver, we develop models to evaluate her driving safety in the form of a score, which we call OKScore. This score ranges from 350 to 950, the more the safer. We've tested OKScore with insurers' claim and loss data and achieved significant improvements. We are working with insurers to use OKScore for pricing and give actual discounts to users with higher scores. We also provide driving data for claim adjustments.

ASHK: How does it bring benefits and retiring legacies at the same time?

PQ: Telematics and UBI will bring a fully digitised future of insurance. Online user acquisition not only generates sales leads but also bring in personalised data for underwriting and pricing. Users and insurers are directly connected and efficiently retained. Crashes can be detected in realtime, and claim service and assistance can be pushed to drivers before users find the right numbers to call. The entire workflow will be more effectively operated with fewer personnel and lower expense.

ASHK: What will be the challenges ahead for the insurance industry?

PQ: The war of UBI is across industries of insurance, internet and automobile. These industries breathe different air but all breed talents. Insurance doesn't hold all the cards to win, and it has to fight in disadvantaged battlefields. I would make the prediction that insurance will lose to internet on distribution and customer loyalty and lose to automobile on system design. Insurance might shrink to risk management and claim service, which is the essential core of the business.

ASHK: In what other areas can we further apply the technology? Do you foresee a higher demand for it?

PQ: I see the same logic of UBI applies to many lines of insurance in the same way as auto, wherever individual risk profiles vary greatly among users, such as health, life and home. It's only the question of if and when the technology is there. There is certainly demand for better technology, better ways to comprehend the data and use for risk management, better ways to segment the market and create better products.

ASHK: Could you kindly share with us the future trend? And how can actuaries equip themselves in order to catch up with this trend?

PQ: I am optimistic that technologies will create ways for us to better examine risks but can never eliminate risks, which will continuously require talents to handle complex models and improve risk management. Actuaries are certainly best equipped for the job, but the skillets required will also be further broaden. Understanding of IT, communication, data, AI, product and consumer would definitely help.

ASHK: You have mentioned a few times about risk management. Would you please elaborate more? Say, how UBI changes risk management? How does it compare with the traditional risk management?

PQ: Traditional pricing for Auto Insurance didn't have a way to evaluate driving safety, and had to use other proximate data elements to measure self-control, such as number of years of being licensed, marital status, whether or not having kids etc. Telematics can directly capture driving behaviour and therefore provides a better assessment of driving risk.

Life & Health Insurance Innovation with Wearable Technology

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During the past few years, insurers have gravitated towards the use of smartphones and wearable technology or risk getting left behind. The most popular application of wearable technology has been in the area of life and health insurance particularly wellness-based loyalty programs. While much is yet to be learned about the proper use of wearables to effectively assess and manage underlying insurance risks, wearable technology, together with big data analytics and other technological advances, will change how insurance policies are defined, priced, underwritten, distributed and adjudicated. Actuaries should take advantage of the opportunities and help the industry evolve and better serve our customers in this digital age.

To begin with, the launch of iPhone in 2007 made individual-based smart sensors a reality. According to the Economist, about half the adult population today owns a smartphone, and 80% will by 2020. (The Economist, 2015) Each smartphone is equipped with significant computing power and sensors to tell where you are, what web sites you visit, whom you talk to, and even how healthy you are. The International Data Corporation (IDC) expects wearables will continue rapid growth worldwide at close to 20% p.a. in the coming years. (IDC, 2017)

The availability of smartphones and wearables prompts research on health measurement and health management solutions to address major non-communicable diseases such as cardiovascular diseases, cancers, respiratory diseases and diabetes that account for about 70% of all deaths globally. (World Health Organisation, 2017) For example, Apple Inc. is working on a novel sensor that can continuously and non-invasively track glucose, while Alphabet Inc., Google's parent company, is developing a contact lens to track blood sugar without pricking the skin and has secured partnerships with life sciences companies such as Sanofi S.A. and Dexcom Inc. Such technologies will enable underwriters to assess, monitor and better manage sub-standard risks.

At present, multiple insurers including AIA, Manulife and Ping An Health have developed wearable-based wellness programs in Australia, mainland China, Hong Kong and Singapore. These programs reward regular exercise with premium discounts on select living benefits policies and are positively received particularly among young people. Globally as well as across Asia Pacific markets, insurers are striving to optimise data collection and to develop differentiating life and health insurance products and service propositions.

Not only are insurers using devices to help promote wellness but also continue to enhance risk assessment or to facilitate risk selection. Companies like Vivametrica are developing big data applications that use data from smartphones and wearables for underwriting life and health insurance.

From an actuarial perspective, wellness programs promote healthy lifestyle and address the health concerns of aging populations. Dr. Marcia Angell, a Harvard Medical School professor and former editor-in-chief of The New England Journal of Medicine, has advocated lifestyle changes such as exercise and diet as a better

cure than medication for Type 2 diabetes. Studies have suggested correlation between lifestyle (e.g., walking) and mortality improvement. It is possible that wearables will help identify preferred risks and increase the insurability of sub-standard risks. Nevertheless, more research about the accuracy of wearables and predictive power of wearable data is necessary before we ascertain how to use wearables for risk stratification to supplement or to replace current mortality or morbidity underwriting approaches.

From a commercial perspective, Pokemon Go succeeded in lifestyle changes by encouraging couch potatoes to walk around parks and residential compounds. We will likely witness similar engaging programs emerging in the future. Financial incentives alone are not sufficient to induce lifestyle changes, given that credit card companies in Asia Pacific already offer comprehensive rewards ranging from super market coupons to airport lounge membership such that the financial rewards of wellness programs constitute a subset of credit card rewards.

Overall, increasing focus on modifiable risk factors represents a positive development to better address insurance protection gap and we should also look beyond wearables. During my recent trips to mainland China, I have been impressed with bicycle-sharing services that, together with payment vendors, are developing broader scopes of big data analytics including individuals' lifestyle choice, financial credit rating and geographic location. It is foreseeable that insurers will work with a wide range of digital partners to design, distribute and administrate insurance policies, subject always to appropriate privacy data protection guidelines.

In conclusion, wearables and other technological advances provide actuaries with exciting opportunities for new insurance populations, distribution channels, product innovation and rating factors. The actuarial profession will evolve with the changing environment by acquiring new knowledge and business ideas. Wearables represent the arrival of a new era for business-driven actuaries to capture market changes and stay ahead of the curve.

Mark down in your calendar!

Joint Regional Seminar in Asia — Hong Kong
Theme: Divergent – The Devil is in the Details
Aug 2

ASHK Pension Seminar
Sep 6

ASHK IFRS Seminar
Sep 11-12

ASHK Professionalism Course
Sep 27

ASHK Evening Talk
Speaker: Chris Hancorn, PwC
Oct 11

ASHK Healthcare Seminar
Oct 13

ASHK Text Mining Workshop
Oct 27

ASHK Annual Dinner
& Appointed Actuaries Symposium
Nov 6-7

ASHK AGM
Dec 12

ASHK Healthcare Seminar

ACTUARIAL SOCIETY of HONG KONG 香港精算學會

13 October 2017 Hotel ICON - Hong Kong

CALL FOR PAPERS
ASHK Health Seminar 2017: Sustainable Healthcare Protection

The Actuarial Society of Hong Kong invites you to attend the ASHK Health Seminar 2017 which will be held in Hong Kong on 13 October 2017 (Friday). The overall theme of the seminar, "Sustainable Healthcare Protection", recognises that the insurance industry evolves to meet the needs and expectations of its customers, and the role of actuaries in ensuring sufficient and affordable healthcare protection.

The Health Committee is starting the search for speakers to deliver informative, engaging and inspiring presentations at this prodigious event. Would you like to be part of the programme?

Key Topics:
The Health Committee has identified the following four key technical topics for discussion, whilst remaining open to other proposals that are relevant to health insurance management and development:

A. Risk, capital and value;
B. Products, markets, customers and distribution;
C. Data, analytics and technology;
D. The role of the actuary and professional skills.

The Health Committee will select speakers based on the quality of the content.

GUIDELINES FOR PAPER

1. Synopsis submissions should reach the ASHK (info@actuaries.org.hk) by **4 August 2017**. The synopsis should include sufficient details about the presenter, topical scope, methods, results, conclusions and references to existing literature. Please submit your synopsis using this RFP template.
2. The Health Committee will shortlist contributions for presentation based on the submitted synopses.
3. Provisional acceptance, rejection and any additional feedback will be communicated to each submitting author no later than **11 August 2017**.
4. Presenters will use the ASHK's standard PowerPoint template, and will target to present for about 45 – 60 minutes' duration.
5. Completed papers and final presentation files should be submitted to the ASHK by **29 September 2017**.

Any queries about the procedures for submitting a paper and/or presentation should be directed to the ASHK Health Committee at info@actuaries.org.hk.

Note: All speakers shall incur the cost of attending the seminar (other than admission to the event) at their own expense.

The Health Committee thanks for your interest and support, and looks forward to hearing from you!

Health Committee

Insurtech: An Introduction on Key Emerging Technologies

Lie Jen Houng
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Insurtech is stood alone on the stage in the spotlight inside the fintech world. According to KPMG[1], venture investment in insurtech companies have raised 102% from 2015 to 2016 ($590.2 M vs $1192.7 M).

Insurtech is the abbreviation for "insurance technology". According to Investopia[2] , insurtech refers to the use of technology innovations designed to squeeze out savings and efficiency from the current insurance industry model. There are many ways to classify insurtech into categories. In this article, I will introduce some key emerging technologies and how it is transforming the insurance industry.

1. Internet of Things (IoT)

The Internet of things (IoT) is the inter-networking of physical devices, vehicles (also referred to as "connected devices" and "smart devices"), buildings, and other items embedded with electronics, software, sensors, actuators, and network connectivity which enable these objects to collect and exchange data[3].

General Insurance (or Property and Casualty) industry is commonly known as the industry that may affect drastically by IoT. Imagine that your car is connected to the internet, with automatic detection system. If the car is defected or damaged, the system will automatically send out message to the insurance company, and trigger the claims payment. The whole claims processing can be digitalised and automated, enhancing customers' user experience and increasing companies' operational efficiency .

Metromile[4], an US startup, is using IoT with the concept usage-based insurance (UBI) that enables you to pay for your motor-insurance on a per-mile basis. Trov[5], an Australian startup, provides on-demand insurance that allows you to insure your items by taking photos in your mobile phone. Wearable and wellness program, like AIA Vitality and Manulife Move[6], tracks your exercise activities and give you insurance discount if you have a healthy living style.

With the above use cases, traditional actuarial pricing may not be suitable anymore. Instead of using Excels and crunching numbers by loss triangles, these new business models require a faster pricing and repricing process, even simultaneous. Actuarial pricing is then required to translate into algorithms embedded in the applications, for example: websites, mobile phone, where the customer purchase insurance.

[1] https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2017/02/pulse-of-fintech-q4-2016.pdf
[2] http://www.investopedia.com/terms/i/insurtech.asp
[3] https://en.wikipedia.org/wiki/Internet_of_things
[4] https://techcrunch.com/2016/09/21/pay-per-mile-insurance-startup-metromile-raises-191-5m-acquires-mosaic-insurance/
[5] https://techcrunch.com/2017/04/06/trov-adds-45-million-for-the-global-expansion-of-its-on-demand-insurance/
[6] http://www.scmp.com/lifestyle/health-beauty/article/1894391/why-two-insurance-companies-want-pay-hongkongers-work-out

2. Big Data Analytics

Big data has been a buzzword in the insurance industry for years. However, many people are still confused by the concept, using the term for whatever projects that are associated with data analytics.

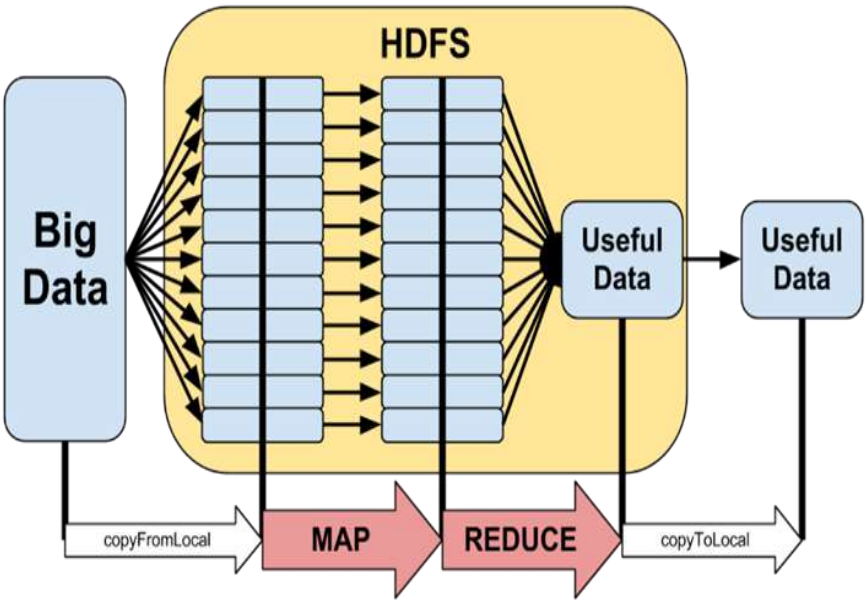
To make it simple, "Big Data" really means Big Data. Traditional data processing has limited capability for handling a large amount of data. For example, R, a commonly used statistical software, use in-memory processing that requires to store all data input in computer's random access memory (RAM). As the RAM in a single machine is limited, if there is a huge amount of data input, these software will fail to store all the data in memory and therefore unable to run the analytics algorithm.

Big Data is closely related to the distributed computing technologies from the field of computer science. The concept is basically to (1): split the job to multiple machines to perform the run, (2): gather the run results and store it somewhere. The technology is widely adopted in the industry. For example, Prophet Enterprise[7], a commonly used actuarial valuation system in the life insurance industry, can split data to difference machines (more precisely, workers) to perform runs in parallel.

Apache Hadoop[8] is one of the first generation of Big Data framework that is used for large scale data analytics. It uses the MapReduce algorithm to divide the job (Map) and gather the results (Reduce). The technology has been evolving quickly with new framework comes out like Spark, Storm, Kafka, etc. The raise of Cloud computing platform like Microsoft Azure and Amazon Web Service (AWS) even made Big Data more scalable, on-demand and flexible.

Data architecture, as we have just discussed above, lays out the fundamental IT infrastructure that makes big data possible. On the other hand, the process to convert raw data into useful information, often with prediction ability, is called Data analytics. The popularisation of machine learning techniques like Classification and Regression Trees (CART), Principal Component Analysis (PCA) and Artificial Neural Networks (ANN) has made predictions more accurate, and generated more application by using those algorithms (eg: Fraud Detection, Recommender System, etc).

Lastly, the business needs to convert information into strategic decision has stimulated the growth in areas like Data Visualisation to better communicate the result for decision making. All these aspects adding together become the "Big Data Analytics" that we are referring in a vague context.



[7] http://www.prophet-web.com/prophet-products/prophet-enterprise
[8] https://en.wikipedia.org/wiki/Apache_Hadoop

Haven Life[9], an US start-up owned by Massachusetts Mutual Life Insurance Co., use predictive analytics to automate underwriting decisions. Coherent Capital Advisors[10], a Hong Kong startup, use interactive data visualisation dashboard to help companies to make better investment decisions. AXA has setup the Data Innovation Lab[11] in Singapore aims at using analytics to improve actuarial pricing accuracy. Many large life insurers in Asia has switched, or planned to switch their computing platform to Cloud computing environments.

Big data is no longer a buzzword now and already becomes an integrated part of the insurance industry. The use of the technology has been directly or indirectly affected different domains of actuarial works, including underwriting, pricing, valuation, risk management and financial / management reporting.

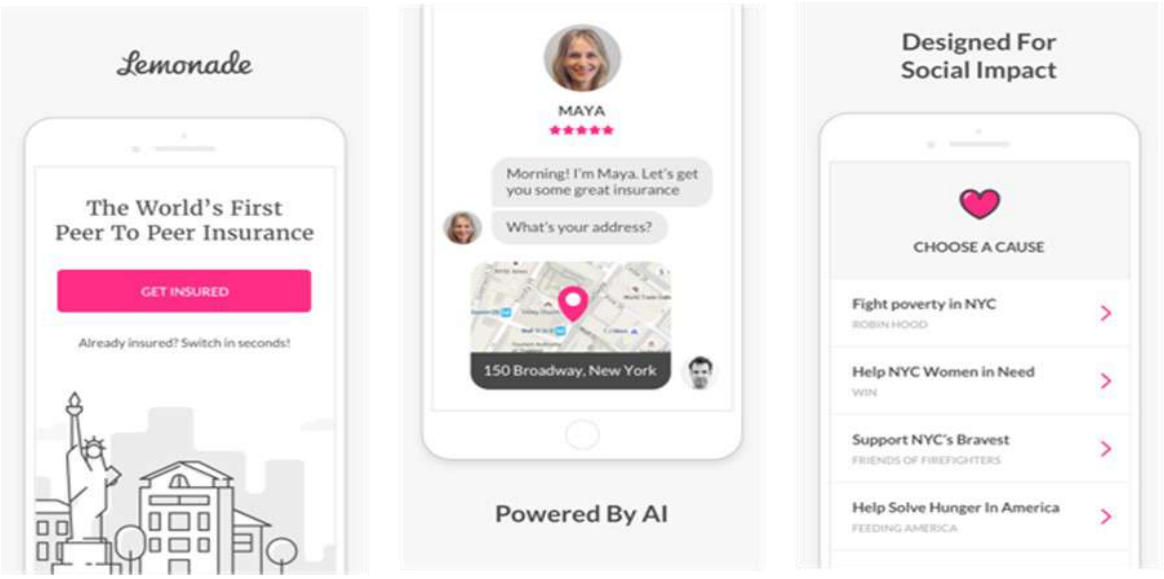
3. Artificial Intelligence (AI)

Artificial intelligence (AI) is intelligence exhibited by machines. The term "artificial intelligence" is applied when a machine mimics "cognitive" functions that humans associate with other human minds, such as "learning" and "problem solving"[12].

Although there are many overlapped areas, AI should not be messed up with terms like predictive analytics, big data or machine learning. Simply speaking, what AI is more than advanced analytics or data science is that, it requires computer to think and interact with human. This requires computer to understand human languages (e.g. Natural Language Processing), able to recognise speech and visual information (e.g. Face / Speech recognition) or problem solving without human intervene (e.g. Unsupervised Machine Learning).

An important technique that are used by most AI program is the "Deep Learning"[13]. Deep learning is similar to the machine learning algorithm ANN that we have mentioned in the previous section, but with more hidden layers. The hidden layers allow non-linear relationship between input and output, hence is more accurate for learning data with complex structure, for example: Face / Speech recognition.

Fukoku Mutual Life has partnered with IBM Watson to automate claims processing[14], and expected to increase productivity by 30% after the system launched. Lemonade[15], a US peer-to-peer insurtech startup, is using chatbot to automate some interaction between its application and its customers. Oscar Health[16], a US-based health insurer uses AI to match patients with the right doctors.



Source: The Digital Insurer

[9] https://www.wsj.com/articles/the-latest-gamble-in-life-insurance-sell-it-online-1484217026?mod=e2tw
[10] https://topick.hket.com/article/1802349/80%E5%BE%8C%E7%B2%BE%E7%AE%97%E5%B8%AB%E4%B8%8D%E7%94%98%E6%B2%89%E6%82%B6%E3%80%80%E6%A3%84%E9%81%8E%E7%99%BE%E8%90%AC%E5%B9%B4%E8%96%AA%E5%89%B5%E4%BF%9D%E9%9A%AA%E7%A7%91%E6%8A%80%E5%B9%B3%E5%8F%B0
[11] https://www.axa.com/en/newsroom/press-releases/investments-asia-accelerates
[12] https://en.wikipedia.org/wiki/Artificial_intelligence
[13] https://en.wikipedia.org/wiki/Deep_learning
[14] https://www.theguardian.com/technology/2017/jan/05/japanese-company-replaces-office-workers-artificial-intelligence-ai-fukoku-mutual-life-insurance
[15] https://venturebeat.com/2016/09/21/lemonade-insurance-social-good-p2p/
[16] https://www.ft.com/content/a0d9aa8a-1494-11e7-80f4-13e067d5072c

The use of AI is more likely to affect actuaries' work indirectly. For example, remote diagnostics makes automated claims processing more efficient. Chatbot is likely to change insurers' distribution channel, makes online insurance sales more automatic. A good news is – AI is unlikely to replace actuaries, given the high intellectual demand for our works that are unlikely to be learnt by the machine learning algorithms (at least for now).

4. Blockchain (Distributed Ledger)

Blockchain is a hot topic around the world these days, yet for many, the technology remains an elusive concept.

According to IBM, Blockchain is a shared, immutable ledger for recording the history of transactions. It fosters a new generation of transactional applications that establish trust, accountability and transparency[17]. The Economist, has used the word "Trust Machine" to describe Blockchain[18].

One need to distinguish Blockchain from Cryptocurrency like Bitcoin, as Cryptocurrency is only one use case for Blockchain. Estonia has used Blockchain for Digital Identities[19] for years, and the system so far is immune to cyberattack. Ethereum[20], a Blockchain platform, has introduced the concept of "Smart Contract", which use Blockchain to enable the creation of a customised, automated and immutable contracts between parties.

Aegon, Allianz, Munich Re, Swiss Re and Zurich have launched the Blockchain Insurance Industry Initiative B3i aiming to explore the potential of distributed ledger technologies to better serve clients through faster, more convenient and secure services[21]. A possible application is to automate the reinsurance treaties using smart contract. Dynamis[22], a peer to peer insurance running on the Ethereum platform, aims at using smart contract to automate insurance in a Decentralised autonomous organisation (DAO), ultimately disintermediate insurance companies and make insurance fully mutual. Deloitte has listed out 10 other use cases for Blockchain application on insurance[23].

Blockchain is still a rapidly growing technology and new ideas[24] are coming out every day. While the financial industry is still trying to find the "Killer-app" for Blockchain, it is undeniable that Blockchain will become the backbone technology for next generation finance. It is imaginable that in the future, Actuaries may need to create new insurance contracts in the Blockchain platforms!

Insurance industry has long been considered as laggards in technology innovation, thanks to its high entry barriers due to regulations and specialised knowledge. However, if we, Actuaries, are not well-equipped ourselves with the new technologies, or even not aware of them, it is possible that one day we will be replaced by the software engineers from Google, Amazon or Facebook, as they have already attempted[25].

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[17] https://www.ibm.com/blockchain/what-is-blockchain.html
[18] http://www.economist.com/news/leaders/21677198-technology-behind-bitcoin-could-transform-how-economy-works-trust-machine
[19] https://blogs.thomsonreuters.com/answerson/e-estonia-power-potential-digital-identity/
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[24] https://iota.org/IOTA_Whitepaper.pdf
[25] https://techcrunch.com/2015/03/05/google-compare-car-insurance-us/

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Market Update

Regulation of insurance companies by Insurance Authority from 26 June 2017 onwards

The Insurance Authority (IA) is an independent regulator responsible for regulating and supervising the insurance industry. The IA has been regulating insurance companies since 26 June 2017, and will take over the regulation of insurance intermediaries in about two years. Welcome to watch, like and share the IA Corporate Video to learn more about the IA's statutory functions and major initiatives. Please also visit the IA website (www.ia.org.hk) and subscribe to the IA YouTube channel for the latest information. The ASHK looks forward to closer collaboration with the IA.

IA Corporate Video (Traditional Chinese) :
https://youtu.be/yLBqnGyEZuw

IA Corporate Video (English):
https://youtu.be/3EIq08WIQSw

Other link to follow IA:
1. IA YouTube channel : https://www.youtube.com/channel/UCuves9uqEFh18Tk4no6865w

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Events Highlights

ASHK Evening Talk, 27 June 2017 - "Economic Outlook and Smart Beta Investments with ETFs"

Mr. Brian Lee and Mr. Thomas Taw, BlackRock

Speakers and Mr. Yam Chi Fai, ASHK Past President

ASHK Soft Skills Workshop, 28 June & 5 July 2017 (Sponsored by Kelly Services Hong Kong)

Mr. Brian Hodgson, Founder of publicspeaking.hk and Ms. Iris Lun, Member of ASHK Membership & Communications Committee

Ms. Heidi Lee, Kelly Services and Ms. Iris Lun, Member of ASHK Membership & Communications Committee

Oliver James
associates

We are the largest Actuarial search firm globally with over 40 consultants partnering with an international network of Insurers, Consultancies and Investment Management organisations. We have successfully guided the careers of board level directors and partners through to analysts. Our expertise encompasses contingency, retained and executive search solutions for both permanent and interim positions.

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Network	Candidates	Placements	Consultants
77,000	24,000	1,700	41

Hong Kong Market Opportunities

Executive Director, Product Development
Hong Kong
Up to HKD$2m + Bonus

Top global client seeking a senior commercial actuary to drive new product development and propositions for six key South East Asia markets. You must have exceptional technical ability, a highly creative mindset, and the confidence to work on initiatives completely new to the market.

Hamza Mush

Regional Director, Corporate Transactions
Hong Kong
Up to HKD 1.5 million

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Jason Strachan

Pricing Actuary
Hong Kong
Up to HKD$75k/ month + Bonus

International general insurer seeks pricing expert to join local underwriting team as personal lines expert. Direct reporting line to CUO, and high level of engagement with senior management. Global search for talented actuaries with 5+ years' personal lines pricing experience.

Toby Weston

Regional Deputy Chief Actuary
Hong Kong
Up to HKD$2.5m + Bonus

Successor of the Regional Chief Actuary for a top-tier insurer within Asia. You will be spearheading the actuarial team as well as driving IFRS17 and M&A and more. Previous Chief Actuary experience is a significant advantage.

Philip Chau

Reserving Actuary
Hong Kong
Up to HKD$50k / month + Bonus

Global composite insurer seeks reserving actuary for business planning function in HK Business unit. Near or newly qualified actuary sought to support the 'head of' on actuarial reserving, valuations, forecasting and planning. Local market expertise & Cantonese fluency/ proficiency required.

Toby Weston

Appointed Actuary
Singapore
200k SGD+

A great chance for a life actuary (fellow) to manage a five-strong team of actuaries, and report to the CEO and Regional CA for the Singapore market. Previous Singapore reporting experience is a significant advantage.

Daniel Kirk

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Upcoming Events

Date	Event
31 Jul - 8 Aug 2017	Joint Regional Seminar in Asia Theme: "Divergent - The Devil is in the Details" * 31 July - 1 August, Taipei (1.5 days) * 2 August, Hong Kong * 4 August, Bangkok * 7 - 8 August, Kuala Lumpur (1.5 days)
1 Sep 2017	SOA APC, Hong Kong
4 Sep 2017	SOA APC, Beijing
6 Sep 2017	ASHK Pension Seminar
11-12 Sep 2017	ASHK IFRS Seminar
27 Sep 2017	ASHK Professionalism Course (AM Session)
Sep 2017	CAS Course on Professionalism and Careers Talk, Bangkok
Sep 2017	Joint ASHK and IAAust University Workshops
11 Oct 2017	ASHK Evening Talk Speaker: Chris Hancorn, PwC
13 Oct 2017	ASHK Healthcare Seminar
27 Oct 2017	ASHK Text Mining Workshop
Oct 2017 (tbc)	ASHK Actuarial Circle
6 Nov 2017	ASHK Annual Dinner
7 Nov 2017	ASHK Appointed Actuaries Symposium
17 Nov 2017	SOA APC, Shanghai
27 Nov 2017	SOA APC, Hong Kong
12 Dec 2017	ASHK AGM

Make time for these!

Membership Update

New Members

Fellow

Pierre Chenard	AIA	Fellow [Actuaire qualifie IA, France (2011)]
Serena Tjon-Atsoi	AIA	Fellow [AAG, Netherlands (2012)]
Angela Choi	Willis Towers Watson	Fellow [FIA (2016)]

Student

Li Sai Cheung	- -	Student (IFoA Student)

Reinstated Members

Fellow

Philip Kenneth Shirley	Mercer	Fellow [FIA (1993)]
Guy Wai-Kai Yeung	Aegon Asia	Fellow [FIAA (2002)]
Vincent Hing Yu	Willis Towers Watson	Fellow [FSA (2008)]

Student

Terrace Yuk-Kwai Lee	Ernst & Young	Student (SOA Student)

Actuaries on the move

Eric Cheung
Brian Mak
Hak-Hong Soo
Grace Tang

Corporate Advertisement

The ASHK will accept corporate advertisements in the ASHK Newsletter provided that the advertisements do not detract from the actuarial profession. Acceptance and positioning of advertisement will be at the editor's discretion.

File Formats

Advertisers have to supply the artworks which should be created in MS Word/PowerPoint/JPEG/ PDF formats.

Advertising Rate

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Tel: (852) 2147 9420 or e-mail: info@actuaries.org.hk

ACTUARIAL SOCIETY of HONG KONG 香港精算學會

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We welcome members' contribution to the "Hong Kong Actuaries" Newsletter, especially, the Feature Articles and Knowledge Sharing sections. If you have written any inspiring articles or have read any interesting articles from other actuarial organisation(s), please feel free to let us know. We will try to reprint the article(s) in our newsletter to share with our members.

For the above issues, please e-mail your articles or views to Rachel Chu by email at rachelchu@bluecross.com.hk or ASHK Office by email at info@actuaries.org.hk. Publication of contributions will be at editor's discretion.